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Northwest Territories Long-Term Care Program Review

Final Report

Submitted to:

Continuing Care and Health System Planning
Territorial Health Services
Department of Health and Social Services
Government of the Northwest Territories

December 2015

Best health | Best care | Better future

Northwest Territories

Kīspin ki nitawihtīn ā nīhīyawihk ōma ācimōwin, tipwēsinēn.

Cree

ʔerihtł’ís dëne súłiné yati t’a huts’elkër xa beyéyati theʔa ʔat’e, nuwe ts’ën yółti.

Chipewyan

If you would like this information in another official language, call us.

English

Si vous voulez ces renseignements en français, contactez-nous.

Français

Jii gwandak izhii ginjìk vat’atr’ijąhch’uu zhìt yinohthan jì’, diits’àt ginohknìi.

Gwich’in

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.

Inuinnaqtun

ᑕᒃᔪᐊ ᑎᑎᖅᑲᐃᑦ ᐱᓯᒪᔨᐱᑦ ᐃᓄᒃᑎᑐᖅᓯᒪᓕᑎᒃ, ᐅᖃᖅᑎᖓᑦ ᐅᖅᑲ ᓴᖅᑐᑐᑎᑦ.

Inuktitut

UVANITTUAQ ILITCHURISUKUPKU INUVIALUKTUN, QUQUAQLUTA.

Inuvialuktun

K’éhshó got’ı̨ne xədǝ́ k’é hederi ʔedı̨htl’é yeriniwę nídé dúle.

North Slavey

Edi gondı dehgéh got’ı̨e zhatié k’ǫ́ǫ́ edatł’éh enahddhę nide.

South Slavey

Tłı̨chǫ yati k’ èè dè wegodìı wek’èhoı̨zǫ nǫǫwǫ dè, gots’ǫ̀ goahde.

Tłı̨chǫ

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The *Northwest Territories Long-Term Care Program Review* was conducted as an internal review under the direction of the Steering Committee, chaired by the Director of Territorial Health Services. Research, analysis and writing support was provided by Gaea Consulting Ltd. Research and analysis of potential funding approaches and models was provided by 5750 N.W.T Ltd.

The scope and scale of the statistical analysis was made possible through collaboration with the NWT Bureau of Statistics. The highly professional staff at the Bureau enabled the development of a robust perspective of the numerical evidence. While the Bureau provided and contributed to the customization of a range of data, ultimate responsibility for interpretation and analysis of the data rests with the review team and Gaea Consulting Ltd.

EXECUTIVE SUMMARY

NWT Long-Term Care Program Review

The Department of Health and Social Services (DHSS) set a strategic direction for continuing care in the NWT with the release of *Our Elders: Our Communities* (2014) – a strategic framework and seven key priorities for Elders and seniors. The implementation of the *NWT Continuing Care Standards* (2015) further informed and operationalized Long-Term Care (LTC) Program delivery.

The Government of the Northwest Territories (GNWT) is facing increasingly significant fiscal challenges. This is resulting in constraints to business and capital planning, which have necessitated further consideration of the demand for and supply of LTC through optimal allocation of LTC resources based on demonstrable evidence.

The *Long-Term Care Program Review* (the review) was conducted to inform options and decisions by the DHSS regarding the allocation of LTC resources and future investments across all regions of the NWT. The review involved examination of the following: the current and emerging operating framework; analysis of the demand side drivers, including the development of comprehensive population and bed demand projections; assessment of supply side drivers, including analysis of a range of program and facility data; a targeted jurisdictional review; and, the development of preliminary program delivery and funding options. Selected key findings are summarized below.

Demand and Supply Drivers

The demand for and supply of LTC services and facilities is characterized by a complex and interrelated set of drivers. The demand side consist of two categories – demographic and non-demographic drivers. While there are several demographic drivers that contribute to the demand for LTC, there are two primary drivers – age and life expectancy. The non-demographic demand drivers consist of several contributing components, with one principal driver – health status.

Relative to the demand side, the supply side components are more complex and dynamic given the need to balance policy objectives, legislative and regulatory framework, and public expectations with available resources. The principal supply side driver is the actual bed inventory in the NWT. The LTC policy discussion is further complicated by the fact that it touches upon numerous areas of public policy and how these may potentially interact and/or create unintended impacts. The New Zealand Treasury captured the challenge with absolute clarity in its 2012 report, *Long-Term Care and Fiscal Sustainability: Draft Paper for the Long-Term Fiscal External Panel*: "*While long-term care is generally viewed and organized from a health system perspective, it intersects with aspects of social and welfare policy. Also, it shares characteristics with retirement income policy and can impact intergenerational transfers*."

The dynamics between demand and supply are reflected in *Roemer's law of demand* that states 'an increase in the number of hospital beds per capita increases hospital utilization rates, and … supply may induce its own demand where a third party practically guarantees reimbursement of usage'.

Long-Term Care Trends

There are important longitudinal trends with respect to changes in the demand, supply, organization and financing of LTC in Canada and other member countries in the Organization for Economic Cooperation and Development (OECD). These trends include:

- Some 5% to 7% of the population aged 65+ years are institutionalized;
- A shift towards creating a 'more balanced' LTC system by reducing the use of institutional services, including residential based care;
- A shift away from providing LTC in hospitals, in large part due to the higher cost and alternatives such as nursing homes, as well as assisted living options with home care support for those who have less complex needs;
- The financial determinants of LTC demand are the price, the relative price of close substitutes, and the person's income and assets;
- LTC has become an important area of health economics. Its importance lies not only in its share of Gross National Product, but rather in how LTC affects economic decisions for individuals over a lifetime and across generations (e.g., persons with higher housing wealth, a pension income, and rental income are less likely to enter a facility);
- There are three basic strategic cost and/or demand control options potentially available. Public care programs can: (i) restrict eligibility; (ii) reduce the 'subsidy' level through increased co-payment charges, and, (iii) restrict the actual supply inventory of beds; and
- The availability of robust publicly funded and managed LTC facilities may in fact 'crowd out' and/or distort demand for private operators and insurance.

NWT Long-Term Care Program Financial Overview

Analysis of the program financial data from FY 2010-11 to 2014-15 provided an important component by putting the operating cost (i.e., *not fully burdened costs*) and revenue into context. The key findings include:

Total Budget: The LTC Program budget for FY 2014-15 was $22.2 million. Actual expenses were $23.6 million, with revenue of $1.0 million. This resulted in net expenses of $ 22.6 million.

Program Revenue and Expenses: The revenue generated, as a percentage of expenses, accounted for between 4.2% (2014-15) and 6.3% (2010-11). The average for the period was 4.9%, representing a subsidy of some 95%.

System Wide Cost per Bed: The cost per bed is not a '*fully burdened*' representation given that certain indirect and/or centralized expenses are not included The FY 2014-15 actual expenses were $23.6 million for 174 beds in inventory, or an annual operating cost of $136,000 per bed. The monthly and daily equivalent costs were $11,300 and $370, respectively.

Capital Investment Costs: The approximate 'all-in' cost (FY 2014-15) per bed was in the range of $800,000 to $1,200,000. The costs exclude GNWT technical and program staff time/cost, and inflation. The DHSS LTC facility design standard is the 9 and 18 bed pod design. The small scale of the facilities contributes to the significantly higher per bed costs relative to larger facilities in other jurisdictions where economies of scale can be achieved in terms of construction and operational cost.

NWT Demographic Context: 2014

Total Territorial Population: In 2014, total NWT population was 43,623. There were 22,425 Aboriginal persons, representing 51.4% of the population. Non-Aboriginal persons totaled 21,198, representing 48.6% of the population. There were 22,208 males, representing 50.9% of the population. Females totaled 21,415, representing 49.1% of the population. The corresponding total population sex ratio was 103.7 (i.e., 103.7 males for every 100 females).

70+ Years Cohort: There were a total of 1,687 persons aged 70+ years, representing 3.9% of the total population. There were 1,009 Aboriginal persons, representing 59.8% of the population aged 70+ years. Non-Aboriginal persons totaled 678, representing 40.2% of this age cohort. There were 781 males, representing 46.3% of the population aged 70+ years. Females totaled 906, representing 53.7% of the population. The corresponding population sex ratio for this age cohort was 86.2, which reflects the longer life expectancy for females and higher mortality rates for males.

NWT Demographic Projections: 2014 to 2034

While there is little growth projected in total territorial population over this period, the demographic structure continues to 'age' – with a range of associated economic and social policy implications. The overall pattern is evident at the regional level. Three regions (Beaufort Delta, Dehcho, South Slave) will in fact experience small declines in their population.

Total Territorial Population: By 2034, the total NWT population is projected to be 45,012. This represents an increase of 1,389 persons, or 3.2% from 2014. Statistically, this change in the total population is negligible over the twenty-year period, that will extend the demographic trend over the previous two decades where there was virtually no population growth resulting from net territorial out-migration and declining fertility patterns. Moreover, from the LTC Program, the age structure of the territorial population will undergo continued 'aging'.

There will be 22,877 Aboriginal persons, representing 50.8% of the territorial population. Non-Aboriginal persons are projected to total 22,135, representing 49.2% of the population. The Aboriginal population will continue to maintain a slight majority in 2034, although with a slight decrease in the share from 51.9% to 50.8%. There will be 22,424 males, representing 49.8% of the population. Females will account for a total of 22,588, representing 50.2% of the population. The corresponding total population sex ratio will be 99.3.

70+ Years Cohort: There will be 5,207 persons aged 70+ years, representing 11.6% of the total population. This represents an increase of 3,520 persons (209% increase), and a relative 'share' growth from 3.9% in 2014 to 11.6% of the total population. There will be 2,456 Aboriginal persons, representing 47.2% of the population aged 70+ years. Non-Aboriginal persons will account for 2,751, representing 52.8% of this age cohort. There will be 2,400 males, representing 46.1% of the population aged 70+ years. Females will account for a total of 2,807, representing 53.9% of the population. The corresponding population sex ratio for this age cohort will be 85.5.

Seniors' Cohort Population Peak: The 70+ years cohort will continue to increase in absolute numbers between 2014 and 2034. However, the cohort will peak post 2020 and continue a slow relative decline through to 2026. This slow decline will continue through to 2032, where a slightly accelerated decline will be experienced through to 2034. The cohort trend can be characterized as '*increasing at a decreasing rate*'.

Net Out-Migration of Seniors: The historical net out-migration of seniors (some 80% of which are non-Aboriginal) in 23 of the last 25 years has resulted in a situation of net 'export' of those aged 60+ years. The migration pattern observations for the 2001 to 2011 period are: of the total 13,880 out-migrants, 1,175 (8.5%) were 60+ years; of the total 11,560 in-migrants, 375 (3.2%) were 60+ years; and, a resulting net out-migration of 800 of persons aged 60+ years.

The key impact of this migration factor is that the remaining seniors (both Aboriginal and non-Aboriginal) represent a population cohort who will potentially continue to create a relatively higher LTC demand than what could be expected from a more typical population structure (i.e., in other Canadian jurisdictions). The NWT Bureau of Statistics population projections have accounted for migration patterns in all age cohorts.

NWT Health Status: Implications for Demand

There is a wide range of health data that confirms the reality of health status disparities between Aboriginal and non-Aboriginal population, including seniors. The evidence also indicates that those in the 40 to 59 year old groups (Aboriginal and non-Aboriginal) have demonstrated patterns of lower health status and as they age into the seniors' cohort may potentially increase demand for LTC, as well as other types of continuing care.

The most relevant metrics to illustrate the Aboriginal health disparity are hospitalization and utilization rates (i.e., admission, treatment and discharge). The NWT Hospitalization Report (2013) profiles the reasons why NWT residents were hospitalized between FY 2008-09 and 2010-11. The key findings include the following regarding utilization (annual average):

Utilization by Ethnicity: Aboriginal persons had a utilization rate of 91 per 1,000, compared to non-Aboriginal residents at 61 per 1,000.

Utilization By Community Type: Residents of regional centres (Fort Smith, Hay River and Inuvik) were the most likely to be hospitalized, followed by residents of smaller communities and then Yellowknife. The utilization rates per 1,000 were: Regional Centres at 98; Smaller Communities with 81; and 73 in Yellowknife.

NWT Long-Term Care Facilities Administrative Data

The LTC Program administrative data (FY 2010-11 to 2014-15) from the facilities provides essential insight into resident characteristics and mortality rates. The key observations include:

Residents' Profile:

- There were a total of 934 residents. This represents an average of 187 residents per year 'flowing' through the facilities;
- There were a total of 582 Aboriginal residents, representing some 62% of the total resident population. There were 352 non-Aboriginal residents, representing some 38% of the total resident population;
- Of the 461 male residents (49%), 270 (59%) were Aboriginal, and 191 (41%) non-Aboriginal; and
- Of the 473 female residents, 312 (66%) were Aboriginal, and 161 (34%) were non-Aboriginal.

Deceased Residents and Crude Mortality Rates:

- There were a total of 197 deaths of facility residents over the five-year period. This represents crude mortality rate of 21 per 100 residents (or 210 per 1,000); and
- There were 128 deceased Aboriginal residents, representing some 65% of total facility deaths. This is a crude mortality rate of 22 per 100 (220 per 1,000) Aboriginal residents. Non-Aboriginal deaths accounted for 69 deaths, representing some 35%. This is a crude mortality rate of 19.6 per 100 (196 per 1,000) non-Aboriginal residents.

NWT Long-Term Care Demand Scenarios and Demand Projections

The *Integrated Service Delivery Model* (2005) report included explicit rationale for a higher LTC bed ratio for the NWT based on the clinical, program administrative data, and demographic evidence available at that time, which included: (i) the average age of residents in NWT LTC beds was 74 years. However, due to the lack of supportive living housing options and the limited home support services in some communities, the NWT will likely continue to admit seniors into LTC facilities at a younger age than the provinces. Therefore, it is considered that a more appropriate and reasonable population cohort for planning purposes is the 70+ years cohort; and, (ii) given the unique circumstances of the NWT, it is considered that a benchmark of 110 beds per 1,000 is too low. The NWT population health experience has a demonstrated higher incidence of chronic diseases. As well, issues related to the lack of available and appropriate housing, along with the necessary supporting community based infrastructure, all contribute to higher rates of institutionalization in the NWT, and the need for additional beds, as compared to Canada as a whole.

Prevalence and Incidence of Dementia: Among the issues identified through this review was the challenge of projecting bed demand that reasonably accommodates the emerging incidence of dementia, with an estimated rate in Canada for the 65+ years cohort of 1 in 11, or 9%. The jurisdictional scan found significant program challenges posed by the increasing incidence of dementia.

Demand Projection Models and Limitations

There is extensive literature on LTC projection models and their relative utility. The three basic approaches are: Set Ratio Approach; Demand Based Approach; and, Needs Based Approach.

Set Ratio Approach: There are two variations of this approach. The first is the *Historical Financial Base Approach* in which resources are allocated by some version of an across-the-board budget increase. The second is the *Arbitrary Resource Ratio Approach* that assumes a fixed resource to population ratio (e.g., 70 beds per 1,000 population 65+ years). This system is subject to the validity (and rationale) of the original ratio.

Demand Based Approach: There are three variations of this approach: the *Basic Utilization Ratio Approach;* the *Population-Based Utilization Approach*; and, the *Resource Flow Method*.

(i) Basic Utilization Ratio Approaches: There are two versions of this approach. The first is the *Historical Utilization Base Approach.* It projects requirements based on the existing utilization ratio of resources per 1,000 people 65+ years. A variation of this approach is the *Wait List Data and Utilization Statistics Approach*. This approach makes projections based on actual utilization. However, it also includes a measure of 'unmet demand' by including some or all of the people on facility wait lists.

(ii) Population-Based Utilization Approaches: This approach includes the *Age-Specific per Capita Method*, that rather than using an arbitrary bed ratio, specific targets are set for 5-year or 10-year age cohorts of those 65+ years. The *Socio-Demographic Utilization Approach* uses a number of socio-demographic

variables (e.g., population, age, gender, marital status) to project demand.

(iii) Resource Flow Method: The Resource Flow Method combines utilization information with other data such as admission rates, length of stay for various levels of care, wait list data, mortality rates, and discharge rates.

Needs Based Approach: There are two variations of this approach: *Bed Survey Approach*, and the *General Survey Approach*. The approaches attempt to determine the extent of need in the population and base future demand on estimates of assumed need. The *Bed Survey Approach* is one in which residents of LTC facilities are assessed to determine the extent to which current bed utilization is clinically appropriate on an individual client basis.

The General Survey Approach has two variations: (i) the *Expert Opinion Survey Approach* polls experts regarding the need for continuing care services; and, (ii) the *Population Survey Approach* is one in which a sample of the population is surveyed to determine their need for care. Such surveys may rely on interviews by professional care staff and may include actual tests of functional health status.

Limitations of Fixed Ratio Based Demand Projection Models: The experience of various jurisdictions with respect to the limitations of ratio based demand models can be summed up as generally resulting in either excess capacity or long wait times for admission into a facility. Specific limitations documented in two case studies from British Columbia can be summarized in terms of what was not factored in: year-to-year dynamics of the system; area-specific differences in arrival rates and LOS; residents in care and on the wait list at the beginning of each year; the population below age 75, who accounted for 20% of total clients; and, differences in arrival rates and LOS between the two main age groups (75-85 and 85+ years) and the differences between the two gender groups.

Average Flow Model: Given the shortcomings of ratio based approaches, a reliable but simpler method is needed. Zhang et al. (2012) developed the Average Flow Model (AFM), which addressed some of the key limitations of ratio based models. The advantage of the AFM over the other approaches is its transparency, its ease of implementation in a spreadsheet, the requirement for only annual demand and LOS forecasts as inputs and its ability to assess sensitivity of service plans to changes in inputs. The AFM is based on two client flow relationships in a facility. (i) *number of beds needed next year = number of beds needed this year – client departures this year + client arrivals this year*; and, (ii) *client departures this year = number of beds this year/average LOS*.

The first equation is basic accounting; the second equation is derived by assuming that if residents remain in the system for the average LOS, then each year (1/average LOS) residents leave the system (i.e., the departure rate*)*. The number of total arrivals is calculated by using the historical per capita arrival rate multiplied by a population forecast. Given the estimates of the average LOS and the number of total arrivals in each year, the AFM uses the two equations to determine the number of beds needed. The AFM methodology informed the development of the NWT LTC Model.

NWT Long-Term Care Supply Inventory: FY 2016-17

The existing LTC bed inventory consisted of 174 beds (FY 2015-16), comprised of 161 dedicated LTC beds and 13 respite beds. Expansion of the LTC bed inventory by 27 beds will occur during FY 2016-17, which will result in an inventory of 201 beds. This will result in a reasonable alignment between the percentage of beds and the proportion of the 70+ years cohort in the regions. In FY 2016-17, there will be four regions with LTC beds slightly over the proportion of the 70+ years cohort. The regions, and their percentage variance, are: Tlicho (+2.7%), Sahtu (+1.6%), Fort Smith (+4.6%), and, Yellowknife (+0.9%). There will be three regions with LTC beds slightly under the proportion of the 70+ years cohort. The

regions, and their percentage variance, are: Beaufort Delta (-6.1%), South Slave (Hay River) (-2.0%), and Dehcho (-1.7%).

NWT Long-Term Care Demand and Supply: Demographic Based Projections

The modeling and projection methodology includes demand side and supply side assumptions. A number of assumptions inform both demand and supply. Changes to the assumptions may potentially result in consequential (or even substantive) changes in demand for and/or supply of LTC services and facilities.

Demand Side Assumptions: The demand side assumptions fall into two categories - demographic and non-demographic. Demographic demand side assumptions encompass population related factors: 2014 base year total NWT population and the 70+ years cohort; projections for the 2014 to 2034 period; and, the peak of the 70+ years cohort. The non-demographic demand side assumptions encompass a range of health status drivers, NWT Population Projection Model variables, and LTC Program standards, policies (e.g., resident co-payment) and service levels.

Supply Side Assumptions: The supply side assumptions encompass existing and projected bed inventory, capital and operating cost per bed, revenue generation through resident co-payment, resident length of stay and mortality rates, home and community care service levels, income or means testing, and the role of private and not-for-profit service providers.

Initial Demographic Driven Bed Demand Projections

The preparation of 'initial' bed demand projections are purely demographic driven and based on the population projections developed by the NWT Bureau of Statistics for the 2014 to 2034 period. The projection results provide both context and a potential '*maximum demand*'. The LTC Model subsequently makes 'adjustments' to the initial baseline projections by accounting for various factors (e.g., LOS, mortality) which results in beds being returned to the bed inventory and available for re-allocation.

Bed Demand Scenarios: NWT Projections

Four bed ratio demand scenarios were selected for the initial demographic driven bed demand projection: *Scenario 1* (115 beds per 1,000 population 70+ years at 95% bed occupancy); *Scenario 1A* (115 beds per 1,000 population 70+ years at 100% bed occupancy); *Scenario 2* (120 beds per 1,000 population 70+ years at 95% bed occupancy); and, *Scenario 2A* (120 beds per 1,000 population 70+years at 100% bed occupancy). The bed demand projections (rounded) for the lowest (Scenario 1A) and the highest (Scenario 2) bed demand, respectively, for the projection years are: 2016 is -56 and -77; 2020 is -119 and -147; 2026 is -237 and -277; and, in 2034 is -436 and -495, respectively.

Based on the preponderance of evidence, including demographic, health status, utilization patterns and rates, facility administrative data (e.g., residents' socio-demographic characteristics and mortality rates), best practices from other jurisdictions, and the bed inventory for FY 2016-17, the recommended optimal bed ratios for two time phases, are:

Phase 1: Bed Ratio of 115 per 1,000 Population 70+ Years for FY 2016-17 to 2026-27:

The DHSS approve and implement a bed ratio of 115 per 1,000 population 70+ years, using a 95% bed occupancy scenario in FY 2016-17 to 2026-27 for completing demand projections and for operationalizing the LTC Model.

Phase 2: Bed Ratio of 105 per 1,000 Population 70+ Years for FY 2027-28 to 2033-34:
The DHSS, in collaboration with the NWT Bureau of Statistics, should review and validate the population projections post the 2026 census. Assuming that: (i) the current projections and modeling assumptions presented in this review remain reasonably valid (i.e., specifically, the peaking of the growth in the 70+ years cohort and migration patterns); and, (ii) re-assessing the demographic and non-demographic drivers impact on demand and supply in order to validate the projected trends, the bed ratio should be reduced accordingly to 105 per 1,000 population aged 70+ years, using a 95% bed occupancy scenario.

NWT Long-Term Care Model and Methodology

The existing NWT LTC Model (the Model) for capacity assessment, planning and management was reviewed, updated and comprehensively documented. The Model and methodology encompass and build on a range of earlier models and best practices from other jurisdictions. Moreover, the Model and methodology reflect and integrate the operational realities and drivers of demand and supply in the NWT.

The Model consists of six components, each encompassing a specific sequence and detailed methodology: (1) Demographic baseline development and projections; (2) System resources, facilities and capacity assessment and monitoring; (3) Operating environment assessment and monitoring; (4) Bed demand and supply analysis, impact assessment and options development; (5) Capacity assessment and management plan development; and, (6) Management plan implementation, monitoring and reporting.

Operationalizing the Model: Following the development of the initial demographic driven bed projections, the Model is 'operationalized' through a review, amendment and validation of the projections by accounting for the actual 'flow' of facility residents at the territorial and regional level. The process involves the following:

- Update and consolidate the LTC Program system resources with respect to existing regional facilities and beds, including 'in-progress' construction of facilities;
- Access and consolidate administrative data for key variables: number of residents (by admission category; gender and ethnicity); number of departures; LOS; and, age at death. The data are cross-tabulated by gender and ethnicity to inform the calculations in the 'flow' that are completed post the initial demographic driven bed demand projections;
- Set the base reference year (i.e., FY 2016-17) in order to provide a more pragmatic and valid perspective on bed demand and supply situation that will exist;
- Set the bed ratio scenarios in compliance with the policy and program decisions by the DHSS (e.g., 115 beds per 1,000 population 70+ years based on 95% bed occupancy);
- Amend the formula driven spreadsheets and summary tables to run the bed demand projections for the selected scenarios. This includes the following data components: NWT and regional population cohorts for the selected reference years; initial demographic driven bed demand; existing bed inventory; TAC Wait List (as current as available, and which are allocated to applicants' home region); consideration of potential OOT repatriation; and, bed variance from initial projected demand at the NWT and regional level;
- Run the selected scenarios for the selected reference years (i.e., 2016, 2017, 2020, 2023, 2026, 2029, 2032 and 2034). This *does not represent the "final" bed demand*, as this occurs at a subsequent stage, which factors in other variables (e.g., LOS and resident mortality rates); and
- Develop aggregate summary tables and supporting figures for the selected scenarios at the NWT and regional level for each reference period. Complete the analysis of variance based on the operationalized flow of resident and those on the TAC Wait List.

Funding Models in Other Jurisdictions

The review of LTC program delivery in other Canadian jurisdictions revealed a variety of models for funding facilities. The selected findings include: publicly owned and operated facilities tended to be funded through normal government budgeting processes; operational costs of privately owned and operated facilities were funded through either a negotiation-based model or a formula-funding model. There was considerable variation in how jurisdictions funded facility construction costs. For publicly owned facilities the government's normal capital planning and approval process was applied. For privately owned facilities, jurisdictions either made provision to address construction costs in the operational funding provided by allowing for mortgage financing to be included in a negotiated operating budget, or included a construction cost per diem in the funding formula; and, private facility owners/operators were generally expected to provide some level of construction financing from their own resources, recognizing that the source of this private financing would be recovered from operating profits or efficiencies elsewhere in their facility operations.

Recommendations and Decision Points

The review submitted the following recommendations and decision points for the DHSS consideration.

Recommendation 1: Approve and Implement the NWT Long-Term Care Model

The DHSS approve and implement the amended NWT LTC Model for capacity assessment, planning and management.

Recommendation 2: Review and Validate the Demand and Supply Side Modeling Assumptions Prior to Capital Investment Decisions

The DHSS validate the demand and supply side modeling assumptions in the NWT LTC Model prior to making capital investment decisions.

Recommendation 3: Operationalizing the NWT Long-Term Care Model

The DHSS operationalize the NWT LTC Model via the established methodology to confirm and validate the final (i.e., actual) bed demand based on the initial demographic driven demand projections and subsequent demand adjustments.

Recommendation 4: Implement the InterRAI System of Standardized Needs Assessment Instruments

The DHSS replace the existing Continuing Care Assessment Package (CCAP) and implement the International Residential Assessment Instrument (InterRAI) system for home care and LTC. During the transition period the DHSS should continue to monitor and collect the LOS data by key variables (i.e., residents population overall; LOC; gender; ethnicity; and, admission category).

Recommendation 5: Approve the Optimal Bed Ratios for Demand Projections for FY 2016-17 to 2026-27, and FY 2027-28 to 2033-34)

Based on the preponderance of evidence (i.e., demographic, health status, utilization patterns and rates, LTC facility administrative data [e.g., residents' socio-demographic characteristics and mortality rates], best practices from other jurisdictions, and the bed inventory for FY 2016-17), the following optimal bed ratios are recommended in two phases. The first phase is FY 2016-17 to 2026-27, and the second for FY 2027-28 to 2033-34.

Phase 1: Bed Ratio of 115 per 1,000 Population 70+ Years for FY 2016-17 to 2026-27: The DHSS approve and implement a bed ratio of 115 per 1,000 population 70+ years, using a 95% bed occupancy scenario in FY 2016-17 to 2026-27 for completing demand projections and for operationalizing the NWT LTC Model.

Phase 2: Bed Ratio of 105 per 1,000 Population 70+ Years for FY 2027-28 to 2033-34: The DHSS, in collaboration with the NWT Bureau of Statistics, should review and validate the population projections post the 2026 census. Assuming that: (i) the current projections and modeling assumptions presented in this review remain reasonably valid (i.e., specifically, the peaking of the growth in the 70+ years cohort and migration patterns), and (ii) re-assessing the demographic and non-demographic drivers impact on demand and supply in order to validate the projected trends, the bed ratio should be reduced accordingly to 105 per 1,000 population aged 70+ years, using a 95% bed occupancy scenario.

In the event that there is substantive change in demand and supply trends, (e.g., should the DHSS invest additional resources in other areas of Continuing Care Services) which may reduce demand for facility based care, the 105 beds ratio could potentially be further reduced to reflect and accommodate the new demand and/or supply trend trajectories. This decision will need to be made in light of the data available leading up to and post FY 2026-27.

Recommendation 6: Funding for Program Operations – Short Term (6 to 12 Months)

In the short term (6 to 12 months) the DHSS should pursue Funding Option 2 – providing operating funding through contribution agreements negotiated with private owners/operators using a line-by-line approach.

Recommendation 7: Funding for Program Operations – Longer Term (12 to 24 Months)

In the longer term (12 to 24 months) the DHSS should pursue Funding Option 3 – providing operating funding through a published cost based formula (with some adjustment for regional cost differentials). This formula could be a distribution formula or a needs-based formula. Additionally, consideration should be given in the future (i.e., beyond 24 months) to having elements of the formula responsive to client acuity levels recognizing that this would require the introduction of an assessment tool such as the proposed interRAI and the associated clinical capacity in the LTC system to undertake regular client assessments, as well as an information system (i.e., information technology and information management systems) capable of capturing, processing and integrating the assessment data into program management decisions.

The DHSS should also undertake research and evaluate the potential to convert existing GNWT owned and operated LTC facilities to a more private sector business model recognizing that privatization (which can include a P3 type partnership model) initiatives come with considerable political and labour relations challenges, as well as the need to ensure facility residents and their families of service continuity, safety and quality.

Recommendation 8: Funding for Facility Construction – Short Term (3 to 12 Months)

In the near short term (3 to 6 months), the DHSS should undertake research into LTC facility design standards used by Alberta, Ontario and Nova Scotia, and develop GNWT LTC design standards reflecting best practices from these jurisdictions. Avoid independently developing LTC design standards that may exceed the design standards used in other jurisdictions (e.g., avoid the tendency to design to the highest

standard but ensure resident safety and service quality). Require all private LTC facility owners/operators to adhere to the NWT design standards for all new construction.

In the short term (6 to 12 months), the DHSS should pursue Option 2 – providing for new bed construction through an allowance for mortgage costs in the annual operations contribution agreement with private owners/operators. For existing private operators this has the potential to enable commencement of new bed construction in some locations in less time than a regular project following the standard government capital planning and approval process. Where new private operators need to be attracted, a design/build/finance/operate RFP process should be followed combining both construction and operational components (Alberta does this with its ASLI program and further discussions should be held with Alberta on how they structure the proposal call and subsequent negotiations). Additionally, the recent RFP process used in Newfoundland and Labrador for LTC facility construction provides another reference point.

Recommendation 9: Funding for Facility Construction – Long Term (12 to 24 Months)

In the longer term (12 to 24 months), pursue Option 4 – providing for new bed construction through a construction per diem as an element of the standard cost formula used for operational funding (i.e., Ontario). This would still involve an RFP for the new beds but on a design/build/finance/operate basis.

Recommendation 10: LTC Facility Revenue and Subsidies

In the short term (6 to 12 months), the DHSS should undertake research and develop financial information from all NWT LTC facilities on all standard (fully burdened) elements of LTC accommodation costs (e.g., building operation and maintenance, janitorial, laundry and house-keeping, and, food and meal preparation and serving). Develop a system to keep this cost data current. Calculate an average NWT-wide per diem accommodation fee required to fully recover the cost of accommodation and meals. Consider whether this indicated per diem accommodation fee should be adjusted (i.e., downward) for any system inefficiencies, low economies of scale or high regional operating costs. In other words, the accommodation fee should be reasonable in comparison to the higher tier of provincial accommodation fees (Nova Scotia). Develop an implementation plan to institute the new accommodation fee.

In concert with the preceding recommendation, undertake research and develop an income tested accommodation fee subsidy program to address the impact of the higher accommodation fee on lower income residents of NWT LTC facilities. Research and assess subsidy designs in other jurisdictions to reduce subsidy program design time.

Recommendation 11: LTC Facility Licensing, Standards and Inspections

In the short term (6 to 12 months), the DHSS should undertake research and develop legislative and regulatory options for introducing LTC facility licensing, standards setting and inspection by the DHSS with the goal of introducing required legislation within 24 months. Research the legislative and regulatory regimes in other jurisdictions and adopt (with appropriate amendments) approaches and provisions to the extent practical to reduce drafting time.

ACRONYMS

ADL	Activities of Daily Living
BDHSSA	Beaufort Delta Health and Social Services Authority
CCAP	Continuing Care Assessment Package
CHMIS	Community Health Management Information System
CHN	Community Health Nurse
CIHI	Canadian Institute for Health Information
DHSS	Department of Health and Social Services
DHSSA	Dehcho Health and Social Services Authority
ECU	Extended Care Unit
FAS/FAE	Fetal Alcohol Syndrome/Fetal Alcohol Effects
FASD	Fetal Alcohol Spectrum Disorder
FNIHB	First Nations and Inuit Health Branch
FSHSSA	Fort Smith Health and Social Services Authority
FTE	Full-Time Equivalent
FY	Fiscal Year
GNWT	Government of Northwest Territories
HCC	Home and Community Care
HRHSSA	Hay River Health and Social Services Authority
HSSA	Health and Social Service Authority
HSW	Home Support Worker
ISDM	Integrated Service Delivery Model
LOC	Level of Care
LOS	Length of Stay
LPN	Licensed Practical Nurse
LTC	Long-Term Care
NA	Nurses' Aide
NGO	Non-Government Organization
NHS	National Household Survey
NIC	Nurse in Charge
NWT	Northwest Territories
NWTDC	NWT Disabilities Council
NWTHC	NWT Housing Corporation
OT	Occupational Therapy
OOT	Out of Territory
PSW	Personal Support Worker
PT	Physiotherapy
RAI-HC	InterRAI Home Care
RCA	Resident Care Aide
RCC	Referral Care Coordinator

RN	Registered Nurse
SHSSA	Sahtu Health and Social Services Authority
SL	Supported Living
STHA	Stanton Territorial Health Authority
TAC	Territorial Admissions Committee
TCSA	Tlicho Community Services Agency
YHSSA	Yellowknife Health and Social Services Authority

1.0 INTRODUCTION

1.1 Purpose of the Report

The *Northwest Territories (NWT) Long-Term Care Program Review* (the review) was prepared to document and summarize the findings from the research and analysis completed by the review team.

The review presents the evidence (i.e., statistical, clinical and administrative), analysis and conclusions from the robust methodology, including literature review, internal interviews and inter-jurisdictional scan. The detailed nature of the statistical and analytical work is oriented to an audience involved in and/or responsible for Long-Term Care (LTC) in the NWT.

1.2 Structure of the Report

The report is structured in the following interdependent sections.

Section 1.0: Introduction
This section presents the purpose and structure of the report as well as the content of each section. The review approach and methodology, including limitations and data gaps are summarized.
Section 2.0: Background and Context
This section provides the overall context for the NWT LTC Program (LTC Program), including: history, legislative and policy framework, NWT Continuing Care Standards, and the Territorial Admissions Committee (TAC) assessment process and tools.
Section 3.0: Long-Term Care Demand and Supply Drivers
This section provides an overview of the components of LTC demand and supply factors and drivers (demographic and non-demographic). The section contains a detailed perspective on NWT health status, disability and mortality, and the potential implications for LTC demand. Additionally, this section summarizes selected key social and economic characteristics that further inform the demand for and supply of LTC.
Section 4.0: NWT and Regional Demographics: Historical Context
This section provides an essential historical context with regard to demographic patterns and trends, including net out-migration of seniors at the territorial and regional level. The section also reviews in detail the population structure over the 1996 to 2014 period in order to provide the context for future population projections and demand modeling.
Section 5.0: NWT and Regional Demographic Projections: 2014 to 2034
This section presents an overview of the NWT Bureau of Statistics Population Projection Model methodology and assumptions, as well as comparison of overall results from the Statistics Canada Population Projection Model. The results of the comprehensive projections and analysis of the NWT Bureau of Statistics Population Projection for the 2014 to 2034 period are provided. The projections are at the territorial and regional level, and encompass total population as well as gender and ethnicity. Additionally, detailed projections are provided for both the 60+ years

and the 70+ years cohorts to inform broader programming in continuing care.

Section 6.0: Long-Term Care Program and Facility Administrative Data

This section presents and analyzes selected data from the LTC Program and facilities to inform and support bed demand and supply projections. The information includes: Bed inventory; Territorial Admission Committee Wait List; Financial overview for the 2010 to 2015 period; and Facility residents' profiles (i.e., demographic characteristics, utilization rates, level of care [LOC], and trends in length of stay [LOS] and mortality).

Section 7.0: NWT Long-Term Care Model: Capacity Assessment, Planning and Management

This section provides and discusses in detail the framework and methodology for the NWT LTC Model (the Model) for capacity assessment, planning and management. An overview of bed demand models, principles and limitations is provided as context for the discussion of the Model and how it is operationalized to reflect actual demand and supply in facilities on an annual basis. The initial demographic driven bed demand projections are presented with an analysis of what LTC beds are required, when and where.

A summary of LTC policy issues and considerations (at a national and international level) are presented as the basis for analysis of bed demand and supply options. The discussion is further informed by consideration of funding models in other jurisdictions, and outcomes from a DHSS funding model options workshop held in December 2015. The section outlines a potential conceptual LTC delivery and funding model for the NWT to be examined in more detail at a future point. Finally, selected key findings from the inter-jurisdiction interviews and scan are summarized.

Section 8.0: Recommendations and Decision Points

This section sets out the main recommendations and decision points for consideration by the Department of Health and Social Services in terms of demand for and supply of LTC.

Report Appendices

The following appendices support the review report.

Appendix A:	Long-Term Care Program Evolution and Chronology
Appendix B:	NWT and Regional Demographics: Historical Context
Appendix C:	NWT and Regional Demographic Projections: 2014 to 2034
Appendix D:	Population Projections and Analysis of Change, Yellowknife Total Population, 2014 to 2034
Appendix E:	Long-Term Care Bed Requirement Projections, Based on Bed Ratios of 115 and 120 per 1,000 Population 70+ Years, NWT, Various Years
Appendix F:	References

1.3 NWT Long-Term Care Program Review Purpose and Objectives

The Department of Health and Social Services (DHSS) set a strategic direction for continuing care in the NWT with the release in May 2014 of *Our Elders: Our Communities* – a strategic framework and seven key priorities (pillars) for Elders and seniors. Subsequently, the release and implementation of the *NWT Continuing Care Standards* (2015) further informed program delivery and resource allocation decisions. Both documents build on, and extend, the foundational work of the 2004 (and the 2008 update), of the Department's 2005 *Integrated Service Delivery Model* (ISDM) which renewed the commitment and foundation for continuing care across the NWT in order to - *to meet the needs of all citizens, communities and regions in a fair and sustainable manner.*

The Government of the Northwest Territories (GNWT) is facing increasingly significant fiscal challenges and the resulting constraints to the business and capital planning cycles, which have necessitated further consideration of the DHSS investment in and optimal allocation of LTC resources. The proposed AVENS Pavilion Project for LTC beds has undergone a range of changes since the original proposal in 2013, including scope, budget, programing and funding requests to the DHSS. In light of these factors, potential DHSS support for, or possible role, in the proposed project needs to be considered in a broader strategic and policy context.

1.3.1 Review Purpose

The purpose of the review is to inform options and decisions, based on the best available data and information, by the DHSS regarding optimal allocation of LTC resources (including respite beds given the complementary function in continuing care) and future program investments across all regions of the NWT. The overall purpose was achieved through completion of specific objectives outlined in the following section.

1.3.2 Review Objectives

The review had the following specific objectives. There were certain adjustments made during the course of the review in response to limitations of the data available, schedule and budget constraints.

(1) ***LTC Operating Framework Assessment:*** Conduct a focused assessment of the LTC operating framework with respect to (i) documenting and archiving the substantive work completed since FY 2004-05 with respect to continuing care (and the more recent AVENS Pavilion Project proposal) with a view to clearly establishing the chronology and progress made by the DHSS and key stakeholders; (ii) existing legislation (*Hospital Insurance and Health and Social Services Administration Act*) and applicable regulatory provisions; (iii) Continuing Care Assessment Package (CCAP) eligibility assessment tool used by the Territorial Assessment Committee (TAC); and, (iv) impact of the *NWT Continuing Care Standards* (2015) on resource allocation and investment decisions;

(2) ***LTC Demand Side Analysis*****:** Review demand side factors and complete updated projections at a more granular and specific level across all regions of the NWT, including: (i) establishing the demographic baseline (i.e. 2011 National Health Survey (NHS), and subsequent updates, population projection models – Statistics Canada vs. NWT Bureau of Statistics, and geographic scale (i.e., NWT and regions); (ii) population cohorts and characteristics (60+ years vs. 70+ years vs. 75+ years; gender; ethnicity); and, (iii) documenting bed projection methodology, assumptions and limitations. The demand side analysis will inform decisions by determining and validating: *What* LTC beds are needed; *Where* (territorial and regional level location); and, *When* (in order to optimize resources and more effectively align with the GNWT business and capital planning cycles. This will include a clear conclusion regarding a projected year when no LTC beds will be available - without further investment of resources).

(3) ***LTC Supply Side Analysis*****:** Review and confirm the supply side factors, including: (i) existing and 'in-progress' LTC facilities and capacity (i.e., including key assumptions); (ii) findings from Objective 1 regarding the impact of *NWT Continuing Care Standards* (2015); and, (iii) Ministerial, and other applicable GNWT strategic and policy direction;

(4) ***Targeted Jurisdictional Review:*** Review of LTC models, standards and practices in jurisdictions, including addressing: (i) funding mechanisms and models; (ii) rate charge structure and methodology; and, (iii) models (including motives and incentives) for delivering LTC through public, not-for-profit, and private operators, as well as in partnership arrangements;

(5) ***LTC Program Options and Amendments:*** In the context of the findings from the preceding objectives, the focus is on identifying and assessing options for potential amendments to the NWT LTC Program (LTC Program). This encompasses the following: (i) at a conceptual level, to identify new LTC delivery/funding models that will facilitate the expansion of LTC beds in as cost-effective a manner as practical without impacting quality of service; and, (ii) at a conceptual level, to develop options to reform existing LTC delivery/funding approaches to introduce efficiencies and lower per bed operating and construction costs to the GNWT without impacting quality of service.

The approach to this task includes drawing from the results of the jurisdictional surveys to develop options. The options will be discussed and refined through an internal workshop with the DHSS staff. The workshop will identify the criteria for evaluating and selecting among the

options and applied these criteria to the refined options. The result will be a conceptual outline of potential options for new approaches to LTC Program delivery/funding in the NWT, along with proposed evaluation criteria and recommendations for next steps.

(6) ***AVENS Pavilion Project and DHSS Options:*** Based on the results of the preceding objectives, the DHSS will review the proposed AVENS Pavilion Project with regard to: (i) chronology and impact of subsequent changes in terms of scope, budget, schedule, programing (i.e., amendment of the charge rate structure for clients; means tested user pay formula) and, funding requests (capital and O&M) – including a commercial lease for 30 beds, and a multi-year block funding arrangement; (ii) assess the work completed by AVENS regarding financing options and the potential implications for the DHSS; and, (iii) based on the findings, develop options and recommendations regarding the position and potential role of the DHSS, and timing.

1.4 NWT Long-Term Care Program Review Approach and Methodology

1.4.1 Project Organization and Management

The review organization and management was structured as follows:

Project Steering Committee

The Steering Committee was comprised of the following DHSS representatives:

- (Chair), Director, Territorial Health Services
- Assistant Deputy Minister, Operations
- Assistant Deputy Minister, Corporate Services
- Director, Finance
- Director, Infrastructure Planning
- Director, Policy, Legislation and Communication
- Director, Corporate Planning and Reporting

Project Manager

Project management and leadership were provided by the Manager, Continuing Care and Health System Planning.

Project Consultants

The following external consultants provided project support:

- Andy Swiderski, Gaea Consulting Ltd.
- Lew Voytilla Consulting, 5750 NWT Ltd.

1.4.2 Review Methodology

The review was completed based on the direction and framework set out in the project Terms of Reference as approved on May 21, 2015. The terms of reference included a detailed Work Breakdown Structure (WBS) for each objective that contained specific methodologies and deliverables.

Some elements of the initial approach and methodology were refined over the course of the review, largely in response to the availability of data, project schedule, supplementary findings from document review and interviews, and subsequent amendments to Objective 5 as directed by the Steering Committee.

Provided below is a summary of the methodology components and sequence used to complete the work. Additionally, each section of the report provides further details regarding the approach, methodologies and outcomes for the project objectives.

Methodology Components and Sequence

- LTC program legislative, policy and standards review;
- Document and literature review (i.e., internal GNWT reports, external publications, peer reviewed journals, databases and web based methods);
- Research and analysis of LTC demand and supply drivers and models;
- In collaboration with the NWT Bureau of Statistics, prepare the demographic projections and complete the analysis to provide the baseline for bed demand projections;
- Analysis of the LTC program administrative data and NWT Health Care Card Registration data;
- Conduct a focused inter-jurisdictional scan and interviews, and prepare a summary of findings;
- Operationalizing the NWT LTC Model and bed demand projections;
- Identification of policy issues and considerations; and
- Develop LTC program interim options, including longer-term program conceptual delivery and funding models (that may be examined in further detail at a later date).

Post Report Completion Methodology by Steering Committee

- Review the AVENS Pavilion Project proposal, assess potential impacts, and identify the DHSS options.

1.4.3 Review Limitations

The review has a number of inherent and consequential limitations in terms of availability of certain statistical, clinical, and administrative data given the schedule and budget constraints. The limitations include:

- The NWT Population Projections for 2014 to 2034 are provided at the territorial and regional level only. Individual community data is not provided given the focus on age cohorts, gender and ethnicity. The small absolute numbers (in the selected variables) in many communities make the projections at that level challenging from a reliability point of view. Additionally, the DHSS existing policy is the provision of LTC at a regional level, supported by home and community care services in smaller communities.

- The LTC Program administrative data excludes (most) information for FY 2015-16. The focus was on drawing data, patterns and trends analysis for the five-year period spanning FY 2010-11 to 2014-15. Where available and feasible, data from Statistics Canada and the Canadian Institute for Health Information (CIHI) was used to inform the review by supplementing program administrative data.

- The demographic driven initial bed demand projections are based on clear and specific methodological assumptions (demand and supply side), as well as existing program standards. Future policy and program changes, if any, may impact bed demand and supply.

- The inter-jurisdictional scan and interviews include only those jurisdictions that were able to participate, as such, interpretation or extrapolation of findings needs to be informed accordingly.

- The recommendations are principally focused on advancing and informing decisions by the DHSS regarding what LTC beds are needed, where and when. As such, broader policy and programming aspects were secondary considerations.

2.0 BACKGROUND AND CONTEXT

2.1 Overview of the NWT Long-Term Care Program

Long-term care is defined as a range of facility based services that address the health, social and personal care needs of individuals who have reduced or no capacity for self-care. However, these residents do not require intensive medical care as those in Extended Care. LTC residents have complex medical support and/or psycho-social support requirements and 24/7 nursing care and supervision.

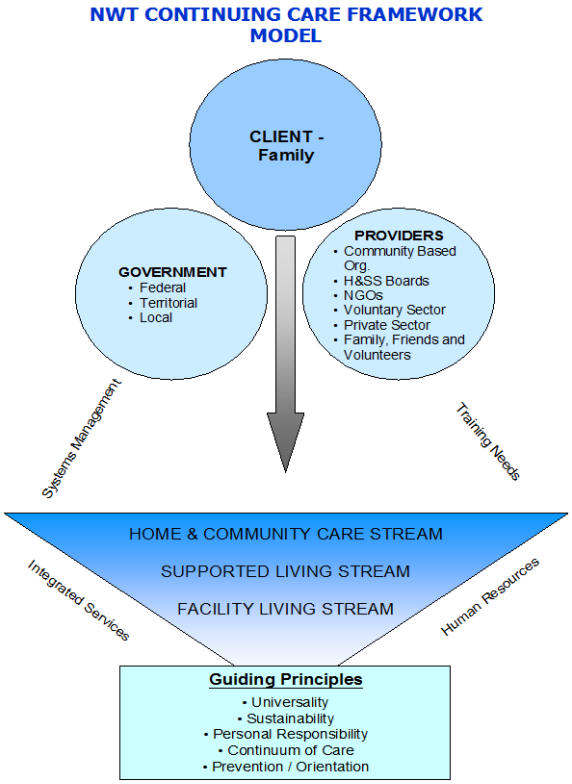
The LTC Program is an integral component of the *NWT Continuing Care Framework and Action Plan* (2008). The following section provides a brief overview of the framework and the fit of the LTC Program based on the framework.

2.1.1 Continuing Care Framework and Model

Vision: The vision is: Individuals' needs are being met in the least intrusive manner, promoting the greatest opportunity for lasting wellness and functional independence.

Model: The Model is illustrated in Figure 2.1. This Model illustrates the components and the interrelated influences that will result in the preferred future for the complete continuing care continuum of service.

Figure 2.1: NWT Continuing Care Framework



2.1.2 Facility Living Stream: Fit of the NWT LTC Program

The Facility Living Stream of the framework provides the opportunity for the client to live full-time in a facility that provides a level of service greater than can be provided by either the Home and Community Care or Supported Living Programs. In the NWT within LTC there are two types of 'facility living' options, Long-Term Care and Extended Care. They differ in the level of service that they are mandated to provide.

Most residents in LTC facilities are permanent (see Sections 6.5 to 6.7 for residents' profiles and facility related data). However, short-term admissions to a facility for respite may be offered. Extended care services are available to those clients with the highest and most complex care needs.

2.2 Client Group

LTC facilities provide services for individuals whose needs cannot be safely met in a home setting. These individuals may be compromised with chronic and/or complex care needs, including multiple and severe disabilities or health issues resulting in reduced function (i.e. ADL).

Persons placed in LTC facilities in the NWT may be of any age. While recognizing the general provisions of the *Long-term Care Application for Admissions Policy* (2009), there is an exemption provision under Section 3.2 of the Policy, wherein an applicant may be placed in a facility specializing in a certain type of care, for example a facility for persons with cognitive impairments. They are currently placed as follows:

- *Severely/multiply disabled:* This client group have severe mental and physical disabilities, some requiring total assistance with ADL.

- *Cognitively impaired (early to advanced stages):* This client group may range from mild to severe cognitive impairment. Clients require minimum to total care in management of supervision and assistance with ADL. Facilities in the NWT have a mix of clients, ranging from mild to severe cognitive impaired.

- *Frail elderly:* These clients require assistance with ADL, and unless medically compromised, do not require nursing care.

- *Respite Care:* Historically there has been at least one bed available in each facility for respite care. The client stays for a short period of time to give the family or caregivers respite.

- *Palliative Care:* Services for the dying can be provided at various levels in the client's home or, if care becomes too heavy or requires medical intervention, the client is transferred to an ECU or Palliative Unit in a hospital. If the client is a resident of a LTC facility, palliative services are provided for as long as possible.

Needs Assessment and Levels of Care

The NWT Levels of Care (LOC) were revised and approved for implementation July 2012. Figure 2.2 illustrates the continuum of care. Once an assessment is completed, an individual's care needs are categorized according to LOC. A detailed perspective of the LOC is presented in Figure 2.3. The LOC describe functional characteristics categorizing individuals into care levels to support decision-making about appropriate support services and care across the continuum (e.g., individuals requiring Level 3 or 4 care are eligible for admission into LTC). Within continuing care LOC, Levels 2 and 3 supported living require 24/7 supervision and support with ADL but they are not medically complex and there is no on-site nursing care provided.

Figure 2.2: NWT Continuum of Care

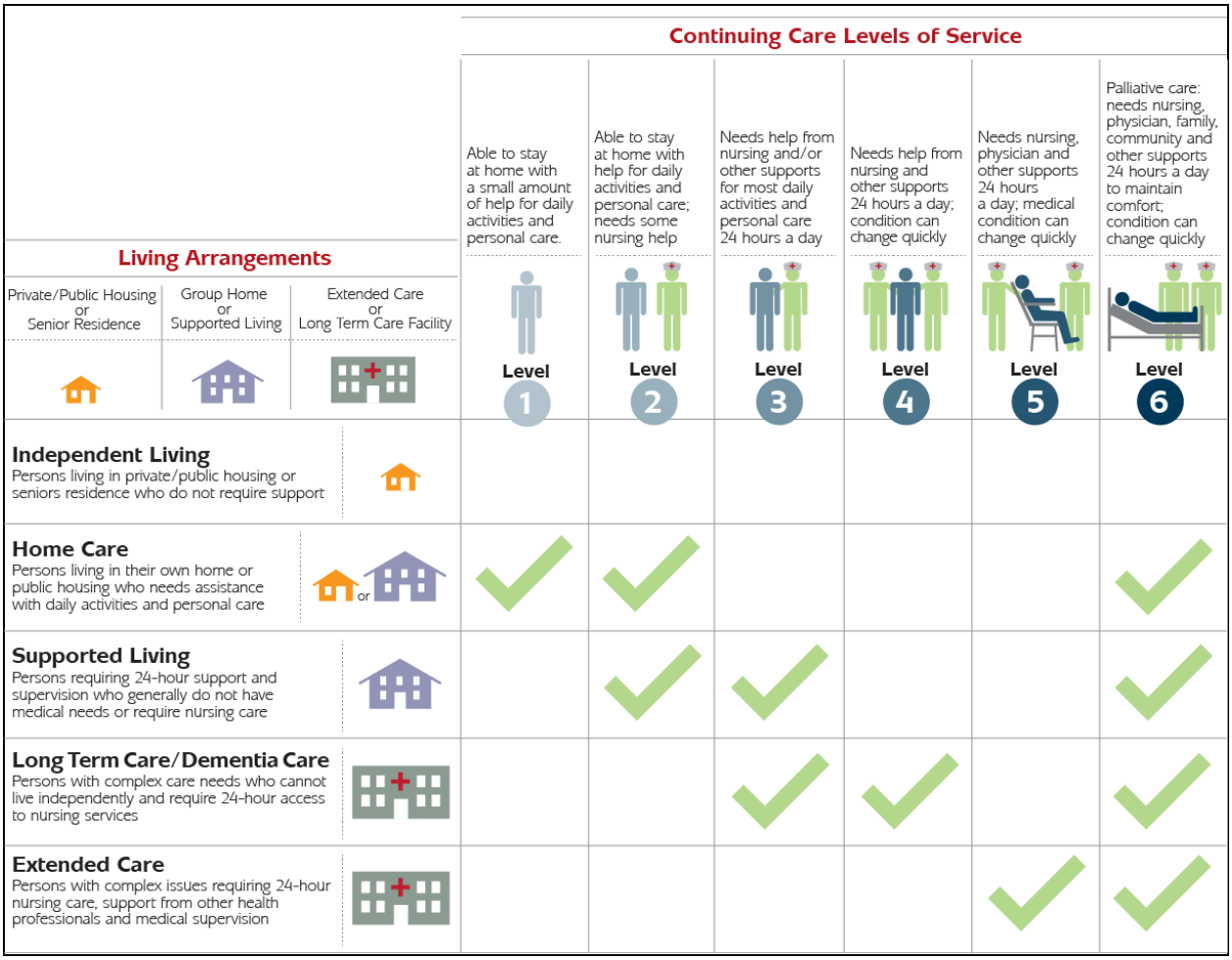


Figure 2.3: NWT Continuing Care Levels of Service

NWT CONTINUING CARE LEVELS OF SERVICES	
Levels of Service	**Description**
LEVEL 1 **HOME CARE/Independent Living with Support**	• A person who is independently mobile, with or without mechanical aids, requires minimal assistance with ADL / IADL. • A person who can remain in a home/community setting with minimal supports and is considered to be at a level of risk that can reasonably be considered acceptable.
LEVEL 2 **HOME CARE/Independent Living with Support**	• A person who is independently mobile, with or without mechanical aids and requires assistance with ADL / IADL. • A person requiring Home Care, Nursing, or other professional supports, interventions, and/or supervision. • The person can be independent with supports or in a group living setting. 24/7 formal and/or informal support staff available, as appropriate
LEVEL 3 **LONG TERM CARE/ DEMENTIA CARE/SUPPORTED LIVING**	• A person who may or may not be independently mobile, with or without mechanical aids, and requires assistance with ADL/IADL. • A person who has complex medical support and/or psychosocial support requirements and /or supervision. • A person who is at risk of harm to self/others resulting from severe and multiple medical conditions and/or cognitive impairment and/or mental health conditions. 24/7 On-Site Nursing (RN/LPN) (in LTC and Dementia Care only)
LEVEL 4 **LONG TERM CARE/ DEMENTIA CARE/ SUPPORTED LIVING**	• A person who requires complex professional and informal supports and/or supervision. • A person who needs 1 or 2 persons to assist with mobility and ADL / IADL. A person who is at risk of harm to self/others resulting from complex and multiple medical conditions, cognitive impairment and/or mental health conditions. • A person who may experience be sudden, unanticipated changes in condition. 24 hr. On-Site Nursing (RN/LPN) (in LTC and Dementia Care only)
LEVEL 5 **EXTENDED CARE**	• A person with medically complex diagnoses, physical frailty, and/or cognitive deficits. • A person who requires 24/7professional nursing and/or other professional support services/monitoring, medical supervision, and requires facility-based residential care/support on a permanent basis. • A person who is considered at high risk of injury to self/others. 24/7 On-Site Registered Nursing
LEVEL 6 **PALLIATIVE CARE**	• A person who is approaching end-of-life and who requires continuous medical support, and formal / informal psychosocial support. • Palliative care is provided in the following locations as appropriate: A. Home Care in person's home B. Long Term Care facility C. Hospital Acute Care D. Hospital Palliative Care Unit 24/7 Registered Nurse On-Call in Community Setting

2.3 Long-Term Care Program Evolution and Chronology

Continuing care is a core service of the DHSS that is delivered through three program streams. The DHSS has completed a number of key initiatives related to the Continuing Care Services that build on, and extend, the foundational work of the DHSS 2005 (and the 2008 update) ISDM which renewed the commitment and foundation for continuing care across the NWT – *to meet the needs of all citizens, communities and regions in a fair and sustainable manner.*

The key initiatives and reports since 2002 are highlighted in Figure 2.4. A detailed history and chronology is contained in Appendix A.

The purpose of the chronology is to provide a broader and historical context for the review through documenting the key events, investments and decisions that were taken to develop and manage the LTC Program over the last 40 years. This includes consideration of the demand and supply side aspects - demographics, fiscal resources, the DHSS strategic direction and policies, actual utilization patterns and trends, societal values and expectations regarding LTC in the NWT. Additionally, the chronology reflects the previous needs assessment and analysis by the DHSS and the Health and Social Services Authorities (HSSA), as well as a number of independent reviews.

Figure 2.4: Evolution and Chronology of the NWT LTC Program

FISCAL YEAR	INITIATIVE
2002-2003	• In 2002, the DHSS contracted KPMG Consulting to review current long-term care services and provide projections on future LTC bed needs within the NWT.
2004-2006	• In 2004, the DHSS and the HSSAs undertook the development of an *Integrated Service Delivery Model – Reforming Facility & Medical Services in The NWT: A New Direction* (June 2005). The report provided a detailed view of the NWT's health delivery system and offered alternative models of care that can efficiently and effectively meet current and future needs. The report set out a new health centre classification system and established institutional care benchmarks and planning guidelines – including those for long-term care.
2008-2009	• Ministerial directive to improve the coordination and use of LTC beds including revising the model in place for admission to LTC facilities. The DHSS established a Working Group with diverse representation. • Development and implementation of the NWT *Continuing Care Framework*.
2009-2010	• Establishment of a Working Group with representation of all of the HSSAs to do the work of developing a streamline application process to support a single point of entry for admission. • In March 2009, the Deputy Minister approved the *Long-Term Care Application for Admission Policy* and terms of reference to establish a Territorial Admissions Committee (TAC). TAC replaced six regional long-term care admissions committees and streamlined the application process. Prior to TAC there was no territorial Wait List for LTC. • In October 2009, the Territorial Admissions Committee began operations.

FISCAL YEAR	INITIATIVE
2009-2010	• In July 2009, GNWT Public Works and Services (PW&S) engaged PSAV Architects to undertake a Planning Study for LTC facilities in NWT. HSS Finance Capital Planning staff and Health Systems Planning participated in the Working Group. The purpose of the study was to: (i) complete a detailed needs analysis of existing LTC facilities and program needs; (ii) develop operational, functional plans and schematic design that can be reused for future infrastructure and operational development; and, (iii) identify development priorities for LTC.
2010-2011	• March 2010, Aven Cottages, Territorial Dementia Facility (TDF) with 24 full-time beds and 4 respite beds began operations. Aven Cottages is the only specialized dementia facility in the NWT designed specifically to care for residents with moderate to severe dementia Alzheimer's disease and other age related dementias.
2011-2012	• The Auditor General completed an audit of NWT Health Programs and Services (2011). The audit included a review of certain aspects of LTC. Among the key findings were: (i) the DHSS does not adequately support and monitor diabetes programming, home care and LTC programs, and medical travel; (ii) the DHSS has insufficient information to determine whether health outcomes of patients with diabetes are improving; and, (iii) Current standards for home care and LTC programs are too broad to serve as a basis for monitoring and to ensure equitable access to the programs. • The recommendation included: (i) implement a standardized process for assessing the service and care needs of all home care and LTC clients; (ii) complete the revision of program standards for home care and long-term care programs; and, (iii) develop and implement a plan to monitor these programs, including specifying the data to be collected by the HSSAs and the DHSS. • The DHSS agreed with the findings and recommendations. Standardization of the delivery of Continuing Care Services across the NWT was identified as a key action contained in *A Foundation for Change, the Department of Health and Social Services' System Action Plan for 2009–2012*. This included a commitment to update program and staffing standards.
2011-2012	• AVENS – A Community for Seniors began offering in-facility Respite Service with 4 beds at Aven Cottages Territorial Dementia Facility (TDF). In 2014-15, the DHSS approved an AVENS request to operate 3 respite beds at Aven Cottages TDF; and 1 respite bed. • AVENS Elders Circle (adult day program) began operation (2011). The AVENS Elders Circle offers daytime respite and support for seniors in a secure, homelike environment. The program offers an alternate form of care for seniors who wish to continue living independently in the community while providing support to family caregivers.
2012-2013	• The DHSS and the HSSAs identified a need to be ready to respond to the growing demand for Continuing Care Services. The DHSS contracted MNP_{LLP} (MNP) to review the delivery of Continuing Care Services across the NWT. The overall purpose of the review was to provide evidence to support the development of an updated continuing care strategy that will ensure services meet the needs of Elders and individuals with disabilities who require support to achieve their desired quality of life. The review provided an assessment of the current state of services in the NWT, including strengths and gaps in HCC, LTC, palliative care and community capacity and included updating the projected demand for LTC beds in the NWT based on the population projection for those 70+ years and projecting the need for services such as in facility respite, palliative care, geriatric assessment and consult service, and restorative care.

FISCAL YEAR	INITIATIVE
2013-2014	• Forced Growth Submission LTC Staffing: the DHSS undertook a review to analyze the staffing in LTC facilities against best practice and inter-jurisdictional research to determine the optimal staffing complement required to implement a proposed staffing model based on hours of direct patient care per day. The DHSS put forward a forced growth funding submission for the 2013-14 Business Plan requesting approval of the proposed LTC staffing model, and additional resources for three LTC facilities operating under the recommended standard of 3.6 hours. • Initial AVENS Pavilion Project proposal to the DHSS (June 2013): This included a proposal to expand the number of LTC beds by 60 at an estimated cost of $26.5 million in Yellowknife. This included a request for multi-year funding which would require changes to the existing *Hospital Insurance Regulations* regarding co-payment levels. • Establishment and work of the AVENS Pavilion Steering Committee to undertake the necessary analysis (including review of the demographic bed demand projections) to inform discussion regarding the proposal.
2014-2015	• Development and implementation of the NWT Long-Term Care Strategic Framework - *Our Elders: Our Communities* (2014). The framework set out the approach to providing LTC, which is based on a commitment to *aging-in-place* by *ensuring Elders and seniors can remain in their homes and home community*. • Release of the *NWT Continuing Care Standards* (2015) establish operational benchmarks for program and service providers: the DHSS; the HSSAs; agencies; non-government organizations (NGO); and individual service providers. They provide the means to evaluate programs, service delivery, and organizational systems against best practice and accountability established by the Minister of Health and Social Services. • AVENS contract Hollander Analytics Services to prepare *a Facility Bed Utilization Review Report* (February 2015)**.** The review was intended to assess the need for LTC beds using a comparative bed to population model. The findings included an observation regarding the considerable variability across jurisdictions in projecting the need for LTC beds.
2015-2016	• Internal DHSS initiative to conduct a *Review of the Long-Term Care Program* (the review) is in response to emerging demographic and health drivers, as well as the need to re-assess the LTC bed demand projections in light of the AVENS Pavilion Project proposal. • Initiation of a DHSS process to develop an NWT Continuing Care Service Delivery Action Plan. The purpose is to develop a detailed five year action plan for all regions in the NWT in the three key areas of Continuing Care: Home and community care; LTC; and, Palliative care.

2.4 Legislation, Regulatory and Policy Framework

2.4.1 Legislation and Regulations

The provision of LTC services is under the *Health and Social Services Administration Act* (2012) and *Hospital Insurance Regulations* (2013). The provisions in the Regulations are listed below to provide context for the review. Section 10 and 11 of the *Regulations* deals with 'charges' for LTC facilities. The provisions are as follows.

Section 10: No charge other than the authorized charge shall be made by a hospital to an insured person for accommodation provided in other than the standard or public ward, furnished because of medical necessity as determined by an attending member of the medical or professional staff, or because accommodation at the standard or public ward level is not available.

Section 11: (1) In this section, "fiscal year" means the period beginning on April 1 in one year and ending on March 31 in the following year; and, "inflation rate" means the 12-month average change in the All-Items Consumer Price Index for Canada published by Statistics Canada, calculated for the calendar year preceding the year in which an increase takes effect.

(2) An insured person receiving LTC shall pay a monthly charge in respect of accommodation and meals to the facility providing the care in the amount established in accordance with this section.

(3) Subject to subsection (4), the Minister may, for each fiscal year, establish (a) the monthly charge to be paid by an insured person under 19 years of age who receives LTC; and (b) the monthly charge to be paid by an insured person who is 19 years of age or older who receives LTC.

(4) For each fiscal year, the charges established by the Minister under subsection (3) must not exceed the charges established for the preceding fiscal year by more than a percentage amount that is equal to the inflation rate plus two percent.

(5) An insured person receiving LTC during only part of a month shall pay a daily charge in respect of accommodation and meals to the facility providing the care in the amount determined by multiplying the monthly charge that would be payable under subsection (2) if the person had received a month of care by 12 and dividing the product by 365.

(6) Each charge calculated under this section must be rounded to the nearest dollar, and where the charge calculated is equidistant from the higher and lower dollar, the charge must be rounded to the higher dollar.

(7) For the purposes of calculating the monthly charge that may be established under subsection (3) for the fiscal year beginning April 1, 2013, the charges established for the preceding fiscal year referred to in subsection (4) are as follows:
    (a) for an insured person who is under 19 years of age: $314;
    (b) for an insured person who is 19 years of age or older: $746.

The monthly charges for FY 2015-16 are $327 for those under 19 years of age and $772 for those over 19 years of age.

Section 12 regulates contributions and subsidies. The provisions are as follows.

Section 12: (1) Contributions and subsidies made by the Minister in respect of LTC are applicable only to facilities situated in the NWT. (2) Notwithstanding subsection (1), if a facility in the NWT is unable to accommodate an insured person who needs LTC, the Minister may make arrangements with a facility in a province or territory to accommodate the insured person and may subsidize the cost of care in a manner equivalent to the subsidies available for care in the Territories.

Section 14 regulates insurance contracts. The provisions are as follows.

Section 14: No person shall make or renew, or make payment under, a contract under which an insured person is to be provided with, or to be reimbursed or indemnified for the cost of, in-patient and out-patient insured services.

Section 14 is interpreted as prohibiting private insurance coverage for government insured services. Given that LTC is not defined as an '*insured service*', the provision has no impact.

2.4.2 Policy

The LTC Program is guided by a policy framework that includes:

LTC Application for Admission Policy (2009)

The DHSS is committed to streamlining the admissions process for clients requiring placement in LTC facilities funded by the GNWT. The *LTC Application for Admission Policy* (2009) provides the necessary framework for the LTC Program. Specifically, it covers: general eligibility; client assessment and placement; application procedure; wait list; appeals; and discharge. The Minister established the TAC to administer this Policy.

To be eligible for admission to a LTC facility under the mandate of the DHSS, an individual must complete an application and meet eligibility criterion administered by the TAC for LTC. In terms of the demand and supply of LTC beds, the provisions in Section 6 address the LTC Wait List. An applicant is added to the Wait List only when their assessment indicates the need for LTC (see Section 6.2). The process is reflected in Figure 2.5. Additional details of the application and admission process are provided in Figure 2.6.

Figure 2.5: NWT Single Point of Entry Standards and Process

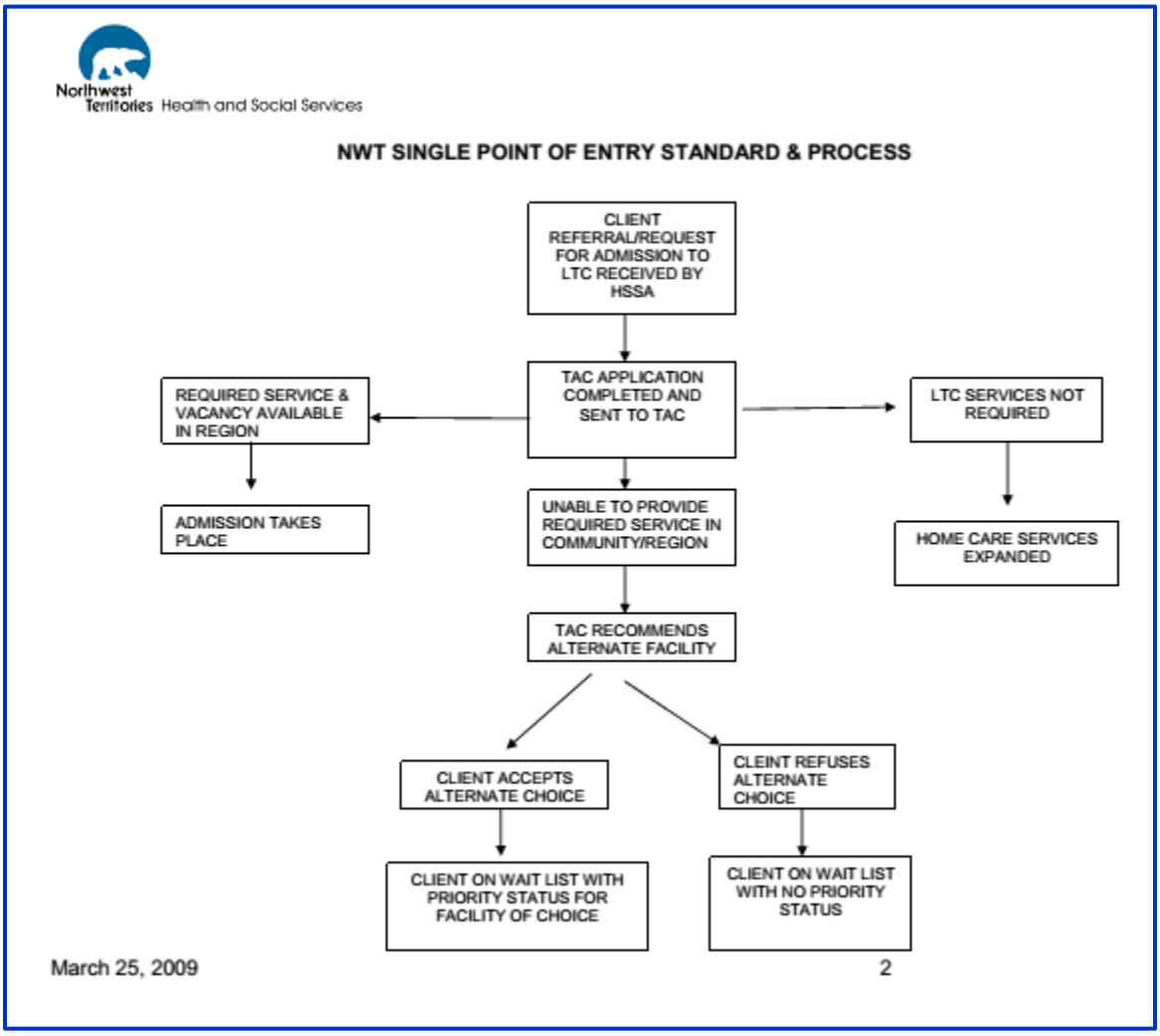


Figure 2.6: Step by Step Overview of the LTC Application for Admission Process

1. Applications begin at the HSSA level. Usually, with Home Care, inpatient services, or the Community Health Centre located in an applicant's community.
2. Applicants should receive face to face support from the HSSA primary provider, who takes on the role of 'Case Manager'. The Case Manager helps the client/family complete the *Application for Admission to Long-term Care*, which includes medical and functional assessments (Continuing Care Assessment and Placement) approved by the TAC.
3. The HSSA Case Manager must ensure the application is accurate and complete before signing the cover sheet, and faxing the completed application to 1-867-920-3088, Attn: Chair of the Territorial Admissions Committee. The TAC recently developed a process and began training Case Managers to send applications with encryption through GNWT secure transfer.
4. The Case Manager will continue to be the point of contact with the TAC for the applicant/family throughout the application process.
5. All LTC applications will be screened for completeness. Gaps in information could mean a delay in the application being reviewed by the TAC at their monthly review meeting.
6. The Case Manager may represent the client during review of his/her application upon request to the Chair.
7. The TAC reviews all applications to NWT LTC facilities with standardized criteria and screening tool designed to aid consistency and equality.
8. Upon review of a client's application the TAC may request a pre-admission Geriatric Assessment to support an appropriate placement decision.
9. The TAC will make every effort to place clients in a LTC facility as close to home community/region as possible. The TAC will consider all available community resources and LTC facilities in making its decision.
10. The Chair of the TAC will notify the Case Manager of the Committee's decision within three (3) business days of the review meeting (whether the application is approved or denied). A letter will also be sent to the applicant at the same time confirming the Committee's decision.
11. If the applicant does not meet the criteria for admission, the applicant will be informed of the process to appeal the decision.
12. If there is a significant change in an applicant's condition or circumstances, the Case Manager may resubmit the application by highlighting the changes since the previous application.

In the context of optimal resource utilization and management of LTC beds, there is an effort made to offer placement as close to an applicant's home community/region as possible. At times this may not be possible and so an offer is made to place the applicant in the next best location. If the applicant refuses the offer, the applicant is put back on the Wait List but no additional priority beyond the actual practice of determining priority according to their care needs is given. Section 6.3 of the Policy states:

"Once a bed becomes available for the applicant on the wait list, the applicant has 5 business days to secure the room by payment and up to 14 business days to move into the assigned room. *Failure to be admitted by the deadline can result in the next person on the wait list being given opportunity for said room and the first applicant will be resubmitted to the wait list; however, no additional priority will be given to the applicant*. In the event that this occurs and the first applicant's condition changes, the applicant can submit an updated application, outlining change in status, to the Territorial Admissions Committee for review".

Notwithstanding the existing wording in the Policy, the determination of actual priority is based on the applicant's care needs.

2.5 NWT Continuing Care Standards

The NWT Continuing Care Standards approved in February 2015, establish operational benchmarks for program and service providers; the DHSS; the HSSAs; agencies; non-government organizations (NGO); and individual service providers. They provide the means to evaluate programs, service delivery, and organizational systems against best practice and accountability established by the Minister of Health and Social Services. The NWT Continuing Care Standards in no way supersede any existing or upcoming statutes and attendant regulations. The *NWT Continuing Care Standards* (2015) replace the following GNWT documents: *Home Care Standards* (2000), *Long-Term Care Standards* (2001), *Service Standards for People in Supportive Living Homes* (2004), and *Service Guidelines for People in Supportive Living Homes* (2004). Compliance with these standards is mandatory.

The NWT Continuing Care Standards, and the territorial policies that arise from them, have been adopted and used to develop procedures. Quality services arise from continuous monitoring of operational performance, identification of needs and priorities, and effective management of resources. In the event that standards are not being met, corrective action must be taken to bring operations back in compliance. The *NWT Continuing Care Standards* (2015) provide the DHSS with a system-wide approach for strategic planning, funding, monitoring, evaluating, and reporting performance of the Continuing Care Program. The following is a summary of the NWT Continuing Care Standards, by referenced section, with respect to LTC.

Section 2.3 LTC Program Purpose

LTC provides 24 hour personal care and access to nursing support to clients who have complex medical conditions and/or cognitive care needs.

- *Standards* 2.3.1 LTC includes the following essential services:
    - client assessment;
    - case management;
    - 24 hour access to services of Registered Nurses;
    - support for ADL and Instrumental Activities of Daily Living (IADL);
    - respite care;
    - medication supervision and/or administration;
    - preventive health services;
    - palliative/end-of-life care;
    - informal caregiver support;
    - access to medical supplies and equipment loan;
    - social and recreation services;
    - dietary services;
    - housekeeping services; and
    - laundry/linen services.

- *Standards* 2.3.2 LTC clients have access to therapeutic and medical services.

- *Standards* 2.3.3 Clients/families are informed of:
    - their rights;
    - changes to programs or service delivery;
    - the concerns resolution process; and
    - costs they are responsible for and payment options. 2.3.4 LTC follows the Supportive Pathways Philosophy of Care. 2.3.5 LTC programs will acquire and maintain recognized accreditation.

Section 4.1 Access Purpose

Access is fair and equitable.

- *Standards* 4.1.1 There are policies that describe eligibility for and access to Continuing Care Services. 4.1.2 The Territorial Admissions Committee (TAC) provides a territory-wide process for application and admission to NWT LTC and supported living facilities. 4.1.3 There are policies that describe the management of requests for home care services that consider the service needs of the client, available program resources, urgency of need, and risks to the client in the current setting. 4.1.4 Clients and their families have timely information about access to Continuing Care Services that are provided: • in their preferred method – in person, by telephone, on a public website or in print copy; and • in an appropriate language in accordance with the DHSS Communications policy.

Section 4.2 Wait List Management Purpose

There is fair and equitable access for clients who are waiting for Continuing Care Services.

- *Standards* 4.2.1 There are policies for wait list management for Continuing Care Services which include eligibility, priority for service, offer of service and client response to offer. 4.2.2 The TAC manages the wait list for LTC and supported living facilities. 4.2.3 There are policies for wait list data collection.

Section 4.3 Assessment Purpose

A comprehensive needs assessment will guide the delivery of appropriate services.

- *Standards 4.3.1* Following a request for continuing care, each client has a comprehensive assessment, overseen by a regulated care provider of their physical, functional, and psycho-social needs using a standardized assessment tool that includes the following: • includes diagnostic tests/results/ interpretation; • incorporates preventive health; • assesses client risks; • is conducted by a health professional trained in health assessment; • incorporates input from the client, family and other team members; and • includes a discussion about personal directives with the client and/or guardian as per Standard 4.8.
- Client needs assessments are repeated at least yearly and when there is a significant change in the client's condition.

2.5.1 NWT Continuing Care Standards: Impact on Demand and Supply

The review process included analysis of the NWT Continuing Care Standards with regard to potential impacts on facility bed demand and supply. The key findings are summarized below:

Impact of the NWT Continuing Care Standards on bed demand: The overall conclusion is that the NWT Continuing Care Standards will not increase the demand for LTC beds. They will ensure an efficient and effective use of finite resources by allocating home and community care, as well as LTC clients based on a valid (evidence based) and comprehensive assessment of client's functional/cognitive ability and medical care needs.

Impact of the NWT Continuing Care Standards on bed supply: The LTC bed supply is also unlikely to be effected because the pressures for LTC placement are primarily due to external forces that are outside the LTC Program's ability to control. Recognizing that there is outstanding additional work that needs to be done to develop and/or finalize the policies, guidelines and tools to support implementation, the NWT Continuing Care Standards will increase consistency in services across the continuum and improve equity of access for all NWT residents. The following is a summary of the operational level assessment of the anticipated impacts.

(A) LTC Staffing:

- In 2011-12, the DHSS completed an extensive review of staffing in LTC across Canada and proposed a staffing standard of 3.6 hours of care per resident/per day and a staffing ratio and mix of 20% LPN/RN to 80% Registered Care Aide which was approved for funding by the GNWT Financial Management Board (FMB);
- In 2013-14, the DHSS finalized a review of staffing in all LTC facilities funded by the GNWT and found there were inequities with 3 of 8 LTC facilities funded below the proposed LTC standard;
- In 2013-14, the DHSS put forward an FMB submission. FMB approved one-time funding in the amount of $1,129,000 and an on-going target adjustment in the amount of $1,110,000 to fund two full time Registered Nurse positions, seven full time RCA positions, and two part-time RCA positions for three LTC facilities in the NWT to meet the proposed minimum standard of direct hours of patient care in the three LTC facilities; and
- The proposal included a commitment to adjust staffing in each LTC facility to meet the proposed staffing ratio and mix. This was to be accomplished through attrition because of the implications on the collective agreement.

NWT Continuing Care Standards

- As per *Section 5.2 Human Resources Management*; sub-section 5.2.4 of the Standards: "A policy exists recommending appropriate staffing numbers and mix, according to best practice." To that end, in 2015-16, the DHSS will write a policy formally adopting the LTC staffing standard and begin the research to support development of a staffing standard for Extended Care; Home and Community Care; and Supported Living Needs in order to draft a policy for these service areas;
- In 2015-16, the DHSS will repeat the inter-jurisdictional survey of 2013 as part of the review to see if the NWT's staffing standard is aligned with other jurisdictions. Preliminary data from a staffing review done by NFLD shows most jurisdictions are using 3.6 hours of direct care/per patient per day, but there are differences in staffing complement; and
- As part of the work to implement the NWT Continuing Care Standards, the DHSS will revisit the staffing ratio and mix and set goals with the HSSAs for meeting the targets.

(B) Standard Job Descriptions and Defining Competencies

- This includes setting goals with the HSSA Continuing Care Directors responsible for LTC for their Resident Care Aides and Home Support Workers to achieve personal support worker certification; and
- There is also a need to ensure Licensed Practical Nurses who work in LTC facilities are competent to their full scope of practice in order to effectively fill the Registered Nurse component of the staffing ratio and mix.

(C) 'One Policy Approach' for Implementation of the *NWT Continuing Care Standards*

- In addition to the work to garner resources to adjust the LTC staffing model the DHSS has been working with the Continuing Care Committee to review the policies that are required to support implementation of the NWT Continuing Care Standards; and
- The HSSAs met in October 2014 to review the final standards and the implementation plan. They identified the policies that would need to be developed and provided feedback on the implementation plan as to the prioritization of when and how the work should be done. They are in agreement with harmonized policies across the system for the NWT Continuing Care Standards and want to be able to participate in the development of the policies where they have capacity and expertise.

Gaps and Challenges in Implementing the Continuing Care Standards

(D) Managing Responsive Behaviours/Alcohol Use of Residents of LTC

- LTC residents with a history of alcohol abuse or addiction becoming intoxicated in the community and in the home on a regular basis, and displaying aggressive behaviors with staff and other residents;
- LTC facilities in the NWT should have clear policies on residents' alcohol possession and consumption;
- These policies should be clearly explained to residents upon admission, preferably on an admission agreement form signed by the resident or guardian;
- A decision should be made whether a territory-wide policy is required, or whether individual facilities should set their own policies regarding alcohol use;
- Residents in LTC have complex nursing care needs. There are many residents in LTC with mild cognitive impairment that do not require a specialized secure setting;
- Residents with moderate or severe dementia and already in LTC are placed on the TAC Wait List for transfer to the Territorial Dementia Facility. However, because those awaiting placement in the community are a higher priority for placement it may take months for the transfer to occur;
- LTC facilities manage by increasing staffing to closely monitor residents with responsive behaviours. This increased monitoring and support is done to ensure safety and manage risks to the resident, other residents and the staff. But there is a cost to doing so that is not currently being funded; and
- All staff working in LTC facilities in the NWT should have training in dealing with aggressive/responsive behaviors. Non-crisis violent intervention training that is standard for acute care facilities is not appropriate for residents with little or no cognition or ability to understand reasons for adapting their behaviour.

(E) Palliative Care

- Palliative care services are part of Continuing Care Services, a core service within the ISDM (2005). Capacity to provide palliative care services is reliant on Primary and Acute Care services and often limited in smaller communities;
- The DHSS has developed a draft NWT Palliative Approach to Care Framework with an aim to improve quality of life for individuals living with life-limiting illness and their families. This is achieved by reducing suffering through early identification, assessment and treatment of pain, and addressing their physical, cultural, social, psychological, social, and spiritual needs.

As people age, they need more support with life limiting conditions and illness. Most people with life-limiting conditions and illness do not require specialized palliative care services. They require basic care that improves their quality of life and relieves their suffering; and

- When applying a palliative approach to care, professional care-givers regularly assess individuals with life limiting conditions and illness. Individuals who can benefit from a palliative approach to care have fluctuating and complex needs which change over time. At times, multiple providers (e.g., nurses and home support workers and family care givers) may work together to meet their needs. Providers work with the individual and family to identify services and supports required as they approach end-of-life so they are able to live well until they die comfortably in the setting of their choosing.

The following are key considerations in advancing palliative care in the NWT:

Education and awareness

- Training for professional caregivers and informal caregivers (family and friends); and
- Public education so that the public knows what palliative care is, what service level they should expect, and how they can make their wishes known (e.g., using personal directives).

Expert support and consultation

- Accessible support and consultation for health care staff who are providing palliative care in communities; and
- Planning for ability to deliver other core services to communities when client(s) needs are greater than the system's capacity.

Quality and consistency of care

- Development of territorial standards, including policies, care pathways, and protocols;
- The draft NWT Palliative Approach to Care Framework aligns with priority Action 4 of *Our Elders: Our Communities* priority action to *"Support the delivery of in-home palliative care services in communities outside of Yellowknife";*
- Palliative care is one of the pillars of the NWT Cancer Strategy;
- The palliative care approach framework articulates current best practice evidence for delivering palliative care services, and the action plan identifies investments and activities that will enhance palliative care services;
- The design of LTC facilities in the NWT provides for 2 beds to be used for respite/palliative clients;
- As of August 2015, there are 13 respite/palliative care beds located within the eight LTC facilities and Stanton ECU. Presently, LTC facilities are accustomed to providing palliative care services to residents in their facilities but have not promoted the services to clients within communities;
- The DHSS has developed a caregivers' guide to provide family caregivers with information to help them in their role of caring for their loved ones; and
- The NWT Continuing Care Committee continues to meet regularly to strategically plan, and through smaller working groups, will develop policies and procedures to support standards implementation.

NWT Continuing Care Standards (2015) include a standard for Palliative Care Services (Standard 3.1). Palliative and end-of-life care services will address the holistic needs of clients and families throughout the dying process and following death. The applicable standards are:

3.1.1 Policies are in place that describe:

- how and where clients access palliative care services;
- the scope and limits of palliative care services;
- the roles of staff who deliver palliative care services;
- costs that are the responsibility of clients or families; and evidence-based practice in palliative and end-of-life care.

3.1.2 Staff have competencies in palliative and end-of-life care and receive on-going training to ensure current best practices.

3.1.3 Staff provide clients and families with information about the dying process, such as the signs and symptoms of imminent death, coping strategies, and how to provide support and comfort during the final hours of life.

3.1.4 The staff support clients and families prior to and after death, and facilitate access to bereavement and support services.

2.6 Territorial Admissions Committee

The GNWT TAC mandate (as set out in the terms of reference dated February 9, 2011) is to ensure that no matter where seniors live in the NWT, quality and accessible continuing care will be available. The TAC was charged with streamlining the admissions process by:

- Using a uniform assessment instrument, common definitions and common criteria for all LTC programs;
- Ensuring efficient and effective administration of applications for admission to LTC facilities;
- Overseeing one coordinated, prioritized placement list;
- Placing applicants as close to home as possible; and
- Maintaining an inventory of available beds.

The TAC provides a territory-wide process for application and admission to NWT facilities (as discussed in the preceding sections). Establishing a single coordinated placement list will streamline the admissions process for seniors and provide a more accurate picture of the need for LTC beds, home and community care, and other health care services for seniors and others.

2.6.1 Continuing Care Assessment Tools

The review process included analysis of the existing *Continuing Care Assessment Package* (CCAP) and the proposed assessment tool (InterRAI) with regard to potential impacts on facility bed demand and supply. The key findings are summarized below.

The Impact of the Assessment Tools on Demand and Supply: Based on the Continuing Care Program's experience with the existing assessment tool (CCAP) and process, and the methodology of the proposed adoption of InterRAI, it is reasonable to conclude there will be no material impact on LTC bed demand and supply. There will however be a number of expected efficiencies with respect to the assessment and access process. Findings from the analysis of the operational impacts of the proposed new assessment tool are presented below.

Demand for Continuing Care Services is Increasingly Complex: All residents are eligible to receive Continuing Care Services that include both Home and Community Care (HCC) and LTC. As in many Canadian jurisdictions, the majority of Continuing Care Services are used by Elders (who are defined as 60+ years in the NWT). This population tends to experience loss in function due to the prevalence of chronic diseases, injury, and illness. A person's *functional health* is measured using a scoring system based on self-reported performance on eight key health attributes: vision, hearing, speech, mobility, dexterity, feelings, cognition and pain.

Relationship between Age and Incidence of Disability:

- The increasing proportion of Canadians and NWT residents reaching older ages raises issues about demand for health services and delivery of care;
- There are increases in the acuity of clients receiving HCC due to discharges from acute care facilities in the NWT, as well as other jurisdictions such as Alberta;
- Due to increased prevalence of chronic health conditions and degenerative conditions with aging (e.g., diabetes, dementia) LTC clients present with more complex care needs. It is essential that LTC staff receive training to provide more complex care in order to support clients that transition into this setting; and
- The complex care needs of higher acuity clients is expected to increase in the future and this will create a need for more expert resources, which are not available in each of the regions. Needs were identified for expert support from geriatrics, geriatric psychiatry, dietician services and rehabilitation services. One suggested approach to address this issue was to develop a pool of expert resources to provide support and services to different communities through travel, phone or Telehealth consultation.

Allocation of Continuing Care Services: Presently, and for many years, Continuing Care Services has relied upon CCAP as the standard assessment tool. CCAP is approximately 70 pages in length and includes:

- a general assessment of clients based on 27 domains;
- the medical/surgical history, social history, and medication record of clients; and
- a placement plan that includes service planning and placement options for clients.

Since it was established in October 2009, TAC has been the *Single Entry Access* point to determine a client's eligibility and priority for LTC. The TAC members review each client's CCAP and use a priority screening tool to determine the level of care (LOC) and priority of clients based on the assessed rating for 13 risk factors. The CCAP functions as one of the mechanisms influencing demand (via access to LTC beds for example), and the Continuing Care Program's supply response.

A comprehensive, evidence-based health assessment is the backbone of the territory's *Single Entry Access* system, and there are issues that have been noted with using the CCAP tool:

- Primary care providers, as well as the findings of the Auditor General of Canada 2011 audit regarding "non-standardized assessments and care management for home care and LTC clients' results in inequitable access to services and inconsistent quality in the services delivered, have identified concerns about the CCAP";
- The evidence base for the CCAP, as well its reliability and validity, is not fully known. The tool is not standardized and is reliant on the skills of the individual professional conducting the health assessment, so the quality of the assessment is variable. This does not allow TAC members to effectively determine and prioritize the care needs of clients applying for LTC; and
- While the CCAP is intended to support decisions related to client access to services across the continuum of care (home and community care, supported living, and LTC), the CCAP is often only used for application to LTC because of the time and effort it takes to complete the assessment.

InterRAI: The proposed adoption and implementation of InterRAI is in the context of the following considerations.

- The International Residential Assessment Instrument (InterRAI) tool is an internationally researched and recognized evidence-based system and is widely used throughout Canada, including the Yukon Territory. The system can provide case managers, home care professionals, and LTC facilities with:

    - Access to assessment information;
    - Outcome measures to improve quality care;
    - Continuing Care quality indicators;
    - Reliable data for monitoring quality of care and evaluation of residents; and
    - Identification, prevention and management of emerging and potential resident risks.

- The Canadian Institute for Health Information (CIHI) uses the data from the RAI tools to report LTC and home care usage and trends across the country.

- The InterRAI Home Care (InterRAI-HC) tool was suggested as an improved assessment tool for NWT LTC placements that could streamline the TAC review process and allow for better data collection about the needs of LTC applicants. A standardized and automated instrument for assessment and care planning will improve patient safety and quality of care, reduce costs, shorten cycle time and expand service offerings. An improved assessment tool is needed.

- Introducing InterRAI-HC is not anticipated to increase the demand for LTC services, but will better enable HCC, TAC and LTC providers to identify and meet client care needs. It is also anticipated that it will assist TAC in validating the care needs and prioritizing applicants for LTC placement.

- The DHSS completed a business case for InterRAI in FY 2009-10 that confirmed it is the recommended assessment tool for Continuing Care Services in home and community care and LTC, however has not yet been able to secure funding to implement InterRAI.

3.0 LONG-TERM CARE DEMAND AND SUPPLY DRIVERS

3.1 Overview

The demand for and supply of LTC services and facilities is characterized by a complex and interrelated set of factors and drivers. This section of the report examines, in a focused and pragmatic way, the demand side and supply side factors and drivers.

3.2 Demand Side Factors and Drivers

The demand side consist of two categories – demographic and non-demographic drivers. Figure 3.1 illustrates the two categories and the specific drivers within each. Certain drivers (i.e., life expectancy, geographic, household [family] structure) have elements relevant to both demographic and non-demographic drivers. The two categories are discussed below.

3.2.1 Demographic Drivers

There are nine (9) demographic drivers that contribute, to varying degrees, to the demand for LTC. Within these nine drivers, there are two primary demographic drivers – age and life expectancy. These drivers are examined further in Sections 3, 4 and 5 as part of the overall demographic framework, and the population and bed demand projections.

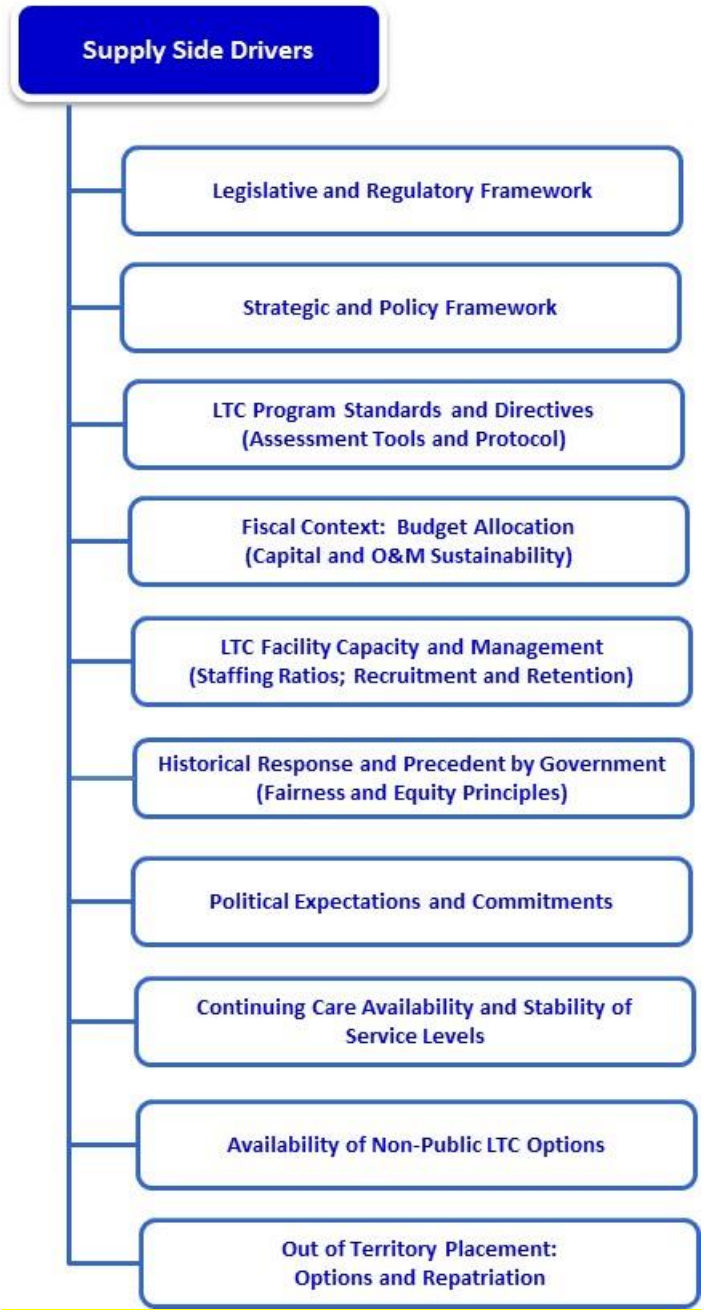
3.2.2 Non-Demographic Drivers

The non-demographic demand drivers consist of eleven (11) components as illustrated in Figure 3.1. While each of the drivers does contribute, to varying degrees, to demand, it is recognized by program managers that there is one overarching principal driver – that being *health status* (both physical and mental health). This primary driver, along with key secondary drivers, are discussed in detail in Section 3.4 and Section 3.5 from the perspective of their potential implications for demand.

One of the dynamics influencing or potentially impacting the formal demand is the existing supply and/or 'perceived lack of availability' and/or 'location' of LTC beds. Based on a previous study (PSAV Architects, 2010), the potential of 'constrained demand' should be given some consideration based on the probability that the TAC Wait List that may not fully account for the possibility that some individuals may not have applied for admission based on their understanding that there are no beds available or that beds may be available but only in a geographic location outside their community. While there is not actual evidence to support or refute this argument, the perception of 'availability' is a consideration in the context of health policy and Roemer's Law of Demand – 'an increase in the number of hospital beds per capita increases hospital utilization rates'. Additionally, 'supply may induce its own demand where a third party practically guarantees reimbursement of usage' (circa 1961). The initial demographic driven bed demand projections and the NWT LTC Model (see discussion in Section 7.2) recognizes this factor.

Figure 3.1: LTC: Demand Side Drivers

Figure 3.2: LTC: Supply Side Drivers



3.3 Supply Side Factors and Drivers

The supply side drivers consist of ten (10) components as illustrated in Figure 3.2. Relative to the demand side, the supply side components are more complex and dynamic given the experience of balancing policy objectives, legislative and regulatory framework, and public and political expectations with actual available resources.

The principal supply side driver informing the review is the actual LTC bed inventory in the NWT, as discussed in Section 6.1. As well, the role of selected socio-economic factors (i.e., household structure and tenure; income; labour force activity; and marital status) is discussed in Section 3.5. The linkages between supply side and demand side factors are also evident in the broader trends in LTC as presented below.

3.3.1 Context and Trends

Based on the literature review and the findings of the inter-jurisdictional scan conducted for the review, the following observations (discussed more fully in Section 7.6) are made regarding trends in LTC, in both supply and demand. Over the last two decades there are a number of significant trends with respect to changes in the demand, supply, organization and financing of LTC, internationally and in Canada (Norton, 2000).

Trends in Long-Term Care

- *Although some 70 to 90% of care is 'informal' across OECD countries, there is a trend away for elderly living with their children in intergenerational families;*
- *There are relatively fewer women to supply informal care, and many more of these women have entered (or re-entered) the labour force;*
- *Across OECD countries, some 5% to 7% of the population aged 65+ years are institutionalized (primarily in LTC facilities);*
- *LTC expenditures depend on frailty. The period of disability and chronic morbidity of the elderly has (in general) become more 'compressed', resulting in more healthy years of life. Evidence from longitudinal data on disability-free life expectancy indicates that the decline in mortality rates has (in general) led to an increase in light and moderate disabilities, but not necessarily severe disabilities;*
- *At a strategic level across North America there has been and continues to be a shift towards creating 'a more balanced long-term care system' by reducing the use of institutional services, including residential based care;*
- *There are three basic strategic cost and/or demand control options potentially available. Public care programs can: (i) restrict eligibility; (ii) reduce the 'subsidy' level through increased co-payment charges, and, (iii) restrict the actual supply (i.e., inventory) of long-term care beds;*
- *A shift away from providing LTC in hospitals, in large part due to the higher cost and alternatives such as nursing homes, as well as assisted living options with home care support for those who have less complex health care needs;*
- *The availability of robust publicly funded and managed LTC facilities may in fact 'crowd out' and/or distort demand for private LTC operators and LTC insurance;*

Trends in Long-Term Care (cont'd)

- *Actual utilization rates (population and age adjusted) for residential care facilities have been generally declining, although the reasons for this are not fully understood – but which include the shift to assisted/supported living options and expansion of home care services;*
- *LTC has become an important area of health economics. Its importance lies not only in its share of Gross National Product, but rather in how LTC affects economic decisions for individuals over a lifetime and across generations. The share of GDP was about 1.5% in Canada, 1% in the USA, and average for OECD countries is 1.3% (2006-2010 data). OECD and EU projections suggest the average long-term care expenditure could double or even triple by 2050. The figure from 2006 for OECD/European Union countries in was 1.3%, and may increase to between 2.2 to 2.9% by 2050. The figure for Canada in 2008 was 1.5% of GDP;*
- *The financial determinants of LTC demand are the price, the relative price of close substitutes, and the person's income and assets. The secondary financial determinant of LTC care is the availability of close substitutes. For example, informal care, adults day care, and board and care homes are potential substitutes for institutional care;*
- *Persons with higher housing wealth, a pension income, and rental income were less likely to enter a nursing home;*
- *Married persons are also more likely to have children, another important source informal care. Married persons have shorter LOS (conditional on admission), either because of their ability to return home, or because of higher risk of mortality because entering in worse health status;*
- *The need for LTC, in terms of timing, duration and intensity, is unpredictable at the individual level, and the cost can be very high. Consequently, some form of public or private 'risk pooling' is generally considered desirable; and*
- *There is generally a very low level of purchasing private LTC insurance across North America. The risk of moral hazard is a relevant part of the policy discussion but has received limited attention to date. Additionally, the impact of adverse election by insurance companies (which denied 10 to 20% of insurance applications based on 'high risk' and 'risk of moral hazard' have resulted in demands for very high insurance premiums.*

3.4 NWT Health Status, Disability and Mortality: Implications for Demand

3.4.1 Context and Overview

This section focuses on the clinical and statistical health evidence and rationale for the NWT LTC Model (the Model) bed demand projection assumptions. The health status variance between Aboriginal and non-Aboriginal population are discussed in terms of implications for demand.

The specific methodology for this section included consolidation of the findings from the following sources: prior independent studies on LTC demand in the NWT (as discussed in Section 2.3); recommendations from the ISDM regarding the rationale for a higher bed ratio and capacity needs in the NWT; and, personal communications with the DHSS Chief Clinical Advisor, and Chief Public Health Officer. This evidence and rationale are organized and presented in the following sub-sections:

- Demographic context from 2014;
- Demographic projections to 2034;
- Seniors' cohort population peak; and
- Net out-migration of seniors.

Demographic Context: 2014

The following summarizes in brief the demographic status of the NWT and regions total population, the 60+ years cohort, and the 70+ years cohort as was experienced in 2014. Section 4.4 provides a detailed discussion of the 2014 reference year. This is followed by a brief summary of projections from the 2014 base year to 2034.

Total Territorial Population

- Total NWT population was 43,623.
- There were 22,425 Aboriginal persons, representing 51.4% of the population. Non-Aboriginal persons totalled 21,198, representing 48.6% of the population.
- There were 22,208 males, representing 50.9% of the population. Females totalled 21,415, representing 49.1% of the population. The corresponding total population sex ratio was 103.7 (i.e., 103.7 males for every 100 females).

60+ Years Cohort

- There were 4,807 persons aged 60+ years, representing 11.0% of the total population.
- There were 2,391 Aboriginal persons, representing 49.7% of the population aged 60+ years. Non-Aboriginal persons totalled 2,416, representing 50.3% of this age cohort.
- There were 2,456 males, representing 51.1% of the population aged 60+ years. Females totalled 2,351, representing 48.9% of the population. The corresponding population sex ratio for this age cohort was 104.5.

70+ Years Cohort

- There were 1,687 persons aged 70+ years, representing 3.9% of the total population.
- There were 1,009 Aboriginal persons, representing 59.8% of the population aged 70+ years. Non-Aboriginal persons totalled 678, representing 40.2% of this age cohort.
- There were 781 males, representing 46.3% of the population aged 70+ years. Females totalled 906, representing 53.7% of the population. The corresponding population sex ratio for this age cohort was 86.2.

Demographic Projections: 2014 to 2034

Key Demographic Driver and Trend: While there is little growth projected in total territorial population over this period, the demographic structure continues to 'age' – with a range of associated economic and social policy implications. The overall pattern is evident at the regional level. Three regions (Beaufort Delta, Dehcho, and South Slave) will in fact experience small declines in their population. Section 5.4 provides a detailed discussion of the population projections.

Total Territorial Population

- By 2034, the total NWT population is projected to be 45,012. This represents an increase of 1,389 persons, or 3.2% from 2014. Statistically, this change in the total population is negligible over the twenty-year period. This will extend the demographic trend over the previous two decades where there was virtually no population growth resulting from net territorial out-migration (including a net out-migration of those 60+ years in 23 of 25 years) and declining fertility patterns. Moreover, from the LTC Program, the age structure of the territorial population will undergo continued 'aging' with significant growth in the seniors' cohorts, especially in the 70+ years cohort.
- There will be 22,877 Aboriginal persons, representing 50.8% of the territorial population. Non-Aboriginal persons are projected to total 22,135, representing 49.2% of the population. The Aboriginal population will continue to maintain a slight majority in 2034, although with a slight decrease in the share from 51.9% to 50.8%.
- There will be 22,424 males, representing 49.8% of the population. Females will account for a total of 22,588, representing 50.2% of the population. The corresponding total population sex ratio is expected to be 99.3 (i.e., 99.3 males for every 100 females).

60+ Years Cohort

- There will be 9,209 persons aged 60+ years, representing 20.5% of the total population. This represents an increase of 4,402 persons (91.6% increase), and a relative 'share' growth from 11.0% to 20.5% of the total population.
- There will be 4,617 Aboriginal persons, representing 50.1% of the population aged 60+ years. Non-Aboriginal persons will account for 4,592, representing 49.9% of this age cohort
- There will be 4,371 males, representing 47.5% of the population aged 60+ years. Females will account for a total of 4,838, representing 52.5% of the population. The corresponding population sex ratio for this age cohort is expected to be 90.4.

70+ Years Cohort

- There will be 5,207 persons aged 70+ years, representing 11.6% of the total population. This represents an increase of 3,520 persons (208.7% increase), and a relative 'share' growth from 3.9% to 11.6% of the total population.
- There will be 2,456 Aboriginal persons, representing 47.2% of the population aged 70+ years. Non-Aboriginal persons will account for 2,751, representing 52.8% of this age cohort.
- There will be 2,400 males, representing 46.1% of the population aged 70+ years. Females will account for a total of 2,807, representing 53.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 85.5, and reflects the longer life expectancy for females (i.e., based on life tables after age 65).

Seniors' Cohort Population Peak

- The total NWT 70+ years cohort will continue to increase in absolute numbers between 2014 and 2034. This cohort will increase from 3.9% of the total NWT population in 2014 to 11.6% in 2034.
- The observed change pattern is as follows: Relative growth (percent changes over reference periods) will continue through to 2020 where it will start a slow decline. This slow decline will continue through to 2032, when an accelerated decline will be experienced through to 2034. The year 2034 is the population projection model limit, and as such no other observations are made.

- The overall observed 'peak' patterns are consistent with the expected peak of the 'baby boomer' cohort (65+ years) at the national level in the 2030 to 2032 period.

Net Out-Migration of Seniors

The following are selected observations regarding seniors' cohort migration in the NWT (as discussed in detail in Section 4.2) to inform the focus of this section.

The historical net out-migration of seniors (majority of which are non-Aboriginal) in *23 of the last 25* years has resulted in a situation of net 'export' of those aged 60+ years. The impact of that is directly relevant to the demand for LTC. From a demand modeling perspective, the following assumptions were made regarding characteristics of those leaving: (i) likely to have a *relatively* better overall health status than Aboriginal seniors who remain in the NWT; (ii) likely to have more economic resources (income, pensions, and assets) and broader options for meeting their health care needs (including LTC); and, (iii) those who are migrating out, and who could potentially require LTC services, are decreasing the potential demand for LTC.

The impact of this migration factor is that those remaining seniors (both Aboriginal and Non-Aboriginal) represent a population who have and will potentially continue to create a relatively higher LTC demand than what could be expected from a more general population structure, (i.e., a normal distribution curve). Consequently, the bed ratio that is ultimately selected for the NWT (i.e., range of 115 to 120 beds per 1,000 population 70+ years) will need to accommodate this through a higher ratio than would otherwise be warranted at least for the near term pending the peak of the seniors' cohort.

3.4.2 Health Status Indicators and Evidence

There is a wide range of health data that confirms the reality of health status disparities between Aboriginal and non-Aboriginal population, including seniors. The conclusions are consistent and compelling regarding the disparities. Moreover, the evidence also indicates that those in the 40 to 59 year old groups (Aboriginal and non-Aboriginal) have demonstrated patterns of lower health status and as they age into the seniors' cohort may potentially increase demand for LTC, as well as other types of continuing care. The key clinical reports from the DHSS on health status and indicators include:

- *NWT Health Status Report* (2011a);
- *NWT Hospitalization Report* (2013a);
- *Report on Substance Use and Addiction: 2012* (2015e); and
- *Public Performance Measures Report* (2015a).

3.4.3 Hospitalization and Utilization Rates

The most relevant metrics to illustrate the Aboriginal health disparity are hospitalization rates (i.e., admission, treatment and discharge) utilization rates (i.e., in general terms, 'utilization' refers to the extent to which a given population or group use a particular service in a specified time period, expressed as the number of services (e.g., hospitalization) per 1,000 total population or population sub-group), and mortality (i.e., deaths per 1,000 population). The *NWT Hospitalization Report* (2013) profiles the reasons why NWT residents were hospitalized between FY 2008-09 and 2010-11. Summarized below are the key findings from that report.

Utilization by Ethnicity

Aboriginal persons had a utilization rate (annual average) of 91 per 1,000, compared to non-Aboriginal residents at 61 per 1,000. Supplementary evidence from the report presents data on higher utilization by Aboriginal persons by selected disorder:

- *Mental Health:* Aboriginal population made up **68%** of the patients and 62% of the cost of hospitalizations, with non-Aboriginal population representing 25% of patients and 34% of the costs.

- *Drug and Alcohol:* Aboriginal residents made up **77%** of the patients and 72% of the costs of alcohol and drug hospitalizations, with non-Aboriginals representing 17% of patients and 23% of the costs.

- *Schizophrenia and Psychotic Disorders:* Aboriginal residents made up **65%** of the patients and 67% of the costs of schizophrenia and psychotic disorder hospitalizations, with non-Aboriginals representing 26% of patients and 29% of the costs.

- *Dementia and Other Organic Brain Disorders:* Dementia and other organic brain disorders involve the impairment of memory, thinking, understanding and judgement, and are generally degenerative. Aboriginal residents made up **55%** of the patients and 47% of the costs of dementia and other organic disorder hospitalizations, with non-Aboriginal residents representing 42% of patients and 51% of the costs.

- *Overall Chronic Kidney Disease:* Between FY 2008-09 and 2010-11, on an annual average basis, 127 patients with a diagnosis of a chronic kidney disease were hospitalized 193 times, resulting in 2,131 bed days at an estimated cost of $5.2 million. Older adults and seniors make up most of these hospitalizations. The population age 45 and up made up 80% of the patients and 83% of the costs. Aboriginal residents made up **54%** of the patients and 50% of the costs of renal hospitalizations, with the non-Aboriginal population representing 43% of patients and 48% of the costs.

Utilization by Community Type

Residents of regional centres (Fort Smith, Hay River and Inuvik) were the most likely to be hospitalized, followed by residents of smaller communities and then Yellowknife. The utilization rates (annual average) per 1,000 population were:

Regional Centres	**98** per 1,000
Smaller Communities	**81** per 1,000
Yellowknife	**73** per 1,000

The proportion of Aboriginal population (2011) in the various community types place the utilization rates into a broader context:

Regional Centres:	Fort Smith (60%), Hay River (46%), and Inuvik (68%)
Smaller Communities:	Majority of residents were Aboriginal
Yellowknife:	24%
NWT Overall:	51%

Population Distribution and Health Status in Smaller Communities

In terms of population distribution, nearly half of all the NWT residents (46%) live in Yellowknife, 22% in regional centres (Inuvik, Hay River, and Fort Smith), and the remaining 32% in small communities. Typically, the smaller communities have a population less than 1,000 and the majority of residents are Aboriginal.

Supplementary findings from the *NWT Health Status Report* (2011) indicates that: "NWT residents living in smaller communities may be more susceptible to communicable diseases, mental illnesses and socio-economic disparities. These findings relate to differences in living and working conditions, personal health practices and educational attainment…Compared to residents living in Yellowknife, people who live in the smaller NWT communities tend to have lower levels of education, lower incomes and lower employment rates. They are also less likely to indicate that they enjoy high levels of social support, have access to affordable and nutritious food, and live in suitable housing."

Utilization by Age Group

Based on data from the *NWT Hospitalization Report* (2013), the following are the utilization by age group. The increase in utilization, average stay and cost per capita is clearly evident for the cohorts 65+ years (e.g., 189 per 1,000 [65 to 74 years] compared to 82 per 1,000 for the 45 to 64 years cohort).

Table 3.1: Utilization by Age Group, 2008-09 to 2010-11, Annual Average

Age Group	Unique Patients per 1,000	Discharges per 1,000	Average Stay (Days)	Estimated Cost per Capita
Total	81	116	5.4	$ 1,568
Under 1	190	255	5.8	$ 4,665
1 to 4	45	57	3.2	$ 574
5 to 14	20	26	3.3	$ 249
15 to 24	79	99	3.9	$ 990
25 to 44	86	115	3.9	$ 1,165
45 to 64	82	126	6.0	$ 1,881
65 to 74	189	338	8.1	$ 6,597
75 & Up	299	527	9.8	$ 10,966

3.4.4 Life Expectancy and Mortality Rates

The NWT life expectancy data from Statistics Canada for the 2009-2011 period indicates that at birth males have a projected life expectancy of 76.28 years and females have 80.07 years. At age 65, the remaining life expectancy of males is 17.76 years and 20.23 for females. The following table shows life expectancy at birth and at age 65 for Canada and the three territories (Statistics Canada 2013).

	At Birth		At Age 65	
	Males	**Females**	**Males**	**Females**
Canada	79.33	83.60	18.82	21.73
NWT	**76.28**	**80.07**	**17.76**	**20.23**
Yukon	75.19	79.61	6.24	18.87
Nunavut	68.75	73.91	14.55	15.39

Aboriginal Mortality

In terms of variation between Aboriginal and non-Aboriginal population, the data is less complete. Based on the 2006 census, a special projection series (Morency et al. 2015), was completed by Statistics Canada at the national level. The report provides relevant context regarding disparity in Aboriginal health status and mortality rates, while recognizing the limited specific data for the NWT. The source data came from Vital Statistics, 1991 to 2001 censuses mortality follow-up file and the Indian Register.

There are data gaps in the case of Aboriginal mortality since, at the national level, vital statistics do not contain information on Aboriginal groups. Therefore, several data sources, each with a number of limitations, were combined to create the data.

- Relative risks of dying were calculated using proportional risk regressions estimated on a database that matches the 1991 Census with vital statistics from 1991 to 2001 (census mortality follow-up study, 1991 through 2001). The relative risks take the following variables into account: Aboriginal identity, residence on or off reserve, province, visible minority group, immigrant status and immigration period, highest level of education and age.

Studies focusing on the mortality of the Aboriginal peoples in Canada have shown that their mortality remains *higher* than that of non-Aboriginal people. Key data sources include: Verma, Michalowski and Gauvin (2004), Wilkins et al. (2008a), Wilkins et al. (2008b), and Tjepkema and Wilkins (2011). Statistics Canada data corroborate these findings. The data input into the Model for Inuit mortality (based on a geographic approach) indicate for the period 2004 to 2007, a life expectancy of 68 years for men and 74 years for women, which is approximately 10 years less than for the Canadian population as a whole.

Proportional hazards models estimated for men and women aged 25+ years based on 1991 Census data combined with vital statistics for 1991 to 2001 in turn show that First Nations, whether they live on or off reserve, have a higher mortality than Métis, which in turn is higher than that of non-Aboriginal people, even when controlling for age, place of residence, education, immigration period and visible minority group. For women, the estimated risks of dying were more than 1.5 times higher for each Aboriginal group than for the total population. For men, they were between 1.21 and 1.38 times higher.

NWT LTC Facilities Administrative Data

The LTC Program administrative data from the facilities provides essential insight into resident characteristics and mortality rates (see Sections 6.5 to 6.7 for a detailed discussion). Selected findings from the facility administrative data include:

Resident Profile

The key observations regarding the profile of facility residents include:

- There were a total of 934 residents in the LTC system during the five-year period (2010 to 2015). This represents an average of 187 residents per year 'flowing through' the facilities;
- There were a total of 582 Aboriginal residents, representing some **62%** of the total resident population;
- There were 352 non-Aboriginal residents, representing some 38% of the total resident population;
- There were 461 male residents (49%) and 473 females (51%);
- Of the 461 male residents, 270 (59%) were Aboriginal, with 191 (41%) non-Aboriginal; and
- Of the 473 female residents, 312 (66%) were Aboriginal, with 161 (34%) non-Aboriginal.

Deceased Residents and Crude Mortality Rates

The key observations regarding resident mortality rates are presented below. The crude mortality rates are *non-standardized* due to the small numbers in cross-tabulated variables. Standardization is used when comparing different populations that have different demographic variables, such as differences in age.

- There were a total of 197 deaths of facility residents over the five-year period. This represents crude mortality rate of 21 per 100 residents (or 210 per 1,000); and
- There were 128 deceased Aboriginal residents, representing some **65%** of total facility deaths. This is a crude mortality rate of 22 per 100 (220 per 1,000) Aboriginal residents. Non-Aboriginal deaths accounted for 69 deaths, representing some 35%. This is a crude mortality rate of 19.6 per 100 (196 per 1,000) non-Aboriginal residents, which is 2.39 deaths per 100 residents lower (12.2%) than for Aboriginals.

Residents Age at Death

In broad terms, the average age at death for all facility residents has been increasing year over year. Reflecting the cumulative impact of applicants' older age at facility admission (particularly post TAC process in 2009), the probability of lower overall health status and, the associated more complex LOC needs. There are also notable observations respecting gender and ethnicity.

- The average age at death for all facility residents for the five-year period was 79.5 years. This ranged from a high of 83.1 years in FY 2013-14, to a low of 75.8 years in FY 2010-11;
- *Gender:* The average age at death for male residents was 76.5 years and 83.3 for females. This represents a difference of 6.8 years (8.9%);
- *Ethnicity*: While there is variation in the average age at death in terms of ethnicity, the variation is less than that the data by gender. The average age at death for Aboriginal residents was 79.1 years compared to 80.2 for non-Aboriginal residents, a difference of 1.1 years (1.4%);

- The average age at death for Aboriginal residents has generally reflected an increase over the five-year period, from a low of 73.5 years in FY 2010-11 to a high of 83.1 years in FY 2013-14; and
- The average age at death for non-Aboriginal residents also shows a pattern of increasing over the five-year period, although not to the same extent as Aboriginal residents. The increase ranged from a low of 76.0 years in FY 2011-12 to a high of 83.1 years in FY 2013-14. This trend reflects the historically longer life expectancy of non-Aboriginal persons (males and female) and the corresponding longer LOS at 1,271 days compared to 1,004 for Aboriginal residents, representing a difference of 267 days or some 21%.

3.4.5 Disability Rates

Overall in terms of disability rates, the NWT population is about the same as Canada's general population (including the older cohort rates of disability). As such, there is nothing to indicate that the LTC bed ratio should be lower. However, there is some anecdotal evidence that NWT LTC capacity needs to be higher than Canada rates due to the lower health statistics of Aboriginal Elders. This point was informed through personal communications with the Chief Clinical Advisor and Chief Public Health Officer based on their clinical experience. The observation was made that patients in the NWT often appeared to be *older* (i.e. about 10 years) than their actual chronological age. This 'older' appearance is attributed in part to a lower overall health status and the presence of chronic conditions.

Additionally, communications with Chief Clinical Advisor, Chief Public Health Officer and senior program staff noted that there exist a number of challenges in the delivery of the overall Continuing Care Program given that the actual capacity and comprehensive 'continuing care support team' is constrained. Specifically: (i) the NWT does not have sufficient capacity in geriatrics in the system; and, (ii) the very limited capacity to effectively deal with the social and mental health support aspect of Elders and seniors in continuing care. The clinical side is relatively better positioned than the social side of LTC services.

Relationship between Age and Incidence of Disability

Although Canadians, including NWT residents, are living longer, with a life expectancy of 81.7 years and a most common age at death of 85 years, the ability of many adults to perform key health functions, that is, their *functional health* declines as they age. The increasing proportion of Canadians reaching older ages raises issues about demand for health services and delivery of care, including LTC.

A person's functional health is measured using a scoring system (Health Utility Index) based on self-reported performance on eight key health attributes: vision, hearing, speech, mobility, dexterity, feelings, cognition and pain. This score can be used to categorize people as having varying degrees of disability on a scale from 0 to 1, where lower numbers mean greater disability.

Severe disability occurs when a person is prevented from performing *many* activities due to limitations in their ability to function in at least one of the eight health attributes and the limitation cannot be corrected (a functional health score of less than 0.7). Data shows that after age 65, the decline in the functional health line tends to accelerate, with more *severe disability* (many activity limitations) occurring, on average, around age 77. Another way to look at the quality of life during the later years of life is to calculate the equivalent number of years a person can be expected to live in good or full health.

This measure has been qualified as *health-adjusted life expectancy* (HALE). Life expectancy is the number of years a person would be expected to live, starting from birth (for life expectancy at birth) or

at age 65 (for life expectancy at age 65), on the basis of the mortality statistics for a given observation period.

Health-adjusted life expectancy is a more comprehensive indicator than that of life expectancy because it introduces the concept of quality of life. Health-adjusted life expectancy is the number of years in full health that an individual can expect to live given the current morbidity and mortality conditions. The latest estimate of health-adjusted life expectancy at birth is 69 years for men and 71 for women. That means that the average Canadian can expect to live roughly *10.5 years with some level of disability*.

Disability Rates: 2012

The prevalence of disability in Canada for those aged 65+ years was 33.2%. For those aged 75+ years the rate was 42.5%. The overall prevalence of disability in the NWT in 2012 was 8%. The rate for Canada was 13.7% which reflects the relatively 'older' population structure at the national level.

Severity of disabilities further reflects the correlation between age and the incidence of disability. In the NWT, the rates were as follows:

- For those aged 15 to 64 years of age, the rates of 'severe' and 'very severe' disabilities was 22.3% and 10.9%, respectively; and
- For those aged 65 years of age, the rates of 'severe' and 'very severe' disabilities was 27.7% and 12.0%, respectively.

The key sources cited for disability rates data are Statistics Canada (2010b), NWT Bureau of Statistics (2007), Arim (2015), and Decady and Greenberg (2014).

3.4.6 Informing LTC Demand Scenarios and Demand Projections

The ISDM (2005) provides an essential guide for the current bed demand projections. The ISDM report provided a detailed view of the NWT's health delivery system and offered alternative models of care that can efficiently and effectively meet current and future needs. It proposed a new health centre classification system and established institutional care benchmarks and planning guidelines, including those for LTC.

The report established a "*more appropriate and reasonable population cohort*" as 70+ years (in contrast to the Canadian guideline of beds per 1,000 for a population cohort of 75+ years). Additionally, the bed ratio of *110 per 1,000* (aged 75+ years) previously adopted from Manitoba was amended to *120 per 1,000* (aged 70+ years) to more accurately reflect the demographic, health status (i.e., higher incidence of chronic diseases) and programming needs in the NWT. This included provision for 3 beds per 1,000 for dementia care (as a sub-set of the 120 per 1,000 ratio). The report also recommended adopting a single point of entry process for admitting residents to LTC facilities.

The report included an explicit rationale for a higher LTC bed ratio for the NWT based on the clinical, program administrative data, and demographic evidence available at that time. It is useful to reflect on the rationale in light of the subsequent decade of evidence and LTC Program experience. The original rationale and evidence presented in the ISDM are summarized below.

- A comparison of institutionalization bed rates between the NWT and Canada indicated that the NWT bed population ratio for LTC was significantly higher (252 beds/1,000 population 75+ years) than all of the other jurisdictions, and 150% higher than the Canadian average;
- The higher rate of LTC institutionalization in the NWT can, in part, be explained by a lack of private sector involvement in the provision of LTC facilities, as well as a more aggressive move by the provinces towards providing home support arrangements in order to reduce the dependency on nursing homes and institutional care;
- Based on the actual utilization data, the average age of residents in the NWT LTC beds is 74 years (77 as of July 2015). However, due to the lack of supportive living housing options and the limited home-support services in some communities, the NWT will likely continue to admit seniors into LTC facilities at a younger age than the provinces. Therefore, it is considered that a more appropriate and reasonable population cohort for planning purposes is the 70+ years cohort; and
- Given the unique circumstances of the NWT, it is considered that a benchmark of 110 beds/1,000 is too low. The NWT population health experience has a demonstrated higher incidence of chronic diseases. As well, issues related to the lack of available and appropriate housing, along with the necessary supporting community based infrastructure, all contribute to higher rates of institutionalization in the NWT, and the need for additional beds, as compared to Canada as a whole.

The Prevalence and Incidence of Dementia: Potential Implications for Demand

Monitoring emerging health risks is a key component of the Model. Specifically, the need to consider and adjust (as may be required) the initial demographic driven bed demand projections brings into focus modeling assumptions that may not have a simple algorithm – and where program expertise at a facility level is essential to get a demand estimate that is 'approximately right'. Among the most critical issues identified through the review is, and will continue to be the challenge to projecting service demand that reasonably accommodates the emerging incidence of dementia.

Bed demand projections need to take into account the projected impact of dementia on Canadian society (Alzheimer Society, 2010). This is a key assumption to address through the Model given the fact that based on a range of published literature the rates of dementia in Canada for the 65+ years cohort is estimated 1 in 11, or about 9%. The corresponding rate in the United States is 1 in 9, or about 11%. The inter-jurisdictional scan conducted for the review found the significant challenges posed by the increasing incidence of dementia in facility residents to the delivery of LTC across jurisdictions.

The challenge of dementia and the associated demands on LTC facilities and staff in the NWT was observed by PSAV Architects (2010). Based on residents' administrative data, the following findings were made: (i) some 47% of residents had some level of cognitive impairment; (ii) for all admissions between 2005 and 2009, the average age was 76.5 years; and, (iii) some 72% of residents were classified as LOC 3 to 5. The remaining residents were classified at LOC 1 and 2.

MNP (2013) made the following observations: (i) the average age of residents in NWT facilities was 77 or over in all facilities except the Stanton ECU where the average age was 67 in FY 2010-11 and 65 in 2012-13; and, (ii) in FY 2011-12 and 2012-13, the average LOC of residents occupying beds ranged from 3.2 to 3.8 for all facilities except the Stanton ECU, which had an average LOC of 4.0 in FY 2011-12 and 4.5 in FY 2012-13.

Dementia in Aboriginal Peoples

In the context of the discussion of health status variation based on ethnicity, the impact of dementia on the Aboriginal population is not well researched. One recent and directly relevant study does provide some insight into how the impact of dementia needs to be considered. Jacklin et al. (2013) reached the following conclusions from the analysis of 'physician-treated prevalence' rates of dementia for First Nations people in Alberta between 1998 and 2009: (i) little is known about the prevalence and incidence of dementia in Aboriginal communities in Canada; (ii) to respond to the data gap the researcher team conducted population-level data in the First Nations population in Alberta; and, (iii) research results indicate that in 2009, the age-standardized prevalence of dementia in First Nations was 7.5 per 1,000 compared to non-First Nations, at 5.6 per 1,000. The data indicates that dementia disproportionately affects younger age groups and males in First Nations compared to non-First Nations.

Additionally, the study concluded: "*Dementia represents an emerging health concern for First Nations. This increase may be driven by parallel trends, such as population aging, changing perceptions of dementia, and disproportionately higher rates of associated risk factors, impacts of the social determinants of health and co-morbid illnesses. The unique epidemiological profile supports the needs for responsive policies, programs and care geared specifically to First Nations*." In terms of the point regarding co-morbid illnesses, the research report observed that "*the risk of dementia for First Nations may also be elevated due to higher rates of associated conditions, such as hypertension, heart disease, stroke and diabetes, and higher smoking and obesity rates, all of which increase the risk of dementia*". This is also evident in *NWT Health Status Report* (2011) and *NWT Hospitalization Report* (2013) discussed in Section 3.4.

The findings of the research by Jacklin et al. (2013) are consistent with the conclusions with the only other data and studies, from British Columbia and Australia. In the Australia study, Smith et al. (2008) indicate that the prevalence of dementia among the Indigenous peoples in Kimberly, Australia is 12.4% for those over 45, compared to the age-standardized rate of 2.4% for the overall Australian population, making the indigenous rate in Kimberley 5.2 times higher.

In British Columbia (2009) the data, which was the only population based estimate in Canada, indicates that the age-standardized rate of all dementia was *similar between the First Nations population and the general population of British C*olumbia in FY 2006-07. The BC data suggest that First Nations have an *earlier onset of dementia and increased risk among males*, which is in contrast to non-First Nations trends but consistent with what has been found in Indigenous Australian men who experience dementia at nearly double the rate of Indigenous women.

Fetal Alcohol Syndrome/Fetal Alcohol Effects (FAS/FAE)

One of the other emerging factors (although no data was available on the incidence and rates in the NWT) identified by program staff and clinical information, is the potential future increase in LTC demand resulting from the observed increase in the number of children with Fetal Alcohol Syndrome/Fetal Alcohol Effects (FAS/FAE) and other developmental delays (see Section 3.6 for additional discussion). *Fetal Alcohol Spectrum Disorder* (FASD) is an umbrella term describing the range of effects associated with alcohol use during pregnancy. The effects of alcohol on the fetus are permanent and can include: facial dysmorphology, growth restriction, central nervous system and neurodevelopmental abnormalities, and behavioural, emotional and social difficulties.

Currently there are no national estimates of the prevalence of FASD in Canada. Given the data gaps, it is informative to draw on recent studies that provide some estimates based on North American and European data: (i) FASD is estimated to affect between 2% and 5% of people in the United States and Western Europe, based on the findings in Centers for Disease Control and Prevention (2015)*;* and, (ii) Ospina and Dennett (2013) observed reported estimates ranged from 0.02% to 0.5%, which translate to rates of 0.2 to 5.0 per 1,000 population. It is interesting to note that this study found that there was significant variance depending on the setting where the sample was taken from. Overall, the prevalence of FASD in Aboriginal persons (North America) was in the range of 0.2% to 2%, which is '*not substantially higher'* than the samples of the general population. Additional insight is provided by Pacey (2009).

The DHSS Territorial Epidemiologist (personal communication, November 18, 2015) confirmed the following: (i) the NWT *Congenital Anomalies Registry* only captures new cases diagnosed after January 2009. As a result, there is no data on prevalence and the data which exists have is affected by the capacity (and lack thereof); and, (ii) that the figures currently in the registry *significantly underestimate the true prevalence* as well as the burden on the health system. Consequently, the data with respect to FASD are viewed as not useful for informing evidence-based programming.

While any detailed assessment of potential impacts on demand resulting from dementia and FASD is beyond the scope of the review, it needs to be taken into consideration in policy discussions and resource investment decisions from the perspective of contributing to the rationale for a higher bed ratio for LTC facilities in the NWT (for at least the next decade). FAS/FAE are among the considerations identified in the Model and methodology, specifically, component 3 and 4 (see Section 7.2).

The findings of the *NWT Health Status Report* (2011) and the *NWT Hospitalization Report* (2013) provide compelling evidence to inform policy consideration based of the rates of alcohol consumption (i.e., 'heavy drinking') and the hospitalization impacts, which included the following during the period FY 2008-9 to 2010-11: (i) on an annual average basis, 429 patients were hospitalized 615 times, with one or more alcohol or drug related issue, resulting in 3,250 bed days at an estimated cost of $7.5 million. Between 37% and 50% of the patients, discharges, length of stay (LOS) and estimated costs where the primary diagnosis was an alcohol or drug issue; (ii) men made up the 61% of patients and 66% of the costs of alcohol and drug hospitalizations, with women representing 39% of patients and 34% of costs; and, (iii) in terms of ethnicity, Aboriginal residents made up **77%** of the patients and **72%** of the costs of alcohol and drug hospitalizations, with non-Aboriginals representing 17% of patients and 23% of the costs.

3.5 Selected Social and Economic Characteristics

3.5.1 Household Structure and Tenure

In the context of the demographic demand side drivers for LTC (see Figure 3.1) the following provides additional insight for policy and programming decisions. The rate of homeownership is one relevant metric of economic resources and assets. Additionally, among the larger directly relevant trends in LTC utilization across North America are:

- The financial determinants of LTC demand are the price, the relative price of close substitutes, and the person's income and assets;
- Lower probability of institutionalization of seniors who are homeowners. Persons with higher housing wealth, a pension income, and rental income were less likely to enter a nursing home; and
- Married persons are also more likely to have children, another important source informal care. Married persons have shorter LOS *(conditional on admission)*, either because of their ability to return home, or because of higher risk of mortality because entering in worse health status.

Home Ownership in the NWT

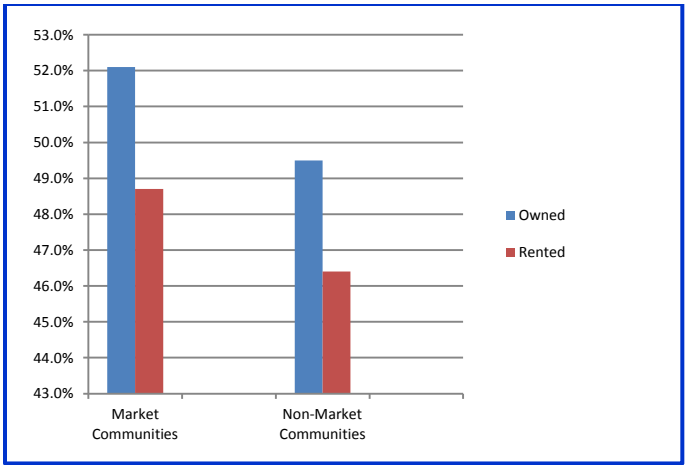
Homeownership in the NWT is characterized by the following historic and current patterns and trends:

- At the territorial level, home ownership as a tenure choice increased from 30% in 1981, to 49% in 1996 and peaked at 53% in 2001 and declined to 52% in 2011. This represents an increase of some 22%, or viewed from another perspective this was a 75% growth in home ownership during the period;
- The ownership rate has remained largely unchanged from 2001 to 2011, and then declined slightly in 2011 to 52% (52% in market communities and 50% in non-market communities). The corresponding national rate was 69%; and
- The convergence of economic factors, housing policies, and housing supply and demand has contributed to the levelling off of home ownership rates. Moreover, the period since 2001 has been characterized by protracted low and stable cost of borrowing (based on the metrics of the Bank of Canada prime rate and conventional residential mortgages). Low borrowing costs historically are factors that would have contributed to drawing more households into ownership, but which appear to not have had this effect in the NWT during this period.

Regional Context: Market and Non-Market Communities

Of the 33 communities, the six largest centres (Yellowknife, Hay River, Fort Smith, Fort Simpson, Norman Wells and Inuvik) are defined as '*housing market*' communities. Based on the 2011 National Household Survey (Statistics Canada, 2015b), taken together they represent a population of 32,000 (73.6% of territorial total), and over 11,000 (26.4% of territorial total) households. Some 5,900 (52%) were owned, with another 5,400 (48%) rented, with band housing accounting for 10 (0.1%) households.

The 27 smaller communities are considered non-market, with a population of some 11,000 (26.4% of territorial total) and consisted of 3,300 (23% of territorial total) households. Some 1,700 (49%) are owned, with another 1,600 (46.4%) rented, with band housing accounting for 140 (4%) households.



Determinants of Home Ownership

There are two categories of factors that shape the likelihood of home ownership as a preferred tenure option: Internal (factors within the control of the individual and/or household); and, External (factors outside of the control of the individual and/or household). Within this array, a relatively small number emerge as critical determinants of a household's decision to own or rent their dwelling. These being *total household income*, which is influenced by type of household and *age of the primary maintainer*.

Examination of data from the 2011 National Household Survey (Statistics Canada 2015b) shows a significant correlation between income and homeownership nationally and territorially. The following observations regarding income ranges and ownership illustrate the relationship.

There has been extensive research across Canada regarding the determinants of homeownership, including CMHC (2006) and Lefebvre (2002).

- There were a total of 14,700 households in the territory, 7,575 (52%) were owned and 6,975 (47%) were rented;
- In the under $10,000 income group, there were 430 households, of which 100 (23%) were owned, with 315 (73%) rented;
- In the $40,000 to $59,999 group, there were 1,415 households, of which 520 (37%) were owned, with 880 (62%) rented;
- In the $60,000 to $79,999 group, there were 1,430 households, of which 625 (44%) were owned, with 795 (56%) rented;
- In the $80,000 to $99,999 group, there were 1,420 households, of which 695 (49%) were owned, with 715 (50%) rented; and
- In the $100,000 and over income group, there were 7,285 households, of which 4,940 (68%) were owned, with 2,335 (32%) rented.

The 2011 National Household Survey (Statistics Canada 2015b) methodology changes resulted in limitations on breakdown by market and non-market communities. However, data was available for Yellowknife. The same correlation was evident. The homeownership rate for the under $10,000 income

rage was 20%. The corresponding rates for the $60,000 to $79,999, $80,000 to $99,999, and $100,000 and over were 35%, 40% and 69%, respectively.

The overall patterns of homeownership are also evident by household type both nationally and territorially. The highest ownership rate by household type was in the *couple family with children*, which tend to have higher total income than other household types. The lowest rate of ownership tends to be in *non-family* (i.e., single person) households. Review of data from the 2001 and 2006 census shows the same patterns and correlation between homeownership, household income and household type.

NWT Seniors in Public Housing

Based on 2015 administrative data from the NWTHC, *there* are over 2,300 public housing units across the territory. Of the total, 2,100 were occupied public housing units (the rest were under repair or ready for occupancy). Overall, while seniors comprise some 10% of the territorial population, there were seniors resident in 700 units (31%). The corresponding figure for market and non-market communities was 300 (36%) and 400 (28%), respectively.

NWT Seniors Household Tenure and Composition in 2014

Based on data from the *2014 Community Survey* (NWT Bureau of Statistics 2014) a custom tabulation was developed for three selected seniors cohorts (60+ years; 65+ years; and, 70+ years) by the existing HSSA regional service areas. The presentation of data for the three seniors' cohorts is intended to inform discussion on emerging population levels and trends within the cohorts and the need for a range of Continuing Care Services.

Tables 3.2, 3.2.1 and 3.2.2 present the data for tenure and household composition for the NWT and the regions. There are minor differences in some totals from the population projection model and the *2014 Community Survey* due to timing differences.

Household Tenure

Table 3.2 indicates that at the NWT level, of the 4,789 persons aged 60+ years, 3,255 (68%) owned their home, while 1,535 (32%) were renters. The rate of homeownership in the regions ranged from a low of 47.6% in the Beaufort Delta to a high of 81.0% in the Hay River (South Slave Region).

Table 3.2: Number of Seniors (60+ Years) by Tenure and Household Composition, NWT, 2014

	Seniors -- 60 Years & Older					
	Total		Own		Rent	
	No. of Persons	%	No. of Persons	%	No. of Persons	%
Northwest Territories	**4,789**	**100.0**	**3,255**	**68.0**	**1,535**	**32.1**
Seniors who live alone or with other seniors	2,951	100.0	1,908	64.7	1,043	35.3
Live with Other non-seniors	1,839	100.0	1,347	73.2	492	26.8
Beaufort Delta Health & Social Services Authority	**829**	**100.0**	**395**	**47.6**	**434**	**52.4**
Seniors who live alone or with other seniors	429	100.0	180	41.9	250	58.1
Live with Other non-seniors	400	100.0	215	53.9	184	46.1
Dehcho Health & Social Services Authority	**431**	**100.0**	**310**	**72.1**	**120**	**27.9**
Seniors who live alone or with other seniors	265	100.0	183	69.0	82	31.0
Live with Other non-seniors	166	100.0	128	77.0	38	23.0
Fort Smith Health & Social Services Authority	**387**	**100.0**	**299**	**77.2**	**88**	**22.8**
Seniors who live alone or with other seniors	238	100.0	175	73.7	62	26.3
Live with Other non-seniors	149	100.0	123	82.7	26	17.3
Hay River Health & Social Services Authority	**626**	**100.0**	**507**	**81.0**	**119**	**19.0**
Seniors who live alone or with other seniors	428	100.0	338	78.9	90	21.1
Live with Other non-seniors	198	100.0	170	85.7	28	14.3
Sahtu Health & Social Services Authority	**310**	**100.0**	**186**	**60.2**	**123**	**39.8**
Seniors who live alone or with other seniors	170	100.0	91	53.2	80	46.8
Live with Other non-seniors	139	100.0	96	68.8	44	31.2
Tłı̨chǫ Community Services Agency	**283**	**100.0**	**217**	**76.8**	**66**	**23.2**
Seniors who live alone or with other seniors	106	100.0	83	78.4	23	21.6
Live with Other non-seniors	177	100.0	134	75.9	43	24.1
Yellowknife Health & Social Services Authority	**1,924**	**100.0**	**1,340**	**69.6**	**584**	**30.4**
Seniors who live alone or with other seniors	1,315	100.0	859	65.4	456	34.6
Live with Other non-seniors	609	100.0	480	78.8	129	21.2

Notes:

1. Source: NWT Bureau of Statistics, 2014 Community Survey.
2. As a result of the weighting process, total may not be the exact sum of their components.
3. Seniors who live with two or more other seniors may be within the same household.
4. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
5. Fort Smith HSSA includes Fort Smith
6. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise and Region 5 Unorganized
7. Deh Cho HSSA includes Fort Liard, Fort Providence, Fort Simpson, Jean Marie River, Kakisa, Trout Lake, Nahanni Butte, Wrigley & Region 4 Unorganized
8. Tlicho HSSA includes Behchoko, Wha Ti, Wekweti & Gameti
9. Beaufort-Delta HSSA includes Aklavik, Fort McPherson, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, Tsiigehtchic & Region 1 Unorganized
10. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita

The general pattern of owners and renter is also evident in both of the remaining cohorts (65+ years and 70+ years) as presented in Tables 3.2.1 and 3.2.2. The key observations from the tables are:

- In both the 65+ years and 70+ years cohorts, while the rate of homeownership remains high, a small decline is experienced with increasing age cohorts;
- In the 65+ years cohort, the rate of homeownership was 64.1%, compared to renters at 35.9%. The rate of homeownership ranged from a low of 41.0% in the Beaufort Delta to a high of 79.7% in the Fort Smith region; and
- In the 70+ years cohort, the rate of homeownership was 62.1%, compared to renters at 37.9%. The rate of homeownership ranged from a low of 40.8% in the Beaufort Delta to a high of 77.8% in the Fort Smith region.

Table 3.2.1: Number of Seniors (65+ Years) by Tenure and Household Composition, NWT, 2014

	Seniors -- 65 Years & Older					
	Total		Own		Rent	
	No. of Persons	%	No. of Persons	%	No. of Persons	%
Northwest Territories	**2,862**	**100.0**	**1,834**	**64.1**	**1,028**	**35.9**
Seniors who live alone or with other seniors	1,607	100.0	984	61.2	624	38.8
Live with Other non-seniors	1,255	100.0	851	67.8	404	32.2
Beaufort Delta Health & Social Services Authority	**570**	**100.0**	**234**	**41.0**	**336**	**59.0**
Seniors who live alone or with other seniors	264	100.0	75	28.4	189	71.6
Live with Other non-seniors	306	100.0	159	51.8	147	48.1
Dehcho Health & Social Services Authority	**273**	**100.0**	**210**	**76.8**	**63**	**23.1**
Seniors who live alone or with other seniors	147	100.0	110.02	74.7	37.16	25.2
Live with Other non-seniors	126	100.0	99.84	79.3	26.04	20.7
Fort Smith Health & Social Services Authority	**267**	**100.0**	**212.91**	**79.7**	**54.09**	**20.3**
Seniors who live alone or with other seniors	150	100.0	124	82.9	26	17.1
Live with Other non-seniors	117	100.0	88.52	75.7	28.45	24.3
Hay River Health & Social Services Authority	**390**	**100.0**	**302.1**	**77.5**	**87.58**	**22.5**
Seniors who live alone or with other seniors	245	100.0	191.47	78.1	53.82	21.9
Live with Other non-seniors	144	100.0	111	76.6	34	23.4
Sahtu Health & Social Services Authority	**196**	**100.0**	**125**	**63.8**	**71**	**36.2**
Seniors who live alone or with other seniors	107	100.0	64	60.2	43	39.8
Live with Other non-seniors	89	100.0	61	68.1	29	31.9
Tłı̨chǫ Community Services Agency	**182**	**100.0**	**132**	**72.3**	**51**	**27.7**
Seniors who live alone or with other seniors	65	100.0	53	81.4	12	18.6
Live with Other non-seniors	118	100.0	79	67.3	39	32.7
Yellowknife Health & Social Services Authority	**983**	**100.0**	**618**	**62.9**	**365**	**37.1**
Seniors who live alone or with other seniors	629	100.0	366	58.1	263	41.9
Live with Other non-seniors	354	100.0	253	71.3	102	28.7

Notes:

1. Source: NWT Bureau of Statistics, 2014 Community Survey.
2. As a result of the weighting process, total may not be the exact sum of their components.
3. Seniors who live with two or more other seniors may be within the same household.
4. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
5. Fort Smith HSSA includes Fort Smith
6. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise and Region 5 Unorganized
7. Deh Cho HSSA includes Fort Liard, Fort Providence, Fort Simpson, Jean Marie River, Kakisa, Trout Lake, Nahanni Butte, Wrigley & Region 4 Unorganized
8. Tlicho HSSA includes Behchoko, Wha Ti, Wekweti & Gameti
9. Beaufort-Delta HSSA includes Aklavik, Fort McPherson, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, Tsiigehtchic & Region 1 Unorganized
10. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita

Table 3.2.2: Number of Seniors (70+ Years) by Tenure and Household Composition, NWT, 2014

	Seniors -- 70 Years & Older					
	Total		Own		Rent	
	No. of Persons	%	No. of Persons	%	No. of Persons	%
Northwest Territories	**1,693**	**100.0**	**1,050**	**62.1**	**642**	**37.9**
Seniors who live alone or with other seniors	844	100.0	489	58.0	354	42.0
Live with Other non-seniors	849	100.0	561	66.1	288	33.9
Beaufort Delta Health & Social Services Authority	**346**	**100.0**	**141**	**40.8**	**205**	**59.2**
Seniors who live alone or with other seniors	162	100.0	49	30.4	113	69.6
Live with Other non-seniors	184	100.0	92	50.0	92	50.0
Dehcho Health & Social Services Authority	**173**	**100.0**	**132**	**76.1**	**41**	**23.9**
Seniors who live alone or with other seniors	80	100.0	63	78.1	18	21.8
Live with Other non-seniors	93	100.0	69	74.2	24	25.8
Fort Smith Health & Social Services Authority	**159**	**100.0**	**124**	**77.8**	**35**	**22.2**
Seniors who live alone or with other seniors	79	100.0	66	83.9	13	16.1
Live with Other non-seniors	80	100.0	58	71.8	23	28.2
Hay River Health & Social Services Authority	**237**	**100.0**	**173**	**73.0**	**64**	**27.0**
Seniors who live alone or with other seniors	136	100.0	90	66.1	46	33.9
Live with Other non-seniors	101	100.0	83	82.3	18	17.7
Sahtu Health & Social Services Authority	**136**	**100.0**	**86**	**63.4**	**50**	**36.6**
Seniors who live alone or with other seniors	78	100.0	44	56.1	34	43.9
Live with Other non-seniors	58	100.0	42	73.2	16	26.8
Tłı̨chǫ Community Services Agency	**125**	**100.0**	**92**	**73.3**	**33**	**26.7**
Seniors who live alone or with other seniors	40	100.0	34	84.9	6	15.1
Live with Other non-seniors	85	100.0	57	67.8	27	32.2
Yellowknife Health & Social Services Authority	**517**	**100.0**	**303**	**58.6**	**214**	**41.4**
Seniors who live alone or with other seniors	268	100.0	144	53.5	125	46.5
Live with Other non-seniors	249	100.0	160	64.2	89	35.8

Notes:

1. Source: NWT Bureau of Statistics, 2014 Community Survey.
2. As a result of the weighting process, total may not be the exact sum of their components.
3. Seniors who live with two or more other seniors may be within the same household.
4. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
5. Fort Smith HSSA includes Fort Smith
6. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise and Region 5 Unorganized
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10. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita

Household Composition

Tables 3.2 to 3.2.2 indicate that household composition has some effect on the rate of homeownership. The two categories of household composition selected for analysis were: (i) seniors who live alone or with other seniors; and, (ii) seniors who live other non-seniors. The data indicates that at the NWT level, 2,951 persons (61.6%) lived alone or with other seniors. The rate of homeownership was 64.7%. Renters represented 35.3% of this household category. For seniors who lived with other non-seniors, 1,839 (38.4%), the rate of homeownership was 73.2%. Renters represented 26.8% of this household category.

The general pattern of household composition and rate of homeownership is also evident in both of the remaining cohorts (65+ years and 70+ years) as presented in Tables 3.2.1 and 3.2.2. The key observations from the tables are:

- In the 65+ years cohort, the share of those seniors who live alone (56.2%) or with other seniors compared to those seniors who live with other non-seniors (43.9%), while lower (-5.4% and +5.5%, respectively) than the 60+ years cohort, reflected the overall territorial pattern.
- In the 65+ years cohort, those who lived alone or with other seniors had a homeownership rate of 61.2%, compared to 67.8% for those seniors who lived with other non-seniors. The rate of ownership was lower at -5.4% and -5.4%, respectively, compared to the 60+ years cohort.
- In the 70+ years cohort, the share of those seniors who live alone (49.9%) or with other seniors compared to those seniors who live with other non-seniors (50.1%), while lower (-11.7% and +11.7%, respectively) than the 60+ years cohort, reflected the overall territorial pattern.
- In the 70+ years cohort, those who lived alone or with other seniors had a homeownership rate of 58.0%, compared to 66.1% for those seniors who lived with other non-seniors. The rate of ownership was lower at -6.7% and -7.1%, respectively, compared to the 60+ years cohort.

3.5.2 Marital Status

Given that one of the trends in institutionalization trends is that married persons are more likely to have children, which serve as an important source of informal care, the following data is presented regarding legal marital status in the NWT in 2011, for the three selected seniors' cohorts (65, 70, and 75+ years). Summarized below are observations from the available data, with emphasis on the territorial level due to the small regional numbers.

While this is a complex variable to model directly, it is a relevant consideration in LTC demand and supply management, and more generally for the continuum of Continuing Care Services.

Territorial Level

- The overall pattern across the NWT and regions generally is one of declining rates in the categories of (i) those who were single (and never legally married); and, (ii) those who were married (and not separated). As could be expected, the rate of those in the widowed category increased with the age cohort.

- In the 65+ years cohort the proportion of those who were single (and never legally married), those who were married (and not separated), and those who were widowed were 16.3%, 44.2%, and 26.3%, respectively.

- In the 70+ years cohort the proportion of those who were single (and never legally married), those who were married (and not separated), and those who were widowed were 15.4%, 37.5%, and 36.1%, respectively.

- In the 75+ years cohort the proportion of those who were single (and never legally married), those who were married (and not separated), and those who were widowed were 14.3%, 32.7%, and 44.6%, respectively.

Table 3.3: Population by Legal Marital Status, Age Group, NWT, 2011

	15 to 59 years						60 years and over						70 years and over						70 to 74 years						75 years and over					
	Total	Single (never legally married)	Married (and not separated)	Separated, but still legally married	Divorced	Widowed	Total	Single (never legally married)	Married (and not separated)	Separated, but still legally married	Divorced	Widowed	Total	Single (never legally married)	Married (and not separated)	Separated, but still legally married	Divorced	Widowed	Total	Single (never legally married)	Married (and not separated)	Separated, but still legally married	Divorced	Widowed	Total	Single (never legally married)	Married (and not separated)	Separated, but still legally married	Divorced	Widowed
Northwest Territories	**28,375**	**16,545**	**9,405**	**775**	**1,400**	**235**	**4,080**	**755**	**1,965**	**155**	**465**	**735**	**1,425**	**220**	**535**	**45**	**105**	**515**	**585**	**100**	**260**	**20**	**65**	**140**	**840**	**120**	**275**	**25**	**40**	**375**
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0							0	0	0	0	0	0
Beaufort Delta Region	4,420	2,970	1,130	125	150	30	750	175	265	50	70	175	290	55	65	15	20	120	125	30	30	5	15	40	165	25	35	10	5	80
Aklavik	90	60	15	0	0	0	20	0	10	0	5	0	10	0	10	0	0	0	5	0	5	0	0	0	5	0	5	0	0	0
Fort McPherson	400	290	95	20	0	10	90	25	20	10	5	30	40	10	10	0	0	15	20	0	10	0	0	5	20	10	0	0	0	10
Inuvik	475	370	100	10	0	10	135	30	50	15	15	35	70	15	20	5	10	25	30	10	5	0	5	10	40	5	15	5	5	15
Paulatuk	2,340	1,450	655	80	115	15	350	90	120	20	50	70	115	25	20	0	15	45	50	15	10	0	10	15	65	10	10	0	5	30
Sachs Harbour	225	185	40	10	10	5	25	5	20	0	0	5	10	0	5	0	0	5	5	0	0	0	0	5	5	0	5	0	0	0
Tsiigehtchic	65	55	15	10	5	0	5	0	5	5	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	0
Tuktoyaktuk	550	395	125	20	15	5	85	30	25	10	5	15	30	5	0	0	5	10	10	5	0	0	5	0	20	0	0	0	0	10
Ulukhaktok	265	185	70	5	0	0	45	5	15	0	0	10	15	5	0	0	0	5	5	0	0	0	0	5	10	5	0	0	0	0
Sahtu Region	**1,545**	**1,035**	**430**	**25**	**45**	**10**	**250**	**55**	**135**	**5**	**10**	**55**	**100**	**15**	**50**	**0**	**0**	**40**	**45**	**5**	**30**	**0**	**0**	**10**	**55**	**10**	**20**	**0**	**0**	**30**
Colville Lake	60	50	20	0	0	5	10	0	5	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	5	0	5	0	0	0
Déline	325	230	85	5	5	5	45	5	35	0	5	10	10	5	10	0	0	5	5	0	5	0	0	0	5	5	5	0	0	5
Fort Good Hope	320	205	80	5	10	5	75	15	40	0	0	15	30	5	15	0	0	10	15	0	10	0	0	0	15	5	5	0	0	10
Norman Wells	520	310	195	20	20	5	65	20	30	0	5	10	15	5	5	0	0	5	5	0	0	0	0	0	10	5	5	0	0	5
Tulita	305	250	50	0	10	5	60	5	20	0	0	20	35	0	10	0	0	20	20	0	10	0	0	5	15	0	0	0	0	15
Tłı̨chǫ Region	**1,685**	**1,265**	**355**	**45**	**5**	**30**	**225**	**50**	**125**	**5**	**5**	**35**	**105**	**15**	**50**	**0**	**0**	**30**	**50**	**10**	**30**	**0**	**0**	**10**	**55**	**5**	**20**	**0**	**0**	**20**
Behchokǫ̀	1,130	865	220	25	5	15	160	45	75	0	0	35	70	20	30	0	0	25	35	10	20	0	0	10	35	10	10	0	0	15
Gamètì	155	115	50	0	0	5	25	5	10	0	0	5	15	5	5	0	0	5	5	0	0	0	0	0	10	5	5	0	0	5
Wekweètì	90	50	15	0	0	5	15	0	5	0	0	5	5	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	5
Whatì	310	225	70	5	0	0	35	10	20	0	0	10	20	0	10	0	0	5	10	0	5	0	0	5	10	0	5	0	0	0
Dehcho Region*	**2,115**	**1,520**	**470**	**60**	**40**	**25**	**400**	**105**	**170**	**10**	**25**	**95**	**150**	**30**	**50**	**0**	**5**	**65**	**55**	**10**	**25**	**0**	**0**	**10**	**95**	**20**	**25**	**0**	**5**	**55**
Fort Liard	350	270	60	10	0	5	45	0	15	5	0	10	25	0	5	0	0	10	10	0	5	0	0	5	15	0	0	0	0	5
Fort Providence	500	365	120	10	15	5	85	10	45	0	10	25	40	0	25	0	0	20	15	0	10	0	0	5	25	0	15	0	0	15
Fort Simpson	825	545	210	35	20	10	155	60	50	10	10	25	50	20	5	5	0	15	15	10	0	0	0	5	35	10	5	5	0	10
Hay River Dene 1	175	125	30	15	0	0	50	10	15	0	10	0	25	5	0	0	5	0	10	0	0	0	5	0	15	5	0	0	0	0
Kakisa	20	10	10	0	0	0	10	0	10	0	0	5	10	0	5	0	0	5	5	0	5	0	0	0	5	0	0	0	0	5
Nahanni Butte	60	60	15	0	0	5	20	10	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
Trout Lake	55	50	10	5	0	0	25	5	10	0	0	5	15	0	10	0	0	5	0	0	5	0	0	0	15	0	5	0	0	5
South Slave Region	**4,500**	**2,505**	**1,570**	**130**	**265**	**35**	**995**	**165**	**495**	**30**	**125**	**175**	**385**	**60**	**155**	**10**	**35**	**130**	**140**	**15**	**60**	**5**	**20**	**35**	**245**	**45**	**95**	**5**	**15**	**95**
Enterprise	45	35	20	0	5	0	20	10	5	0	0	5	5	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0
Fort Resolution	280	210	65	5	10	5	80	25	35	0	0	30	35	10	15	0	0	20	10	0	5	0	0	5	25	10	10	0	0	15
Fort Smith	1,305	745	455	15	75	0	320	65	175	5	40	35	135	25	65	5	15	30	45	10	25	0	10	5	90	15	40	5	5	25
Hay River	2,425	1,270	880	80	150	30	460	50	225	15	55	110	180	15	65	5	5	75	70	10	25	5	5	20	110	5	40	0	0	55
Lutselk'e	180	135	25	5	15	0	30	15	10	0	5	5	10	10	5	0	5	5	5	0	5	0	5	0	5	10	0	0	0	5
Region 5, Unorganized	255	100	120	0	15	0	50	10	40	0	10	5	5	0	10	0	0	0	0	0	5	0	0	0	5	0	5	0	0	0
Yellowknife Region	**14,120**	**7,260**	**5,455**	**420**	**890**	**110**	**1,445**	**195**	**765**	**55**	**220**	**205**	**385**	**35**	**155**	**10**	**40**	**140**	**165**	**20**	**80**	**5**	**25**	**35**	**220**	**15**	**75**	**5**	**15**	**105**
Detah	140	100	30	10	0	0	25	0	15	0	0	5	20	0	5	0	0	5	5	0	5	0	0	0	15	0	0	0	0	5
Yellowknife	13,995	7,155	5,430	415	880	95	1,425	195	750	65	220	200	375	40	145	15	40	135	160	20	75	5	25	35	215	20	70	10	15	100

Source: Statistics Canada, 2011 Census

* Data for Jean Marie River and Wrigley are suppressed because data quality index showing a global non response rate is higher than or equal to 25%.

3.5.3 Seniors Labour Force Activity, 2014 and 2009

Given the relationship between income, household wealth and institutionalization, it is relevant to examining seniors' labour force activity. Table 3.4 provides the data for 2014 and 2009 based on the results from the NWT Community Surveys (NWT Bureau of Statistics 2014).

In 2014, the NWT had some 24,000 persons in the labour force. The unemployment rate was 7.4%, and the participation rate and employment rates were 72% and 67%, respectively. In Yellowknife the unemployment rate was 3.8%, and the participation rate and employment rates were 83% and 79%, respectively. In contrast, the rates for the rest of the territory show an unemployment rate of 13.0%, and the participation rate and employment rates were 66% and 57%, respectively. The key observations with respect to the seniors' cohorts are:

- The proportion of employed seniors in 2009 indicates a decline with increasing age cohort. In the 60+, 65+ and 70+ years cohort the proportions were 39.8%, 17.2% and 8.5%, respectively; and
- The proportion of employed seniors in 2014 indicates a decline with increasing age cohort. In the 60+, 65+ and 70+ years cohort the proportions were 40.4%, 25.3% and 17.5%, respectively. It is noteworthy that the number of employed seniors overall in 2014 is higher than in 2009, and in particular in the 70+ years cohort.

Table 3.4: Labour Force Activity, Population Aged 60+, NWT, 2014 and 2009

	Total	Labour Force	Employed	Unemployed	Not in the Labour Force	Participation Rate	Unemployment Rate	Employment Rate
2014 NWT	**34,087**	**25,014**	**22,353**	**2,661**	**9,073**	**73.4**	**10.6**	**65.6**
Age Group								
60+	4,789	2,073	1,933	140	2,717	43.3	6.8	40.4
65+	2,862	778	725	53	2,084	27.2	6.8	25.3
70+	1,693	314	297	17	1,379	18.5	5.4	17.5
2009 NWT	**33,730**	**25,315**	**22,699**	**2,616**	**8,415**	**75.1**	**10.3**	**67.3**
Age Group								
60+	3,862	1,617	1,536	81	2,245	41.9	5.0	39.8
65+	2,263	414	388	26	1,849	18.3	6.3	17.1
70+	1,400	124	119	5	1,276	8.9	4.0	8.5

Source: 2014 & 2009 Community Surveys

3.5.4 NWT Income Characteristics by Age Cohort: 2000 to 2012

Table 3.5 provides an important part of the household income and affordability context. The Canadian and Nunavut level data is provided for context. The key observations are:

- The proportion of senior tax filers (65+ years) with income of $50,000 and over has increased each year since 2000, from 6.3% in 2000 to 25.4% in 2012. This increase exceeded the proportional increase in NWT overall for all tax filers, 19.1% and 17.4%, respectively; and
- For Canada overall, the proportion of senior tax filers (65+ years) with income of $50,000 and over has also increased each year since 2000, from 7.7% in 2000 to 18.0% in 2012.

Table 3.5: Number and Percent of Tax Filers and Dependents with More than $50,000 in Income, By Age Group, NWT, 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Canada													
Total No. of Taxfilers & Dependents	22,131,680	22,709,910	22,798,980	23,070,200	23,408,890	23,715,660	24,113,140	24,351,240	24,731,470	24,964,290	25,227,050	25,599,300	25,797,510
No. with income of $50,000 & over	3,496,080	3,806,950	4,025,790	4,285,870	4,631,570	5,006,340	5,483,130	5,955,550	6,394,790	6,458,940	6,726,390	7,183,920	7,597,110
% with income more than $50,000	15.8	16.8	17.7	18.6	19.8	21.1	22.7	24.5	25.9	25.9	26.7	28.1	29.4
No. Aged 0 - 24 Years	2,937,890	3,013,220	3,006,440	3,014,180	3,041,200	3,070,600	3,105,170	3,149,520	3,185,000	3,116,370	3,074,530	3,098,020	3,103,480
No. with income of $50,000 & ove	22,340	27,600	29,320	33,820	39,440	51,430	67,240	81,370	100,910	94,610	100,890	116,270	133,880
% with income more than $50,000	0.8	0.9	1.0	1.1	1.3	1.7	2.2	2.6	3.2	3.0	3.3	3.8	4.3
No. Aged 25 - 64 Years	15,435,690	15,816,580	15,891,680	16,074,470	16,319,790	16,510,470	16,775,300	16,885,860	17,101,980	17,272,930	17,449,710	17,613,470	17,608,540
No. with income of $50,000 & ove	3,184,380	3,452,530	3,658,120	3,886,710	4,183,800	4,500,200	4,892,420	5,275,080	5,631,680	5,676,250	5,889,220	6,248,790	6,549,360
% with income more than $50,000	20.6	21.8	23.0	24.2	25.6	27.3	29.2	31.2	32.9	32.9	33.7	35.5	37.2
No. Aged 65 Years & Older	3,758,110	3,880,110	3,900,870	3,981,550	4,047,910	4,134,590	4,232,680	4,315,860	4,444,490	4,575,000	4,702,800	4,887,810	5,085,500
No. with income of $50,000 & ove	289,370	326,830	338,360	365,350	408,330	454,700	523,480	599,100	662,210	688,090	736,280	818,860	913,870
% with income more than $50,000	7.7	8.4	8.7	9.2	10.1	11.0	12.4	13.9	14.9	15.0	15.7	16.8	18.0
Northwest Territories													
Total No. of Taxfilers & Dependents	25,490	27,000	27,310	28,180	28,280	28,110	28,610	28,780	29,140	29,390	29,640	29,850	29,770
No. with income of $50,000 & over	7,190	8,490	9,390	9,880	10,310	10,760	11,420	12,280	12,730	12,820	13,090	13,400	13,590
% with income more than $50,000	28.2	31.4	34.4	35.1	36.5	38.3	39.9	42.7	43.7	43.6	44.2	44.9	45.6
No. Aged 0 - 24 Years	4,260	4,560	4,560	4,940	4,830	4,800	4,900	5,000	5,140	5,100	5,040	5,060	4,920
No. with income of $50,000 & ove	80	150	180	230	240	270	310	390	450	430	430	430	440
% with income more than $50,000	1.9	3.3	3.9	4.7	5.0	5.6	6.3	7.8	8.8	8.4	8.5	8.5	8.9
No. Aged 25 - 64 Years	19,640	20,790	21,070	21,550	21,660	21,490	21,820	21,800	21,950	22,150	22,340	22,400	22,340
No. with income of $50,000 & ove	7,010	8,220	9,070	9,500	9,890	10,300	10,880	11,580	11,940	12,010	12,200	12,430	12,510
% with income more than $50,000	35.7	39.5	43.0	44.1	45.7	47.9	49.9	53.1	54.4	54.2	54.6	55.5	56.0
No. Aged 65 Years & Older	1,580	1,640	1,690	1,700	1,790	1,830	1,900	1,990	2,050	2,130	2,260	2,390	2,520
No. with income of $50,000 & ove	100	120	150	150	180	190	240	300	340	390	460	550	640
% with income more than $50,000	6.3	7.3	8.9	8.8	10.1	10.4	12.6	15.1	16.6	18.3	20.4	23.0	25.4
Nunavut													
Total No. of Taxfilers & Dependents	13,830	14,980	15,170	15,560	15,780	16,100	16,420	16,580	17,400	17,890	18,420	18,970	19,310
No. with income of $50,000 & over	3,040	3,740	4,090	4,240	4,430	4,610	4,920	5,140	5,550	5,770	6,140	6,460	6,750
% with income more than $50,000	22.0	25.0	27.0	27.2	28.1	28.6	30.0	31.0	31.9	32.3	33.3	34.1	35.0
No. Aged 0 - 24 Years	2,830	3,060	3,110	3,230	3,250	3,350	3,400	3,490	3,830	3,950	4,090	4,150	4,140
No. with income of $50,000 & ove	90	120	120	130	130	140	160	190	210	230	260	250	260
% with income more than $50,000	3.2	3.9	3.9	4.0	4.0	4.2	4.7	5.4	5.5	5.8	6.4	6.0	6.3
No. Aged 25 - 64 Years	10,300	11,230	11,330	11,530	11,730	11,940	12,150	12,220	12,630	12,950	13,330	13,740	14,040
No. with income of $50,000 & ove	2,920	3,580	3,930	4,050	4,250	4,410	4,680	4,840	5,240	5,410	5,710	6,030	6,240
% with income more than $50,000	28.3	31.9	34.7	35.1	36.2	36.9	38.5	39.6	41.5	41.8	42.8	43.9	44.4
No. Aged 65 Years & Older	690	690	740	800	810	820	870	880	940	990	1,010	1,080	1,140
No. with income of $50,000 & ove	40	40	50	60	50	70	70	100	110	140	170	200	250
% with income more than $50,000	5.8	5.8	6.8	7.5	6.2	8.5	8.0	11.4	11.7	14.1	16.8	18.5	21.9

Source: Statistics Canada CANSIM Table 111-0008, Taxfilers & Dependents with Income

4.0 NWT AND REGIONAL DEMOGRAPHICS: HISTORICAL CONTEXT

4.1 Demographic Patterns and Trends

Over the last twenty years the NWT has experienced only modest population growth, some 12% in total, virtually zero increase during the 2006-2011 period, and a projected modest increase to the year 2034. The following sections help frame the population projection and bed demand modeling by providing the context.

The NWT can be characterized by a population pattern and trend of '*increasing at a decreasing rate*' reflecting resource development cycles and the associated in and out-migration, such as the decrease of some 6% between 1996 and 2001, while the growth rate for the entire 1981 to 2011 period was some 38%. To illustrate the broad demographic patterns and trends it is useful to consider the growth rates for selected ten-year periods between 1981 and 2011:

- 1981-1991: 21%
- 1991-2001: 3%
- 2001-2011: 11%

4.1.1 Demographic Drivers

There are two significant demographic drivers that have and continue to shape the communities and regions, and impact the demand for GNWT public services policy choices (e.g., the location of LTC facilities): (i) growing concentration in the regional centres; and, (ii) the decreasing fertility (birth) rates, and the corresponding aging of the population.

Population Is Concentrating in Regional Centres

Historical patterns and trends of urbanization and intra-territorial migration continue to shape, and in some cases to re-shape, the size and distribution of people in communities and regions. The growing concentration of people in the regional centres has particularly significant implications. The key data sources are: NWT Bureau of Statistics (2011) and NWT Bureau of Statistics (2012).

In 1981, the share of the total NWT population by community type (Yellowknife; Regional centres [Fort Smith, Hay River and Inuvik]; and small communities) was:

- Yellowknife: 31%
- Regional centres: 28%
- Small communities: 41%

In 2011, some 70% of the total population lived in the four largest centres, and of that nearly half (20,000), lived in Yellowknife. In 2011, the share of the total NWT population by community type was:

- Yellowknife: 46%
- Regional centres: 23%
- Small communities: 32%

Over the last thirty years the concentration of total NWT population in Yellowknife grew to 46% (an increase of 48%), while the regional centres' population declined by 18% and the small communities experienced a decrease of 22%. The historical patterns are projected to continue for the next twenty years, where Yellowknife will see an increase to 48% in 2031, while the regional centres and the small communities will experience a decline to 22% and 30%, respectively.

This pattern of concentration in the larger regional centres is even more pronounced for the Aboriginal population. The share of total Aboriginal population in Yellowknife grew from 10% in 1981 to 21% in 2011 (an increase of 110%), and is projected to grow to 25% by 2031. Moreover, the shift in the population in small communities has important policy and programming implications. In 1981 the share of the total Aboriginal population living in the small communities was 67%. This share decreased to 54% by 2011 (a decline of 19%), with a further projected decline to 51% by 2031.

Population Is Aging

Although the NWT currently has a relatively low proportion of seniors, the 'share' has more than doubled and it has been the fastest growing age cohort over the last 20 years. Additionally, the number of those aged 45 to 64 has increased significantly, which is the result of the aging 'baby boom' generation (those born between 1946 and 1964). In contrast, the share of children under 15 years has been steadily decreasing, narrowing the population gap between seniors and younger generations. During the 1991 to 2011 period, the proportion of those aged 0 to 9 years fell by nearly 20%, while those aged 65 to 69 years increased by nearly 280%. The decrease in the number of children reflects a declining birth rate, while the growth in the older age groups reflects increased life expectancy for the general population.

From a broader perspective, the aging of the population is illustrated through the population projections that show the significant growth in the absolute and relative share of seniors in the NWT population. By 2034, the NWT will have some 5,200 persons aged 70+ years. This is an increase of some 3,500 (208%) over the 2014 to 2034 period.

By comparison, the total NWT population will be about 45,000. This is an increase of about 1,400 (some 3%) over the 2014 to 2034 period. Section 5 provides a detailed discussion of the projection trends and patterns. The following sections discuss in detail the structure and direction of the aging of the population at the territorial and regional level.

4.1.2 Population Ratios: Relevance and Implications

Population ratios are used to describe the degree of balance between two elements of the population (e.g., males vs. females). The ratio is normalized to refer to a standard unit of people, usually 100 persons. Dependency ratios indicate the potential effects of changes in population age structures for social and economic development, pointing out broad trends in social support needs. To illustrate the

relevance for Canada: between 1971 and 2006, the total demographic dependency ratio fell from 89 to 60 dependents per 100 workers. For every 100 working-age people, there were 15 seniors in 1971 and 21 in 2006. By 2056, it is projected that there will be 50 seniors for every 100 workers.

Population sex ratios are the ratios of males to females in the population (normalized to 100). The sex ratio at birth is fairly standard, around 105. Due to higher mortality among males, the sex ratio in the total population drops to between 95 to 97. The sex ratio tends to reduce as age increases, and among the elderly there is usually an excess of females. This is already evident at the NWT and regional levels.

The relevance of sex ratios to LTC is the resulting variance in increasing utilization rates by females in the oldest age cohorts. The following historical and projected population data includes observations of changing sex ratios. The sex ratio is calculated as: Population of males ÷ Population of females X 100. A ratio above 100 denotes an excess of males. A ratio below 100 denotes an excess of females.

The sex ratio imbalance in the 70+ years cohort can create challenges in programming, bed allocation, and facility configuration from the perspective of resident safety in potential cases where sharing of rooms (by male and female) could be required even on a short-term basis. This was identified as a concern in other jurisdictions where older facilities with larger rooms were renovated to contain two residents (in response to temporary high bed demand).

4.1.3 Patterns and Changes: 1996 to 2014

Prior to considering the population projections at the territorial level and the regional level (corresponding to the existing HSSA service area boundaries), it is informative to reflect on the historical demographic context for the period 1996 to 2014 (as the reference point from which projections were developed) – as it enables consideration of population changes from the perspective of where we have been, where we are and where we are heading demographically.

The historical context encompasses the following components: total population; seniors' cohorts (60+ years, and 70+ years); ethnicity; gender; and, population sex ratios. Section 4.3 presents the detailed analysis of the historical patterns and changes at the territorial and regional levels.

4.1.4 NWT Health Care Card Registration Data Alignment with Demographic Data

In the context of the evidence from migration data (see Section 4.2) and the critical role of population projections (see Section 5) for the seniors' cohorts, it is important to have confidence in the base numbers. The validation method used in the review involved cross-referencing selected demographic data with Health Care Card Registration data in order to validate the degree of alignment.

Staff in the Corporate Planning, Reporting and Evaluation Division, DHSS, prepared custom tables for NWT Health Care Card Registration data for 2006 and 2011 through to 2014. The established protocols for data confidentiality and privacy were maintained and as such no individual data was released. The Health Care Card data was examined for the NWT overall population and the 60+ years cohort. The data sets were not developed at the regional level given the small sample sizes.

The overall findings indicate a close alignment between the two data sets, which confirmed the validity of, and confidence in, the demographic baseline for LTC bed demand projections. The key observations from the data review are summarized below.

Key Observations

- The alignment between the population estimates and the NWT Health Care Card registration administrative data, as measured by the extent of any variance, has increased since 2006 (when the variance was 9.4%). The variance shows a generally declining trend since 2011 in both the NWT overall population and the 60+ years cohort;
- For the NWT overall, the data indicates there are typically *slightly less* Health Care Card registered than Statistics Canada official annual population estimates. The only sample year where this was not the case was in 2012, where there were *slightly more* Health Care Cards registered than population estimates;
- The variance between Health Care Card registrations and population estimates is likely as a result of the combined impact of (a) lag time in updating Health Care Card Registration administrative data resulting from the 3 month 'registration and de-registration period' policy); (b) out-migration from the NWT; (c) inherent small degree of administrative data errors; and, (d) potential under or over estimate by Statistics Canada in the official population estimates; and
- The seniors' cohort (60+ years) data indicates that is a close alignment (variance ranges of 1.9% to 3.7%) for the 2011 to 2014 period. In 2006 and 2011 there were *slightly less* Health Care Cards registered than population estimates. For the 2012-2014 period there were *slightly more* Health Care Cards registered than population estimates.

The following presents selected data for various years in respect of the alignment at the overall NWT population and the 60+ years cohort.

Reference Year: 2006

- NWT population: There were 39,117 Health Care Card Registrations and a population estimate of 43,178 persons. This is a variance of -4,061 or 9.4%.
- 60+ years cohort: There were 3,044 Health Care Card registrations and a population estimate of 3,248 persons. This is a variance of -204 or 6.3%. 2006 and 2011 are the only years (in the sample period covered by the review) where there were less Health Care Card Registrations than population in this age cohort. In each of the years in the 2011 -2014 period, there were *slightly more* Health Care Card registrations than population in the cohort.

Reference Year: 2011

- NWT population: There were 41,111 Health Care Card registrations and a population estimate of 43,501 persons. This is a variance of -2,390 or 5.5%.
- 60+ years cohort: There were 4,054 Health Care Card registrations and a population estimate of 4,140 persons. This is a variance of -86 or 2.1%.

Reference Year: 2012

- NWT population: There were 42,891 Health Care Card registrations and a population estimate of 43,639 persons. This is a variance of -748 or 1.7%.
- 60+ years cohort: There were 4,390 Health Care Card registrations and a population estimate of 4,307 persons. This is a variance of +83 or 1.9%.

Reference Year: 2013

- NWT population: There were 42,975 Health Care Card registrations and a population estimate of 43,841 persons. This is a variance of -866 or 2.0%.
- 60+ years cohort: There were 4,731 Health Care Card registrations and a population estimate of 4,576 persons. This is a variance of +155 or 3.4%.

Reference Year: 2014

- NWT population: There were 42,488 Health Care Card registrations and a population estimate of 43,623 persons. This is a variance of -1,135 or 2.6%.
- 60+ years cohort: There were 4,985 Health Care Card registrations and a population estimate of 4,807 persons. This is a variance of +178 or 3.7%.

4.2 Inter-Provincial Migration: Significance and Implications

4.2.1 NWT Migration Trends: 2001 to 2011: The Statistical Evidence

Examination of the detailed migration data from census data covering the 2001 to 2011 period provides a particularly important perspective regarding demographic drivers in the demand for LTC.

The NWT Bureau of Statistics prepared the following custom tabulations, which provide the source tables and the associated methodology. The source tables are not included in this report but are available upon request.

- Components of Migration (In and Out): Mobility Five Years Ago By Age Group and Sex, NWT, 2006 Census;
- Components of Migration (In and Out): Mobility Five Years Ago By Age Group and Sex, NWT, 2011 NHS;
- Five-year Interprovincial In-Migrants and Out-Migrants Profile, NWT, 2011 NHS;
- One-year Interprovincial In-Migrants and Out-Migrants Profile, NWT, 2011 NHS; and
- Statistics Canada. 2015. Table 051-0012. *Interprovincial Migrants, by Age and Sex, Canada, Provinces and Territories,* 1991-92 to 2013-14. CANSIM Table no. 051-0012. Note: CANSIM does not include any ethnicity variables data.

The key observations regarding migration during the 2001 to 2011 period are presented in terms of total population, gender, ethnicity and age (60+ years) and are summarized below. It should be noted that

some numbers may not total due to rounding and/or data suppression in the original data tables. Total territorial migration for the 2001 to 2011 period is summarized below.

Period	Out-Migration	In-Migration	Net Migration
2001-2006	7,040	6,360	-680
2006-2011	6,840	5,200	-1,640
2001-2011	13,880	11,560	-2,320

Summarized below are the data from the components of migration tables regarding total population, gender and ethnicity migration patterns over the 2001 to 2011 period. The analysis and observations on seniors' migration are presented in Section 4.2.2. The key observations are:

Total Population:

- 2001-2006: There was a net out-migration of 680 persons;
- 2006-2011: There was a net out-migration of 1,640 persons; and
- 2001-2011: There was a total out-migration of 13,880 persons and in-migration of 11,560 persons. The result being a *net out-migration* of 2,320 persons.

Gender:

- 2001-2006: Of the total 7,040 out-migrants, 3,580 (50.9%) were male and 3,465 (49.2%) were female;
- 2006-2011: Of the total 6,840 out-migrants, 3,600 (52.6%) were male and 3,240 (47.4%) were female; and
- 2001-2011: There was a total out-migration of 7,180 (51.7%) males and 6,700 (48.3%) females.

Ethnicity: In-Migrants:

- 2001-2006: Of the total 6,360 in-migrants, 1,295 (20.4%) were Aboriginal and 5,070 (79.7%) were non-Aboriginal;
- 2006-2011: Of the total 5,200 in-migrants, 1,080 (20.8%) were Aboriginal and 4,120 (79.2%) were non-Aboriginal; and
- 2001-2011: There was a total in-migration of 2,375 (20.5%) Aboriginal and 9,190 (79.5%) non-Aboriginal.

4.2.2 Senior Cohort Migration and Impact on LTC Demand

Net Out-Migration of NWT Seniors

The historical net out-migration of seniors – in fact *23 of the last 25* years have been net 'export' years for those aged 60+ years, and of those, over 80% of out-migrants were non-Aboriginal. The remaining (i.e., non-migrants) population was predominantly Aboriginal (as evident in the LTC facility utilization rates and LOS data in Section 6.5 to 6.7). As a result, the *working assumption* for analysis and demand modeling is that those leaving: (i) are likely to have a *relatively* better overall health status (than Aboriginal seniors who remain in the NWT) and also to have more economic resources (income, pensions, and assets); and, (ii) those who could potentially require LTC services are decreasing (or at least mitigating) LTC demand by leaving the NWT.

Migration of the 60+ Years Cohort

Migration of the 60+ years cohort for the 2001 to 2011 period is presented below and the overall observations are:

- There was a net out-migration of 410 persons aged 60+ years during the 2001 to 2006 period;
- There was a net out-migration of 390 persons during the 2006 to 2011 period; and
- There was an out-migration of 1,175 and in-migration of 375 persons. The result being a net out-migration of 800 persons aged 60+ years during the 2001 to 2011 period.

Period	Out-Migration	In-Migration	Net Migration
2001-2006	555	145	-410
2006-2011	620	230	-390
2001-2011	1,175	375	**-800**

In the context of the total population migration during the three reference periods, the following observations place the seniors' cohort into additional territorial scale perspective with respect to impacts on bed demand.

2001-2006

- Of the total 7,040 out-migrants, 555 (7.9%) were 60+ years;
- Of the total 6,360 in-migrants, 145 (2.3%) were 60+ years; and
- The result being a net out-migration of 410 persons 60+ years.

2006-2011

- Of the total 6,840 out-migrants, 620 (9.1%) were 60+ years;
- Of the total 5,200 in-migrants, 230 (4.4%) were 60+ years; and
- The result being a net out-migration of 390 of persons 60+ years.

2001-2011

- Of the total 13,880 out-migrants, 1,175 (8.5%) were 60+ years;
- Of the total 11,560 in-migrants, 375 (3.2%) were 60+ years; and
- The result being a net out-migration of 800 of persons 60+ years.

Based on supplementary cross-tabulations of migration data for the 60+ years cohort, the following observations were made:

- *23 of the last 25 years (92.0%) have experienced a net out-migration of those 60+ years;*
- The largest single group of out-migrants in the 60+ years cohort was the 60 to 64 years old cohort, that accounted for 48.7 % of the total migrants in 2006 and 55.9% in 2011;
- There was very little migration (in or out) in the 75+ years cohort;
- In general, there is gender parity in senior migrants (in and out), with males accounting for 51% of out-migrants and 52% of in-migrants;
- The net loss migration patterns in the seniors' cohort has continued during the 2012 to 2014 period; and
- The NWT Bureau of Statistics Population Projection Model includes specific age, gender and ethnicity assumptions, and as such migration patterns (trend assumptions and impacts) (i.e., have been accounted for in the current demographic projections for 2014 to 2034).

An additional source of the validity of the overall migration patterns for the NWT is Bohnert et al. (2015). The modeling assumption is based on FY 2007-08 to 2011-12 migration data that indicates *97.9% of all NWT immigrants (interprovincial and international) were less than 65 years old.*

Out Of Territory Placements: The GNWT provides Out Of Territory (OOT) placement of individuals who require specialized health and social services and facilities (to manage complex psychological and biological conditions). There are currently 72 OOT placements (based on July 2015 data), most of which are young adults. Of those, 8 are between the age of 50 to 59, and 1 is 68 years old. 93% of OOT placements are Aboriginal.

The GNWT does not have a current policy to actively repatriate clients from OOT placement. There are rarely opportunities to repatriate individuals back that could impact demand for LTC services. This is primarily based on the specialized services and/or facilities required by these individuals.

The impact of this migration factor is that those remaining seniors (both Aboriginal and non-Aboriginal) represent a population who will potentially create a higher LTC demand (at least for the next 10 to 15 years) than a *normal distribution curve* population in other jurisdictions (where inter-provincial migration and the Aboriginal population component are less of a factor). When considered from an ethnicity perspective, the health status variance is significant in informing LTC bed demand (as discussed in Section 3.4). Consequently, the bed ratio that is ultimately selected for the NWT (i.e., range of 115 to 120 beds per 1,000 population 70+ years) will need to accommodate and reflect this through a higher ratio than may otherwise be warranted for the growth of the 70+ years cohort, particularly over the next decade as the growth rate of the seniors' cohort 'peaks (see Section 5.4 for detailed analysis).

4.2.3 Growing the NWT Strategy 2014

In the context of the low growth and periods of actual decline in population over the last two decades, and the range of associated policy implications, the GNWT addressed this in the FY 2014-15 update. Subsequently, the GNWT released a strategy in June 2015 *Growing the NWT: Supporting Population Growth of the NWT* (NWT, Finance 2015).

The GNWT analysis of the demographic, fiscal and labour market context included the following observations which are relevant for projecting demand for and supply of Continuing Care Services.

- More people are leaving than coming into the NWT to live and work. This is the underlying challenge. The level of net migration has largely determined the low rate of population growth;
- Migration needs to be addressed from both sides: recruitment and retention. Retention of people already here and in the labour force may have more effect on achieving the target of 2,000 because one person leaving a job in the NWT for a job elsewhere often leaves with an entire family whereas people coming to the NWT for jobs tend to be younger and not yet starting a family;
- The 18-24 age group is the only group that is consistently near zero or positive for net migration. In combination with the negative net migration of children and adults of ages where they are likely to have children, migration trends by age group support the *'two-in, four-out' hypothesis* where young people come to the NWT looking for job opportunities (two-in), and once they enter the stage in their life where they have children they seek opportunities elsewhere (four-out);
- Population growth has important fiscal implications for the GNWT. The GNWT's major revenue sources like federal transfers and personal income tax are strongly correlated with population growth;
- The Territorial Formula Financing (TFF) Grant accounts for 65% of all GNWT revenues and the growth in the NWT population relative to Canada is one of the predominate determinants of the Grant's growth. Current projections for the TFF Grant are a fraction of its historical growth in part due to the slow growth in the NWT population*. Each additional person adds $30,000* to the TFF, not netting any commensurate increase to eligible revenues or increases in tax revenues;
- Similarly, the *Canada Health Transfer* and Canada Social Transfer, which account for 3 per cent of GNWT revenues, are also in part determined by relative population growth;
- Population also impacts own-source revenues, primarily through income and consumption taxes. The impact on own-source revenues depends on the income and consumption patterns of the population. For example, personal income and payroll tax revenues grow to a greater extent the greater the proportion of the persons employed. Alternatively, consumption tax revenues rise to the extent the population consumes a particular good such as fuel, cigarettes or liquor; and
- Population growth also requires additional expenditures in public services such as health care or education. The increased expenditures associated with providing public services to residents depend on their age, employment status, health status, community of residence and other characteristics.

The GNWT set a goal to increase the population by 2,000 people over the 2014-2019 period. This represents a five-year growth target of 4.6%, or 0.9% annually. The *Growing the NWT* strategy focuses on attracting skilled immigrant workers, primarily in the younger age cohorts.

Impact on the Seniors' Cohort

Assuming that the 2,000 person goal is reached by FY 2019-20, and that there would be zero immigrants 70+ years (consistent with historical patterns of migration). The demographic picture would be:

- Total NWT population in 2020 *excluding* the Growing The NWT increase: 44,005;
- *NWT population 70+ years*: 2,451 (5.6% of total territorial population);
- Total NWT population in 2020 *including* the 2,000 persons through the Growing The NWT increase: 46,005; and
- NWT population 70+ years: 2,451 (5.3% of total territorial population).

The only projected impact is that the 70+ years cohort '*share*' of the total population would decline statistically by about 0.3% to 5.3% (from 5.6%). There would still be a total of 2,451 persons aged 70+ years.

4.3 NWT Population Structure in Historical Context: 1996

The following sections present an historical demographic perspective covering the period 1996 to 2014 for the NWT and regions by examining total population, and the 60+ and 70+ years cohorts. The year 1996, which also coincided with the national census, is an important reference point as many of the continuing demographic patterns and trends had their substantive origin and trajectory set in that period.

4.3.1 Territorial Population

The following summarizes the demographic status of the NWT and regions total population, and the 60+ and 70+ years cohorts as was experienced in 1996. The regions with the highest and lowest, respectively, share of those 70+ years in 1996 were Dehcho at 4.8% and Yellowknife at 1.2%. The NWT share was 2.2%. The detailed data is contained in Appendix B, Tables B-1 and B-2.

Territorial Population, 1996

Total Territorial Population

- In 1996, the total NWT population was 41,741.
- There were 20,118 Aboriginal, representing 48.2% of the population. Non-Aboriginal persons totalled 21,623, representing 51.8% of the population.
- There were 21,731 males, representing 52.1% of the population. Females totalled 20,010, representing 47.9% of the population. The corresponding total population sex ratio was 108.6 (i.e., 108.6 males for every 100 females).

60+ Years Cohort

- There were 2,269 persons aged 60+ years, representing 5.4% of the total population.
- There were 1,442 Aboriginal persons, representing 63.6% of the population aged 60+ years. Non-Aboriginal persons totalled 827, representing 36.5% of this age cohort.

- There were 1,204 males, representing 53.1% of the population aged 60+ years. Females totalled 1,065, representing 46.9% of the population. The corresponding population sex ratio for this age cohort was 113.1.

70+ Years Cohort

- There were 903 persons aged 70+ years, representing **2.2%** of the total population.
- There were 651 Aboriginal persons, representing **72.1%** of the population aged 70+ years. Non-Aboriginal persons totalled 252, representing 27.9% of this age cohort.
- There were 459 males, representing 50.8% of the population aged 70+ years. Females totalled 444, representing 49.2% of the population. The corresponding population sex ratio for this age cohort was 103.4.

4.3.2 Regional Population

The regional boundaries used for statistical analysis correspond to the HSSA service areas.

Region: Yellowknife, 1996

The Yellowknife '*region*', for demographic analysis purposes, includes: Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, and 6 'unorganized' populations.

Total Regional Population

- Total regional population was 19,533, representing 46.8% of the total NWT population (41,741).
- There were 4,709 Aboriginal, representing 24.1% of the total regional population. Non-Aboriginal persons totalled 14,824, representing 75.9% of the population.
- There were 10,125 males, representing 51.8% of the population. Females totalled 9,408, representing 48.2% of the population. The corresponding total regional population sex ratio was 107.6.

60+ Years Cohort

- There were 684 persons aged 60+ years, representing 3.5% of the total regional population.
- There were 250 Aboriginal persons, representing 36.6% of the population aged 60+ years. Non-Aboriginal persons totalled 434, representing 63.5% of this age cohort.
- There were 361 males, representing 52.8% of the population aged 60+ years. Females totalled 323, representing 47.2% of the population. The corresponding population sex ratio for this age cohort was 111.8.

70+ Years Cohort

- There were 236 persons aged 70+ years, representing **1.2%** of the total regional population.
- There were 101 Aboriginal persons, representing 42.8% of the population aged 70+ years. Non-Aboriginal persons totalled 135, representing 57.2% of this age cohort.
- There were 118 males, representing 50.0% of the population aged 70+ years. Females totalled 118, representing 50.0% of the population. The corresponding population sex ratio for this age cohort was 100.0.

Region: Beaufort Delta, 1996

Total Regional Population

- Total regional population was 7,160, representing 17.2% of the total NWT population (41,741).
- There were 5,410 Aboriginal, representing 75.6% of the total regional population. Non-Aboriginal persons totalled 1,750, representing 24.4% of the population.
- There were 3,699 males, representing 51.7% of the population. Females totalled 3,461, representing 48.3% of the population. The corresponding total regional population sex ratio was 106.9.

60+ Years Cohort

- There were 444 persons aged 60+ years, representing 6.2% of the total regional population.
- There were 371 Aboriginal persons, representing 83.6% of the population aged 60+ years. Non-Aboriginal persons totalled 73, representing 16.4% of this age cohort.
- There were 231 males, representing 52.0% of the population aged 60+ years. Females totalled 213, representing 48.0% of the population. The corresponding population sex ratio for this age cohort was 108.5.

70+ Years Cohort

- There were 169 persons aged 70+ years, representing 2.4% of the total regional population.
- There were 151 Aboriginal persons, representing **89.4%** of the population aged 70+ years. Non-Aboriginal persons totalled 18, representing 10.7% of this age cohort.
- There were 83 males, representing 49.1% of the population aged 70+ years. Females totalled 86, representing 50.9% of the population. The corresponding population sex ratio for this age cohort was 96.5.

Region: Dehcho, 1996

Total Regional Population

- Total regional population was 2,994, representing 7.2% of the total NWT population.
- There were 2,400 Aboriginal, representing 80.2% of the total regional population. Non-Aboriginal persons totalled 594, representing 19.8% of the population.
- There were 1,575 males, representing 52.6% of the population. Females totalled 1,419, representing 47.4% of the population. The corresponding total regional population sex ratio was 111.0.

60+ Years Cohort

- There were 264 persons aged 60+ years, representing 8.8% of the total regional population.
- There were 239 Aboriginal persons, representing 90.5% of the population aged 60+ years. Non-Aboriginal persons totalled 25, representing 9.5% of this age cohort.
- There were 156 males, representing 59.1% of the population aged 60+ years. Females totalled 108, representing 40.9% of the population. The corresponding population sex ratio for this age cohort was 144.4.

70+ Years Cohort

- There were 143 persons aged 70+ years, representing **4.8%** of the total regional population.
- There were 136 Aboriginal persons, representing **95.1%** of the population aged 70+ years. Non-Aboriginal persons totalled 7, representing 4.9% of this age cohort
- There were 77 males, representing 53.9% of the population aged 70+ years. Females totalled 66, representing 46.1% of the population. The corresponding population sex ratio for this age cohort was 116.7.

Region: Fort Smith, 1996

Total Regional Population

- Total regional population was 2,560, representing 6.1% of the total NWT population.
- There were 1,511 Aboriginal, representing 59.0% of the total regional population. Non-Aboriginal persons totalled 1,049, representing 41.0% of the population.
- There were 1,325 males, representing 51.8% of the population. Females totalled 1,235, representing 48.2% of the population. The corresponding total regional population sex ratio was 107.3.

60+ Years Cohort

- There were 239 persons aged 60+ years, representing 9.3% of the total regional population.
- There were 154 Aboriginal persons, representing 64.4% of the population aged 60+ years. Non-Aboriginal persons totalled 85, representing 35.6% of this age cohort.
- There were 130 males, representing 54.4% of the population aged 60+ years. Females totalled 109, representing 45.6% of the population. The corresponding population sex ratio for this age cohort was 119.3.

70+ Years Cohort

- There were 85 persons aged 70+ years, representing 3.3% of the total regional population.
- There were 63 Aboriginal persons, representing 74.1% of the population aged 70+ years. Non-Aboriginal persons totalled 22, representing 25.9% of this age cohort.
- There were 40 males, representing 47.1% of the population aged 70+ years. Females totalled 45, representing 52.9% of the population. The corresponding population sex ratio for this age cohort was 88.9.

Region: South Slave (Hay River), 1996

Total Regional Population

- Total regional population was 4,146, representing 9.9% of the total NWT population.
- There were 1,738 Aboriginal, representing 41.9% of the total regional population. Non-Aboriginal persons totalled 2,408, representing 58.1% of the population.
- There were 2,180 males, representing 52.6% of the population. Females totalled 1,966, representing 47.4% of the population. The corresponding total regional population sex ratio was 110.9.

60+ Years Cohort

- There were 277 persons aged 60+ years, representing 6.7% of the total regional population.
- There were 106 Aboriginal persons, representing 38.3% of the population aged 60+ years. Non-Aboriginal persons totalled 171, representing 61.7% of this age cohort.
- There were 157 males, representing 56.7% of the population aged 60+ years. Females totalled 120, representing 43.3% of the population. The corresponding population sex ratio for this age cohort was 130.8.

70+ Years Cohort

- There were 96 persons aged 70+ years, representing 2.3% of the total regional population.
- There were 42 Aboriginal persons, representing 43.8% of the population aged 70+ years. Non-Aboriginal persons totalled 54, representing 56.3% of this age cohort.
- There were 52 males, representing 54.2% of the population aged 70+ years. Females totalled 44, representing 45.8% of the population. The corresponding population sex ratio for this age cohort was 118.2.

Region: Sahtu, 1996

Total Regional Population

- Total regional population was 2,741, representing 6.6% of the total NWT population.
- There were 1,953 Aboriginal, representing 71.3% of the total regional population. Non-Aboriginal persons totalled 788, representing 28.8% of the population.
- There were 1,427 males, representing 52.1% of the population. Females totalled 1,314, representing 47.9% of the population. The corresponding total regional population sex ratio was 108.6.

60+ Years Cohort

- There were 148 persons aged 60+ years, representing 5.4% of the total regional population.
- There were 126 Aboriginal persons, representing 85.1% of the population aged 60+ years. Non-Aboriginal persons totalled 22, representing 14.9% of this age cohort.
- There were 55 males, representing 37.2% of the population aged 60+ years. Females totalled 93, representing 62.8% of the population. The corresponding population sex ratio for this age cohort was 59.14.

70+ Years Cohort

- There were 67 persons aged 70+ years, representing 2.4% of the total regional population.
- There were 59 Aboriginal persons, representing 88.1% of the population aged 70+ years. Non-Aboriginal persons totalled 8, representing 11.9% of this age cohort.
- There were 25 males, representing 37.3% of the population aged 70+ years. Females totalled 42, representing 62.7% of the population. The corresponding population sex ratio for this age cohort was 59.5.

Region: Tlicho, 1996

Total Regional Population

- Total regional population (total of the 0 to 59 years cohort and the 60+ years cohort) was 2,607, representing 6.3% of the total NWT population.
- There were 2,397 Aboriginal, representing 91.9% of the total regional population. Non-Aboriginal persons totalled 210, representing 8.1% of the population.
- There were 1,400 males, representing 53.7% of the population. Females totalled 1,207, representing 46.3% of the population. The corresponding total regional population sex ratio was 116.0.

60+ Years Cohort

- There were 213 persons aged 60+ years, representing 8.2% of the total regional population.
- There were 196 Aboriginal persons, representing 92.0% of the population aged 60+ years. Non-Aboriginal persons totalled 17, representing 8.0% of this age cohort.
- There were 114 males, representing 53.5% of the population aged 60+ years. Females totalled 99, representing 46.5% of the population. The corresponding population sex ratio for this age cohort was 115.2.

70+ Years Cohort

- There were 107 persons aged 70+ years, representing 4.1% of the total regional population.
- There were 99 Aboriginal persons, representing 92.5% of the population aged 70+ years. Non-Aboriginal persons totalled 8, representing 7.5% of this age cohort.
- There were 64 males, representing 59.8% of the population aged 70+ years. Females totalled 43, representing 40.2% of the population. The corresponding population sex ratio for this age cohort was 148.8.

4.4 NWT Population Structure: 2014

The following summarizes the demographic status of the NWT and regions total population, the 60+ years cohort, and the 70+ years cohort as was experienced in 2014. The regions with the highest and lowest, respectively, share of those 70+ years in 2014 were Fort Smith at 6.3% and Yellowknife at 2.5%. The NWT share was 3.9%.

4.4.1 Territorial Population, 2014

Total Population

- Total NWT population was 43,623.
- There were 22,425 Aboriginal persons, representing 51.4% of the population. Non-Aboriginal persons totalled 21,198, representing 48.6% of the population.
- There were 22,208 males, representing 50.9% of the population. Females totalled 21,415, representing 49.1% of the population. The corresponding total population sex ratio was 103.7 (i.e., 103.7 males for every 100 females).

60+ Years Cohort

- There were 4,807 persons aged 60+ years, representing 11.0% of the total population.
- There were 2,391 Aboriginal persons, representing 49.7% of the population aged 60+ years. Non-Aboriginal persons totalled 2,416, representing 50.3% of this age cohort.
- There were 2,456 males, representing 51.1% of the population aged 60+ years. Females totalled 2,351, representing 48.9% of the population. The corresponding population sex ratio for this age cohort was 104.5.

70+ Years Cohort

- There were 1,687 persons aged 70+ years, representing **3.9%** of the total population.
- There were 1,009 Aboriginal persons, representing **59.8%** of the population aged 70+ years. Non-Aboriginal persons totalled 678, representing 40.2% of this age cohort.
- There were 781 males, representing 46.3% of the population aged 70+ years. Females totalled 906, representing 53.7% of the population. The corresponding population sex ratio for this age cohort was 86.2.

4.4.2 Regional Population, 2014

The regional boundaries used for statistical analysis correspond to the HSSA service areas.

Region: Yellowknife, 2014

Total Regional Population

- Total regional population was 21,293, representing 48.8% of the total NWT population (43,623).
- There were 5,974 Aboriginal, representing 28.1% of the total regional population. Non-Aboriginal persons totalled 15,319, representing 71.9% of the population.
- There were 10,772 males, representing 50.6% of the population. Females totalled 10,521, representing 49.4% of the population. The corresponding total regional population sex ratio was 102.4.

60+ Years Cohort

- There were 1,987 persons aged 60+ years, representing 9.3% of the total regional population.
- There were 479 Aboriginal persons, representing 24.1% of the population aged 60+ years. Non-Aboriginal persons totalled 1,508, representing 75.9% of this age cohort.
- There were 1,029 males, representing 51.8% of the population aged 60+ years. Females totalled 958, representing 48.2% of the population. The corresponding population sex ratio for this age cohort was 107.4.

70+ Years Cohort

- There were 536 persons aged 70+ years, representing **2.5%** of the total regional population.
- There were 157 Aboriginal persons, representing **29.3%** of the population aged 70+ years. Non-Aboriginal persons totalled 379, representing 70.7% of this age cohort.
- There were 245 males, representing 45.7% of the population aged 70+ years. Females totalled 291, representing 54.3% of the population. The corresponding population sex ratio for this age cohort was 84.2.

Region: Beaufort Delta, 2014

Total Regional Population

- The total regional population was 6,898, representing 15.8% of the total NWT population (43,623).
- There were 5,521 Aboriginal, representing 80.0% of the total regional population. Non-Aboriginal persons totalled 1,377, representing 20.0% of the population.
- There were 3,472 males, representing 50.3% of the population. Females totalled 3,426, representing 49.7% of the population. The corresponding total regional population sex ratio was 101.3.

60+ Years Cohort

- There were 788 persons aged 60+ years, representing 11.4% of the total regional population.
- There were 630 Aboriginal persons, representing 80.0% of the population aged 60+ years. Non-Aboriginal persons totalled 158, representing 20.1% of this age cohort.
- There were 388 males, representing 49.2% of the population aged 60+ years. Females totalled 400, representing 50.8% of the population. The corresponding population sex ratio for this age cohort was 97.0.

70+ Years Cohort

- There were 326 persons aged 70+ years, representing 4.7% of the total regional population.
- There were 288 Aboriginal persons, representing 88.3% of the population aged 70+ years. Non-Aboriginal persons totalled 38, representing 11.7% of this age cohort.
- There were 151 males, representing 46.3% of the population aged 70+ years. Females totalled 175, representing 53.7% of the population. The corresponding population sex ratio for this age cohort was 86.3.

Region: Dehcho, 2014

Total Regional Population

- Total regional population was 3,483, representing 8.0% of the total NWT population.
- There were 2,939 Aboriginal, representing 84.4% of the total regional population. Non-Aboriginal persons totalled 544, representing 15.6% of the population.
- There were 1,812 males, representing 52.0% of the population. Females totalled 1,671, representing 48.0% of the population. The corresponding total regional population sex ratio was 108.4.

60+ Years Cohort

- There were 469 persons aged 60+ years, representing 13.5% of the total regional population.
- There were 385 Aboriginal persons, representing 82.1% of the population aged 60+ years. Non-Aboriginal persons totalled 84, representing 17.9% of this age cohort.
- There were 234 males, representing 49.9% of the population aged 60+ years. Females totalled 235, representing 50.1% of the population. The corresponding population sex ratio for this age cohort was 99.6.

70+ Years Cohort

- There were 180 persons aged 70+ years, representing 5.2% of the total regional population.
- There were 164 Aboriginal persons, representing 91.1% of the population aged 70+ years. Non-Aboriginal persons totalled 16, representing 8.9% of this age cohort.
- There were 87 males, representing 48.3% of the population aged 70+ years. Females totalled 93, representing 51.7% of the population. The corresponding population sex ratio for this age cohort was 93.6.

Region: Fort Smith, 2014

Total Regional Population

- Total regional population was 2,536, representing 5.8% of the total NWT population.
- There were 1,509 Aboriginal, representing 59.5% of the total regional population. Non-Aboriginal persons totalled 1,027, representing 40.5% of the population.
- There were 1,292 males, representing 51.0% of the population. Females totalled 1,244, representing 49.1% of the population. The corresponding total regional population sex ratio was 103.9.

60+ Years Cohort

- There were 387 persons aged 60+ years, representing 15.3% of the total regional population.
- There were 196 Aboriginal persons, representing 50.7% of the population aged 60+ years. Non-Aboriginal persons totalled 191, representing 49.4% of this age cohort.
- There were 195 males, representing 50.4% of the population aged 60+ years. Females totalled 192, representing 49.6% of the population. The corresponding population sex ratio for this age cohort was 101.6.

70+ Years Cohort

- There were 159 persons aged 70+ years, representing **6.3%** of the total regional population.
- There were 81 Aboriginal persons, representing **50.9%** of the population aged 70+ years. Non-Aboriginal persons totalled 78, representing 49.1% of this age cohort.
- There were 80 males, representing 50.3% of the population aged 70+ years. Females totalled 79, representing 49.7% of the population. The corresponding population sex ratio for this age cohort was 101.3.

Region: South Slave (Hay River), 2014

Total Regional Population

- Total regional population was 3,879, representing 8.9% of the total NWT population.
- There were 1,755 Aboriginal, representing 45.2% of the total regional population. Non-Aboriginal persons totalled 2,124, representing 54.8% of the population.
- There were 2,009 males, representing 51.8% of the population. Females totalled 1,870, representing 48.2% of the population. The corresponding total regional population sex ratio was 107.4.

60+ Years Cohort

- There were 608 persons aged 60+ years, representing 15.7% of the total regional population.
- There were 226 Aboriginal persons, representing 37.2% of the population aged 60+ years. Non-Aboriginal persons totalled 382, representing 62.8% of this age cohort.
- There were 317 males, representing 52.1% of the population aged 60+ years. Females totalled 291, representing 47.9% of the population. The corresponding population sex ratio for this age cohort was 108.9.

70+ Years Cohort

- There were 232 persons aged 70+ years, representing 6.0% of the total regional population.
- There were 94 Aboriginal persons, representing 40.5% of the population aged 70+ years. Non-Aboriginal persons totalled 138, representing 59.5% of this age cohort.
- There were 100 males, representing 43.1% of the population aged 70+ years. Females totalled 132, representing 56.9% of the population. The corresponding population sex ratio for this age cohort was 75.8.

Region: Sahtu, 2014

Total Regional Population

- Total regional population was 2,560, representing 5.9% of the total NWT population.
- There were 1,919 Aboriginal, representing 75.0% of the total regional population. Non-Aboriginal persons totalled 641, representing 25.0% of the population.
- There were 1,340 males, representing 52.3% of the population. Females totalled 1,220, representing 47.7% of the population. The corresponding total regional population sex ratio was 109.8.

60+ Years Cohort

- There were 302 persons aged 60+ years, representing 11.8% of the total regional population.
- There were 228 Aboriginal persons, representing 75.5% of the population aged 60+ years. Non-Aboriginal persons totalled 74, representing 24.5% of this age cohort.
- There were 163 males, representing 54.0% of the population aged 60+ years. Females totalled 139, representing 46.0% of the population. The corresponding population sex ratio for this age cohort was 117.3.

70+ Years Cohort

- There were 126 persons aged 70+ years, representing 4.9% of the total regional population.
- There were 106 Aboriginal persons, representing 84.1% of the population aged 70+ years. Non-Aboriginal persons totalled 20, representing 15.9% of this age cohort.
- There were 65 males, representing 51.6% of the population aged 70+ years. Females totalled 61, representing 48.4% of the population. The corresponding population sex ratio for this age cohort was 106.6.

Region: Tlicho, 2014

Total Regional Population

- Total regional population was 2,974, representing 6.8% of the total NWT population.
- There were 2,808 Aboriginal, representing 94.4% of the total regional population. Non-Aboriginal persons totalled 166, representing 5.6% of the population.
- There were 1,511 males, representing 50.8% of the population. Females totalled 1,463, representing 49.2% of the population. The corresponding total regional population sex ratio was 103.3.

60+ Years Cohort

- There were 266 persons aged 60+ years, representing 8.9% of the total regional population.
- There were 247 Aboriginal persons, representing 92.9% of the population aged 60+ years. Non-Aboriginal persons totalled 19, representing 7.1% of this age cohort.
- There were 130 males, representing 48.9% of the population aged 60+ years. Females totalled 136, representing 51.1% of the population. The corresponding population sex ratio for this age cohort was 95.6.

70+ Years Cohort

- There were 128 persons aged 70+ years, representing 4.3% of the total regional population.
- There were 119 Aboriginal persons, representing 93.0% of the population aged 70+ years. Non-Aboriginal persons totalled 9, representing 7.0% of this age cohort.
- There were 53 males, representing 41.4% of the population aged 70+ years. Females totalled 75, representing 58.6% of the population. The corresponding population sex ratio for this age cohort was 70.7.

5.0 NWT AND REGIONAL DEMOGRAPHIC PROJECTIONS: 2014 TO 2034

5.1 NWT Bureau of Statistics Population Projection Model

The DHSS collaborated with the NWT Bureau of Statistics to develop population projections for the 2014 to 2034 period at the territorial and regional level. Specific variables and age cohorts were identified as the basis for projections. While the overall demographic context was addressed, there was particular focus on the *seniors*' cohorts to support the review. Specifically, there were three distinct seniors' cohorts modeled – with selected age sub-groups (60+ years, 65+ years, and 70+ years); Gender; and, Ethnicity (Aboriginal and non-Aboriginal). The modeling of the age cohorts (other than the 70+ years) was completed to inform policy and programming across the continuing care continuum.

NWT Population Projection Model Assumptions

The NWT Bureau of Statistics model projections were completed in July 2015 and are contained in Appendix C, Tables C-1 and C-2. The population projections are based on a calendar year. It is recommended that given the LTC Program use of a FY reference, the projection years be interpreted as falling into the relevant FY (i.e., 2016 means FY 2016-17).

The NWT Bureau of Statistics uses the *Cohort Component Method* for population projections. The method incorporates the three components of population change in the model (mortality, fertility and migration) and is the standard projection method used by all jurisdictions. The model projections are based on a single comprehensive scenario, rather than the multiple scenarios developed by Statistics Canada.
Summarized below are the components and underlying modeling assumptions used in the population projections.

Mortality

- To project the mortality component, it was assumed that mortality would remain constant over the next 20 years (2015-2034). As such, rates were averaged over the past 11 years (i.e. 2004-2014) separately for males and females by each age group (i.e. < 1, 1-4, 5-14, 15-29, 30-49, 50-59, 60-64, 65-69, 70-79, 80+).

Fertility

- To project the fertility component, it was assumed that the observed historical trends for each age group and ethnicity would continue over the next 20 years. Fertility rates were projected separately for Aboriginal and non-Aboriginal females by age groups (i.e. 15-19, 20-24, 25-29, 30-34, 35-39, 40-44) based on the past 21 years of historical age-specific fertility rates (i.e. 1994 to 2014).

Migration

In-Migration *(movement of people into the NWT from other provinces)*

- To project future patterns of in-migration, the same method was used.
- For both, Aboriginals and non-Aboriginals, it was assumed that rates would remain constant in the future. Rates were averaged over 17 years (1998 to 2014) for each age group (i.e. <5, 5-14, 15-19, 20-24, 25-29, 30-49, 50-59, 60-64, 65-69, 70+). The average rates for each age group were expected to continue over the projection period at a constant level. Regression models were used to extrapolate the expected future trends based on the observed historical age-specific migration rates.

Out-Migration *(movement of people out of the NWT into other provinces)*

- To project future patterns of out-migration, the same methods were used as above.
- For both, Aboriginals and non-Aboriginals, it was assumed that rates would remain constant in the future. Rates were averaged over 17 years (1998 to 2014) for each age group (i.e. <5, 5-14, 15-19, 20-24, 25-29, 30-49, 50-59, 60-64, 65-69, 70+). The average rate was expected to continue over the projection period at a constant level. Regression models were used to extrapolate the expected future trends based on the observed historical age-specific migration rates.

Intra-Territorial Migration *(movement of people between communities in the NWT)*

- To estimate the patterns of intra-territorial migration for community projections, the net difference of movement in and out of each community was used. It was assumed that the pattern of movement between communities remains stable over time. As such, net migration for each community was averaged over the past five years (2009-10 to 2013-14). Average net intra-territorial migration was expected to remain constant over the projection period.

Given that the primary client group for the LTC Program are seniors – those aged 60+ years, additional analysis was completed for historical migration patterns of seniors and the impact on bed demand assumptions and projections (see Section 4.2 for detailed discussion regarding migration and its impact on LTC bed demand).

5.2 Statistics Canada Population Projection Model

Bohnert et al. (2015a) prepared for Statistics Canada an updated population projections model (Statistics Canada Catalogue no. 91-620-X). The model includes seven (7) scenarios encompassing a low, medium and high growth rates, based on various trend periods with respect to birth rates, death rates and migration.

The Statistics Canada's model includes an important statement of clarity regarding projections, they: *"are not intended to be interpreted as predictions* about what will happen in the future. They *should instead be understood as an exercise designed to investigate what the Canadian population might become in the years ahead according to various scenarios of possible future change*. For this reason, Statistics Canada always *publishes several scenarios and formulates several explicit assumptions regarding the main components of population growth."*

Statistics Canada, like the NWT Bureau of Statistics and most statistical agencies, produce their official projections with the cohort-component model. The detailed methodology and assumptions are contained in Bohnert et al. 2015b.

It should be noted that there are some important differences in assumptions and the specificity of certain variables between the NWT Bureau of Statistics model and the Statistics Canada model. The NWT Bureau of Statistics model explicitly includes ethnicity, and adjusts for age specific migration, and makes detailed projections at a regional level. The Statistics Canada model does not, in part as a result of its primary (and appropriate) focus on a larger population scale (i.e., national and provincial/territorial).

While both models are recognized as valid and reliable, the level of specificity to the NWT context and population structure, is the rationale for using the NWT Bureau of Statistics model as the official population projection model for the review.

5.3 Population Projection Models and Results: Comparison and Key Observations

A key part of the comprehensive approach to demographic analysis to inform the review and bed demand projection was to make use of the best information available. This included comparing and assessing the overall results from the NWT Bureau of Statistics model and the Statistics Canada model.

For the NWT, the Statistics Canada model projects overall population change characterized by scenarios that range from little growth to declining total population through the period 2014 to 2034. Overall, the NWT Bureau of Statistics model and the Statistics Canada model are generally aligned regarding the overall population changes and are relatively consistent with respect to projections for seniors (in terms of absolute numbers and as a percentage of the total population). The following are selected observations at the Canada and provincial/territorial level with respect to the population projections by the NWT Bureau of Statistics and Statistics Canada.

Observations from the Population Projection Models

- Interprovincial migration is the single largest component and modeling assumption at both the national and NWT level. Statistics Canada model projections for the NWT indicate it will experience negative new interprovincial migration under five of the seven scenarios;

- The Statistics Canada model projects the NWT population projections to ***2023*** may range from a low of 42,600 to a high of 46,800 persons. The NWT Bureau of Statistics model projection is 44,156, representing a variance range of -3.5% to +6.0% from the Statistics Canada projection;

- The Statistics Canada model projects the NWT population to ***2034*** will range from a low of 39,600 to a high of 48,600 persons. The NWT Bureau of Statistics model projection is 45,012. This represents a variance range of -12.0% to +8.0% from the Statistics Canada projection;

- The Statistics Canada and the NWT Bureau of Statistics projection for those aged 60+ years are relatively more aligned. NWT population projections for those 60+ years to ***2023*** range from a low of 7,000 to a high of 7,400 persons. The NWT Bureau of Statistics model projection is 7,661, representing a variance range of -8.6% to -3.4% between the projections of the two models;

- The Statistics Canada NWT projections for those 60+ years to ***2034*** range from a low of 7,800 to a high of 8,700 persons. The NWT Bureau of Statistics model projection is 9,209, representing a variance range of -15.4% to -5.5% between the projections of the two models;

- The Statistics Canada NWT projection for those 60+ years to 2023 as a percentage of the total population is a low of 15.7% to a high of 16.4%, which represents a small variance of 0.7%. The corresponding figure from the NWT Bureau of Statistics model is 17.4%; and

- The Statistics Canada NWT projection for those 60+ years to 2034 as a *percentage of the total population* is a low of 18.4% to a high of 20.1%, which represents a relatively small variance of 1.7%. The corresponding figure from the NWT Bureau of Statistics model is 20.5%.

5.3.1 Key Observations: Canada Level Projections

The national level population projections and trends which have some overlap variance with the NWT projection period of 2014 to 2034 are included in order to give additional context and points of reference for the NWT demographic drivers and trends. The central observations are provided below.

Canada Level Projections Observations

- The proportion of seniors (aged 65+ years) in the population would increase from 15.3% in 2013 to between 23.8% and 27.8% in 2063. The increase in the share of seniors would be ***most pronounced between 2013 and 2030***, a period during which all members of the baby boom would reach 65+ years. *Baby boomers* are people born during the demographic post–World War II *baby boom* between the years 1946 (first year of the boom) and 1964 (last year of the boom, after which fertility rates declined), therefore: the first ones born in 1946 + age 65 = 2011 as the first year, and the last ones born in 1964 + age 65 = 2029 as the last (peak) year;

- Canada's demographic ***dependency ratio*** (the number of persons aged 14 years and under or 65+ years per 100 persons aged 15 to 64 years) would increase in all projection scenarios, from 45.9 in 2013 to between 69.7 and 71.6 in 2063;

- According to the medium-growth (M1) scenario, *seniors (65+ years) will surpass children (aged 14 and under) in number by 2015*, and by 2063, there would be 26.3 children and 43.4 seniors per 100 persons aged 15 to 64 years. This has in fact occurred. On September 29, 2015, Statistics Canada reported that based in July 2015 population estimates: "*Canada met a milestone that demographers have seen coming for a long time. In the year ended in July, the population of people 65+ years is now larger than the number of children under 15. There were 5,780,900 Canadians 65+ years on July 1. That compares to an under-15 population of 5,749,400. In percentage terms, 16.1% of Canadians were in the 65+ years group in July, with under-15s accounting for just 16% of the population*";

- The number of *older seniors (80+ years)* would continue to increase rapidly in the coming years, *particularly between 2026 and 2045* as the baby-boom cohort enters these ages. According to the projection scenarios, the *population 80+ years would increase from 1.4 million in 2013 to between 4.0 million and 4.9 million by 2045*, representing about 10% of the total Canadian population;

- The sex ratio composition of older seniors would also change considerably: among persons 80+ years, there would be about 83 males per 100 females in 2063 in all scenarios, up from 61 in 2013; and

- The number of centenarians (100+ years) would multiply nine times over the next 50 years, from 6,900 in 2013 to 62,200 in 2063 according to the medium-growth scenario.

5.3.2 Key Observations: Provinces and Territories Projections

The following key observations are provided to set the NWT demographic dynamics into a larger context to inform policy and program decisions.

NWT Level Projections Observations

- Average annual growth rates would vary considerably among the provinces and territories. While most provinces and territories would experience positive population growth in all scenarios, some would experience population decrease in certain scenarios: under the low-growth scenario, for example, Newfoundland and Labrador, Nova Scotia, New Brunswick, *Yukon and the NWT would experience negative annual population growth over the next 25 years*.

- As population aging continues, all provinces and territories would see an increase in the proportion of the population that is 65+ years in the coming years. This share would vary widely however, from a low of 7.7% for Nunavut to a high of 35.9% for Newfoundland and Labrador in 2038.

- With the exception of Nunavut, the provinces and territories could experience a considerable increase in the median age of their populations over the next 25 years. Among the provinces, the median age in 2038 could range between 38.3 years in Alberta to 54.5 years in Newfoundland and Labrador.

5.4 Population Projections and Analysis of Change: NWT, 2014 to 2034

To complete the demographic context (i.e., overall population changes and projections) in the preceding sections, it is useful to examine not only the ***overall changes*** over the 2014 to 2034 projection horizon but also to take a closer look at changes (absolute and percentage) ***between selected projection periods*** in order to inform bed demand projections as well as policy and program decisions within shorter time frames.

Tables 5.1 to 5.6 and Figures 5.1.1 to 5.6.2 present in numerical and graphic format, population projections and associated changes for the total NWT and Yellowknife region population, as well as the 60+, 65+ and 70+ years cohorts. The corresponding detailed analysis of projections and changes for the Yellowknife region are provided in Appendix D, Tables D-1 to D-6 and Figures D-1.1 to D-6.2. The regional population projection details are contained in Appendix C, Tables C-1 and C-2. This level of detailed demographic data was specifically developed to support and inform policy discussion and decisions regarding the LTC Program and the *NWT Continuing Care Framework* (2008).

Table 5.1: Population Projections and Analysis of Change, Absolute Numbers and Percent, NWT Total Population, 2014-2034

Population Cohort	Change Over Period													
	2014-2017		2017-2020		2020-2023		2023-2026		2026-2029		2029-2032		2032-2034	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	207	0.47	175	0.40	151	0.34	138	0.31	156	0.35	279	0.63	283	0.63
60 Years+	811	16.87	1,015	18.07	1,028	15.50	706	9.22	338	4.04	344	3.95	160	1.77
60 to 64	249	12.91	377	17.32	297	11.63	-185	-6.49	-432	-16.20	-99	-4.43	-36	-1.69
65 Years+	562	19.52	638	18.54	731	17.92	891	18.52	770	13.51	443	6.85	196	2.83
65 to 69	258	21.64	178	12.28	226	13.88	365	19.69	151	6.80	-261	-11.01	-206	-9.77
70 Years+	**304**	**18.02**	**460**	**23.10**	**505**	**20.60**	**526**	**17.79**	**619**	**17.78**	**704**	**17.17**	**402**	**8.37**
70 to 74	147	20.85	220	25.82	206	19.22	120	9.39	257	18.38	294	17.76	47	2.41
75 to 79	51	10.87	100	19.23	194	31.29	197	24.20	154	15.23	138	11.85	134	10.28
80 to 84	36	12.41	61	18.71	48	12.40	122	28.05	114	20.47	144	21.46	98	12.02
85 to 89	36	25.71	43	24.43	10	4.57	50	21.83	42	15.05	73	22.74	66	16.75
90 to 94	25	40.32	11	12.64	18	18.37	18	15.52	20	14.93	14	9.09	32	19.05
95+	9	42.86	25	83.33	29	52.73	19	22.62	32	31.07	41	30.37	25	14.20

Figure 5.1.1: Population Projections and Analysis of Change, Absolute Numbers, NWT Total Population, 2014-2034

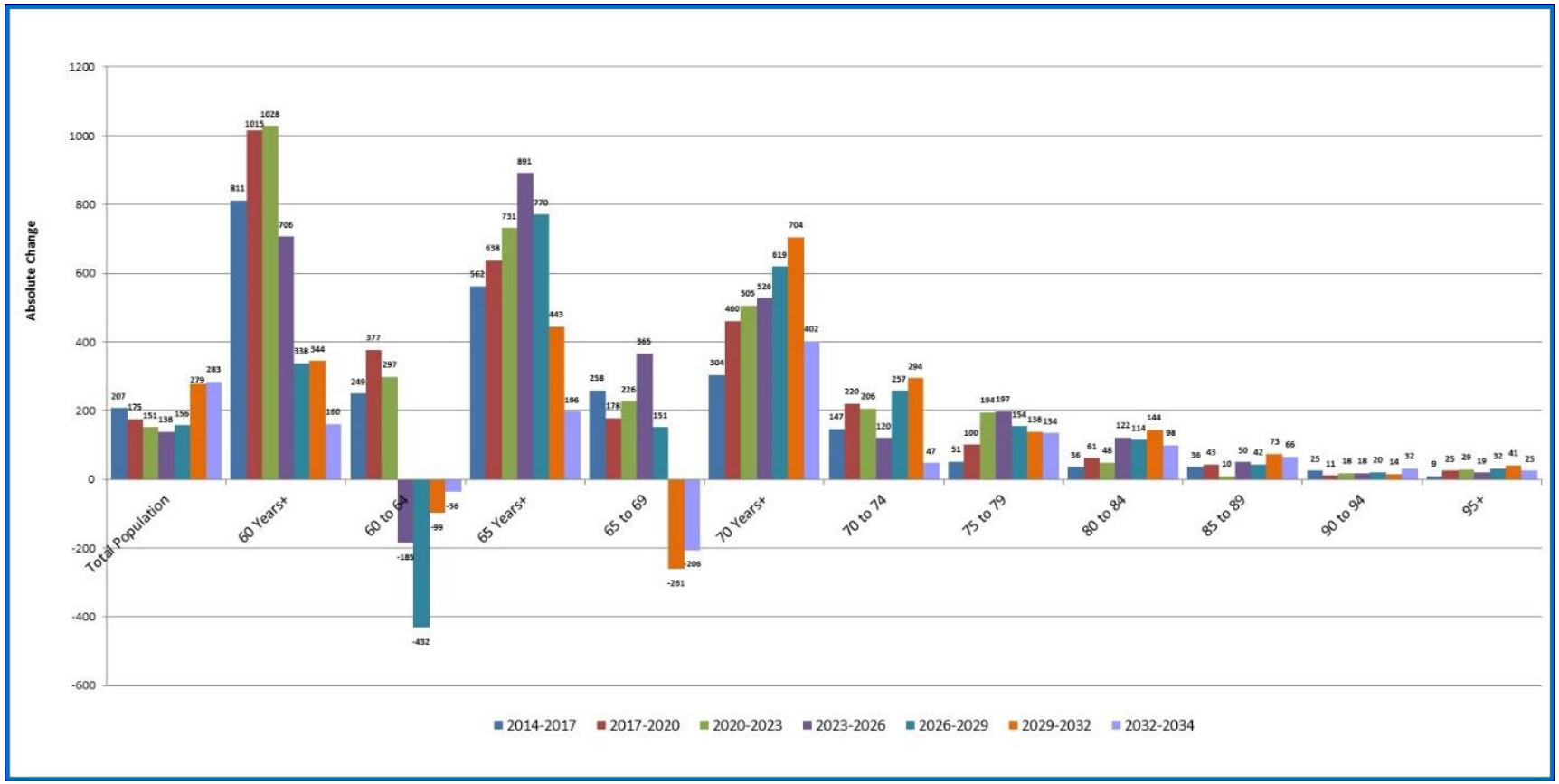


Figure 5.1.2: Population Projections and Analysis of Change, Percentage Change, NWT Total Population, 2014-2034

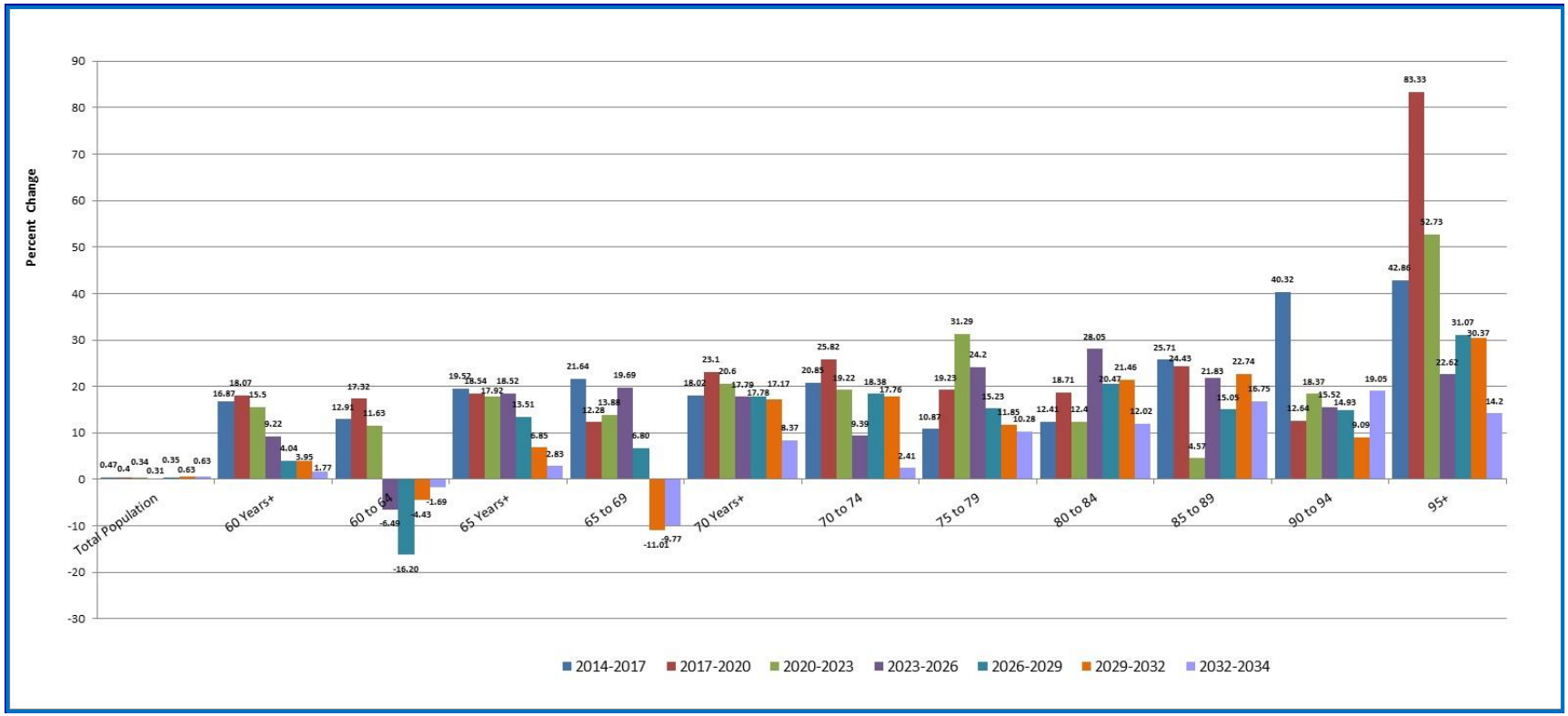


Table 5.2: Population Projections and Analysis of Change, NWT Total Population, 2014-2023 and 2014-2034

Population Cohort	2014		2023		Change Over Period 2014-2023		2034		Change Over Period 2014-2034	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	43,623	100.00	44,156	100.00	533	1.22	45,012	100.00	1,389	3.18
60 Years+	4,807	11.02	7,661	17.35	2,854	59.37	9,209	20.46	4,402	91.57
60 to 64	1,928	4.42	2,851	6.46	923	47.87	2,099	4.66	171	8.87
65 Years+	2,879	6.60	4,810	10.89	1,931	67.07	7,110	15.80	4,231	146.96
65 to 69	1,192	2.73	1,854	4.20	662	55.54	1,903	4.23	711	59.65
70 Years+	**1,687**	**3.87**	**2,956**	**6.69**	**1,269**	**75.22**	**5,207**	**11.57**	**3,520**	**208.65**
70 to 74	705	1.62	1,278	2.89	573	81.28	1,996	4.43	1,291	183.12
75 to 79	469	1.08	814	1.84	345	73.56	1,437	3.19	968	206.40
80 to 84	290	0.66	435	0.99	145	50.00	913	2.03	623	214.83
85 to 89	140	0.32	229	0.52	89	63.57	460	1.02	320	228.57
90 to 94	62	0.14	116	0.26	54	87.10	200	0.44	138	222.58
95+	21	0.05	84	0.19	63	300.00	201	0.45	180	857.14

Figure 5.2.1: Population Projections and Analysis of Change, Absolute Change, NWT Total Population, 2014-2023 and 2014-2034

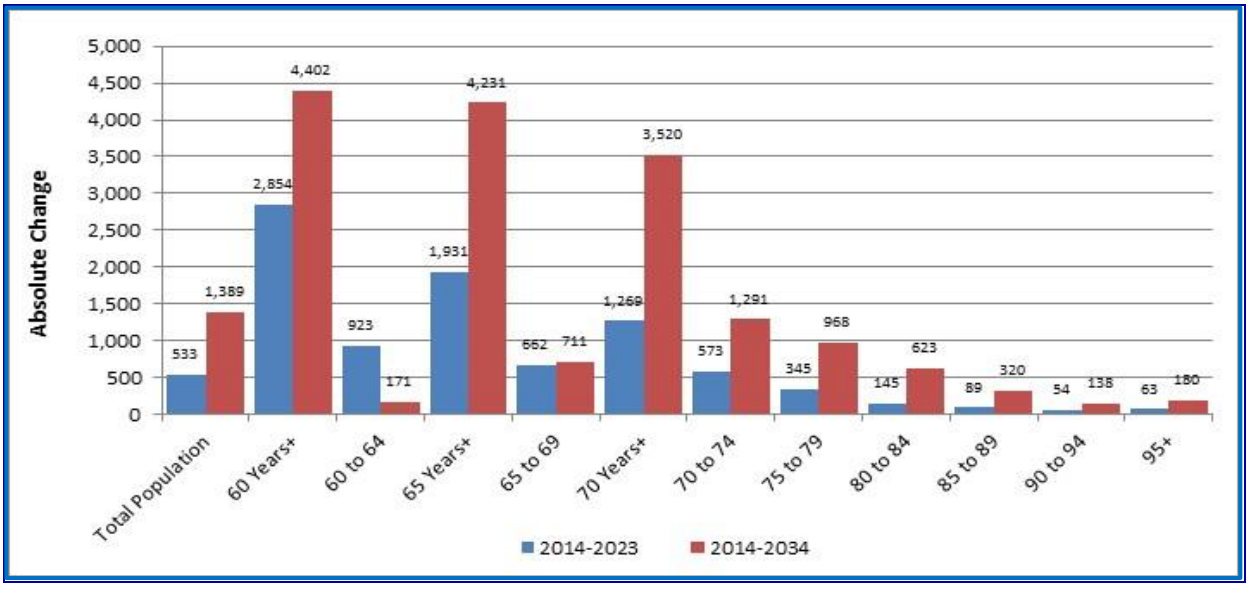


Figure 5.2.2: Population Projections and Analysis of Change, Percentage Change, Yellowknife Total Population, 2014-2023 and 2014-2034

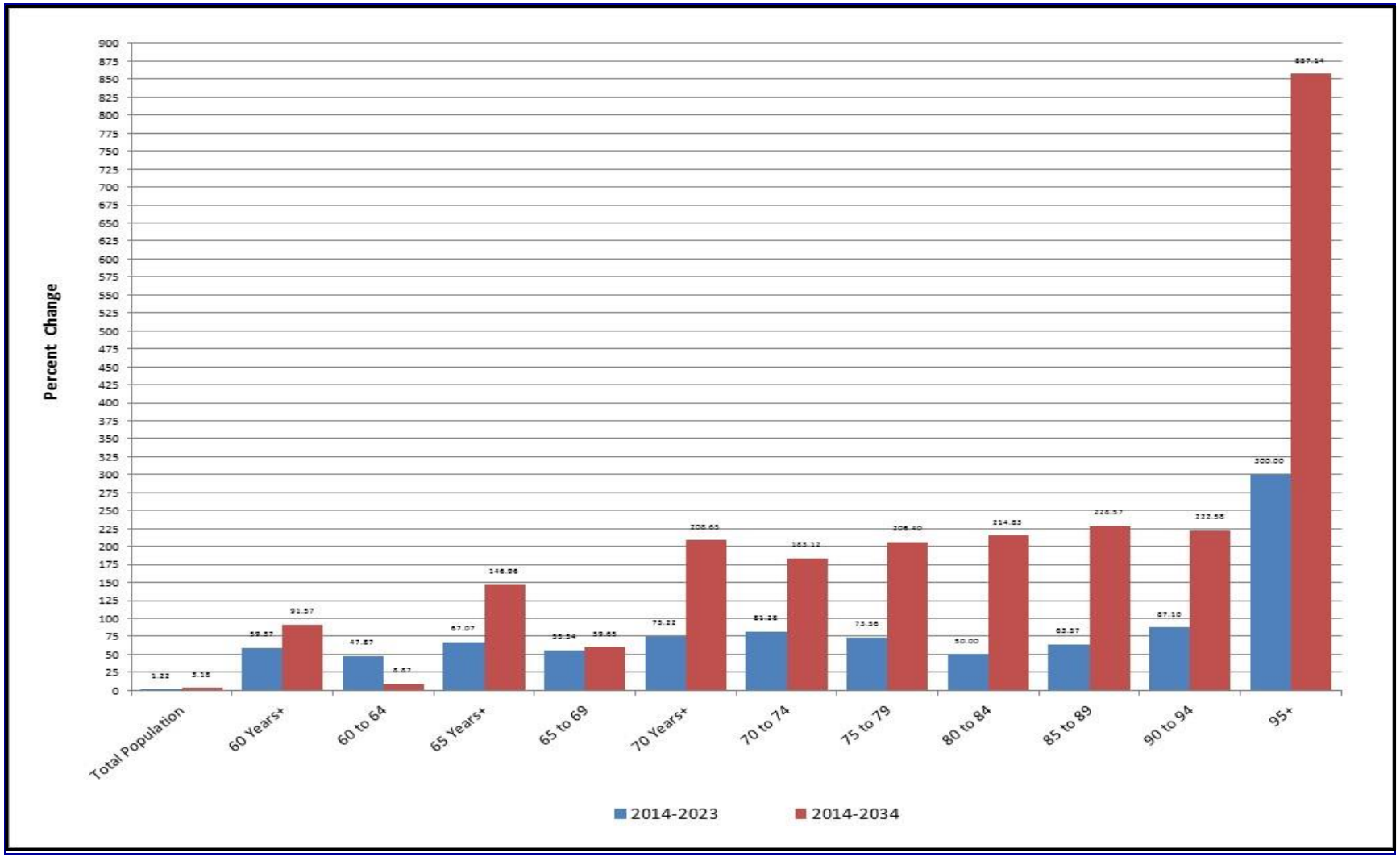


Table 5.3: Population Projections and Analysis of Change, NWT Total Population, 2014-2017 and 2017-2020

Population Cohort	2014		2017		Change Over Period 2014-2017		2020		Change Over Period 2017-2020	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	43,623	100.00	43,830	100.00	207	0.47	44,005	100.00	175	0.40
60 Years+	4,807	11.02	5,618	12.82	811	16.87	6,633	15.07	1,015	18.07
60 to 64	1,928	4.42	2,177	4.97	249	12.91	2,554	5.80	377	17.32
65 Years+	2,879	6.60	3,441	7.85	562	19.52	4,079	9.27	638	18.54
65 to 69	1,192	2.73	1,450	3.31	258	21.64	1,628	3.70	178	12.28
70 Years+	**1,687**	**3.87**	**1,991**	**4.54**	**304**	**18.02**	**2,451**	**5.57**	**460**	**23.10**
70 to 74	705	1.62	852	1.94	147	20.85	1,072	2.44	220	25.82
75 to 79	469	1.08	520	1.19	51	10.87	620	1.41	100	19.23
80 to 84	290	0.66	326	0.74	36	12.41	387	0.88	61	18.71
85 to 89	140	0.32	176	0.40	36	25.71	219	0.50	43	24.43
90 to 94	62	0.14	87	0.20	25	40.32	98	0.22	11	12.64
95+	21	0.05	30	0.07	9	42.86	55	0.12	25	83.33

Figure 5.3.1: Population Projections and Analysis of Change, Absolute Change, NWT Total Population, 2014-2017 and 2017-2020

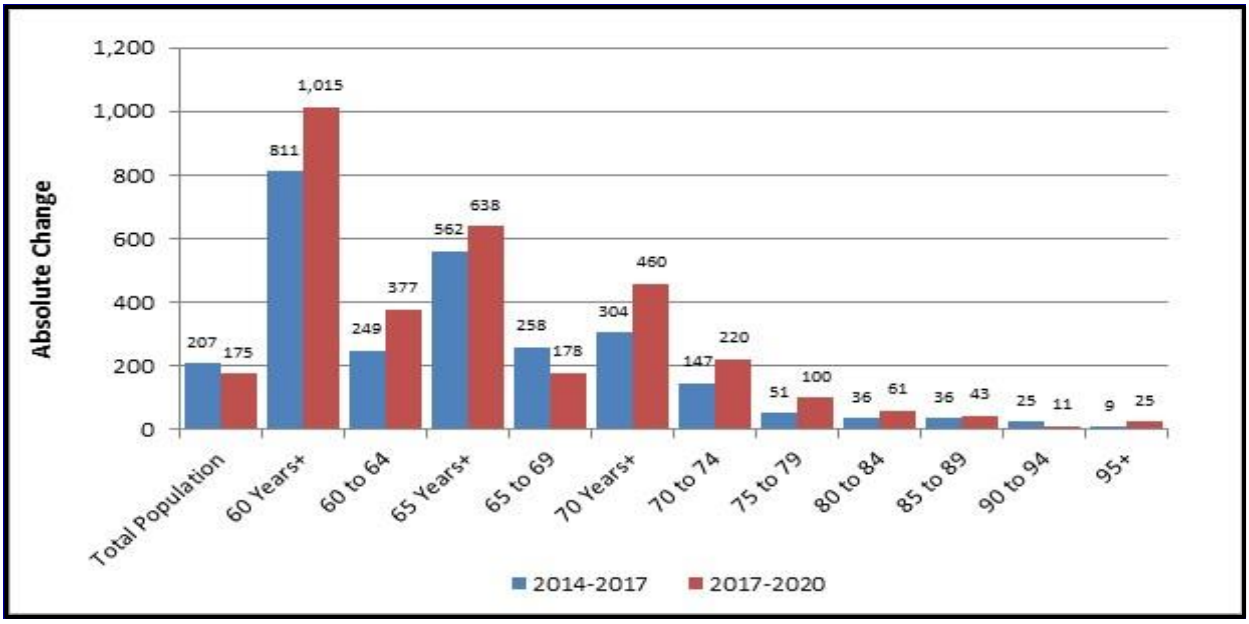


Figure 5.3.2: Population Projections and Analysis of Change, Percentage Change, NWT Total Population, 2014-2017 and 2017-2020

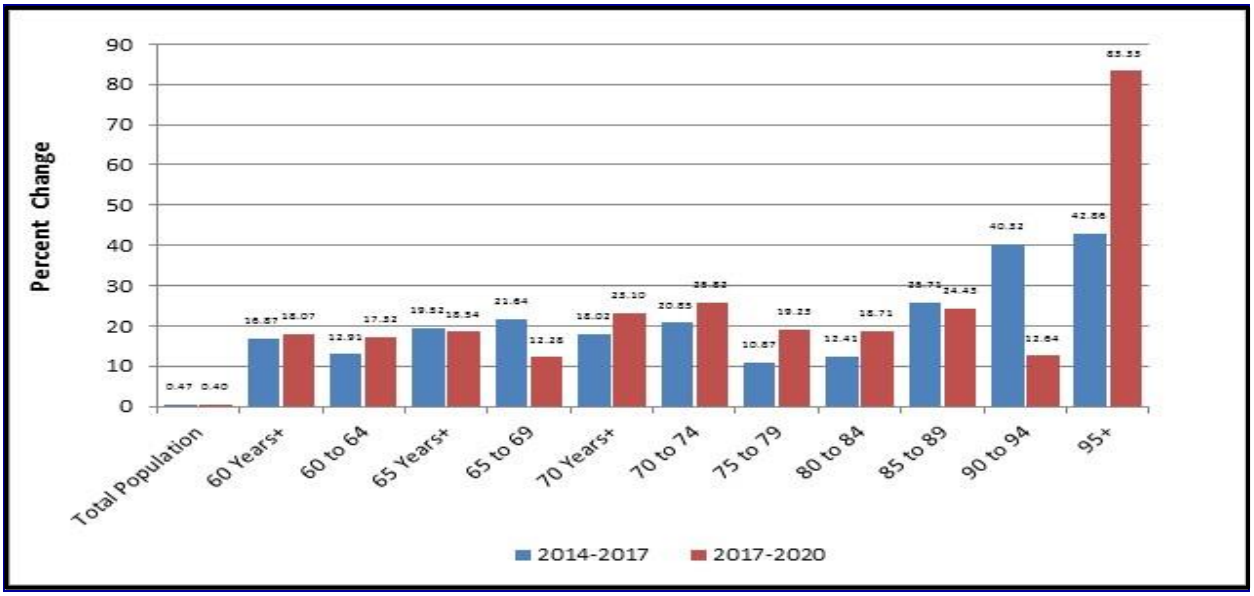


Table 5.4: Population Projections and Analysis of Change, NWT Total Population, 2020-2023 and 2023-2026

Population Cohort	2020		2023		Change Over Period 2020-2023		2026		Change Over Period 2023-2026	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	44,005	100.00	44,156	100.00	151	0.34	44,294	100.00	138	0.31
60 Years+	6,633	15.07	7,661	17.35	1,028	15.50	8,367	18.89	706	9.22
60 to 64	2,554	5.80	2,851	6.46	297	11.63	2,666	6.02	-185	-6.49
65 Years+	4,079	9.27	4,810	10.89	731	17.92	5,701	12.87	891	18.52
65 to 69	1,628	3.70	1,854	4.20	226	13.88	2,219	5.01	365	19.69
70 Years+	**2,451**	**5.57**	**2,956**	**6.69**	**505**	**20.60**	**3,482**	**7.86**	**526**	**17.79**
70 to 74	1,072	2.44	1,278	2.89	206	19.22	1,398	3.16	120	9.39
75 to 79	620	1.41	814	1.84	194	31.29	1,011	2.28	197	24.20
80 to 84	387	0.88	435	0.99	48	12.40	557	1.26	122	28.05
85 to 89	219	0.50	229	0.52	10	4.57	279	0.63	50	21.83
90 to 94	98	0.22	116	0.26	18	18.37	134	0.30	18	15.52
95+	55	0.12	84	0.19	29	52.73	103	0.23	19	22.62

Figure 5.4.1: Population Projections and Analysis of Change, Absolute Change, NWT Total Population, 2020-2023 and 2023-2026

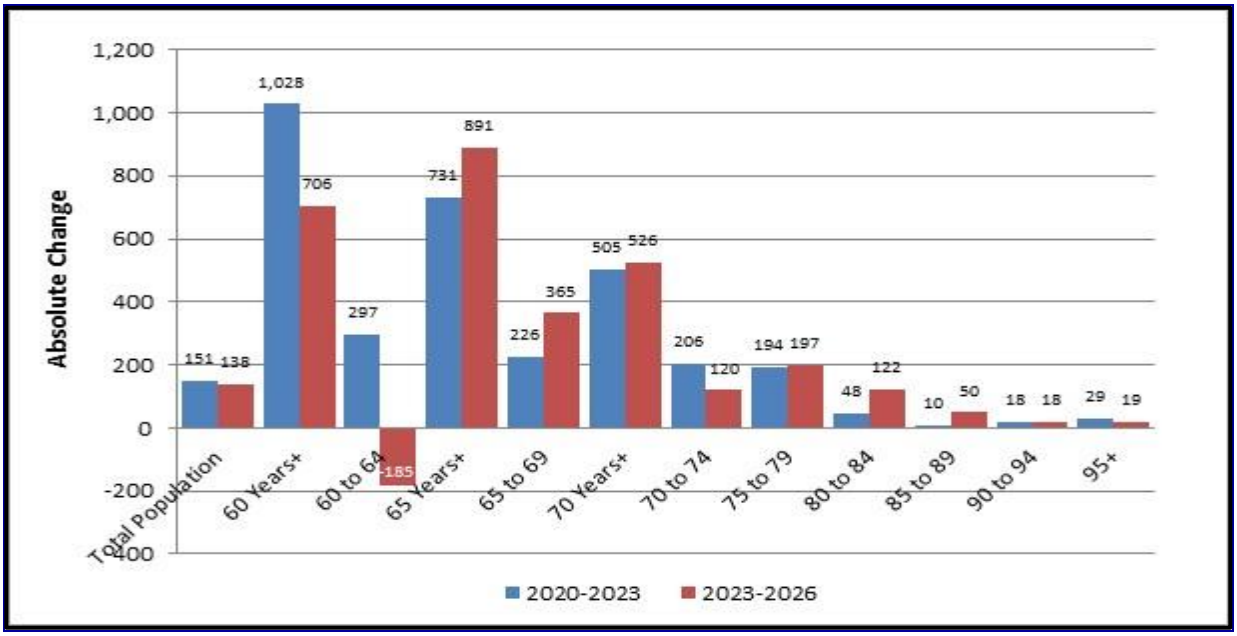


Figure 5.4.2: Population Projections and Analysis of Change, Percentage Change, NWT Total Population, 2020-2023 and 2023-2026

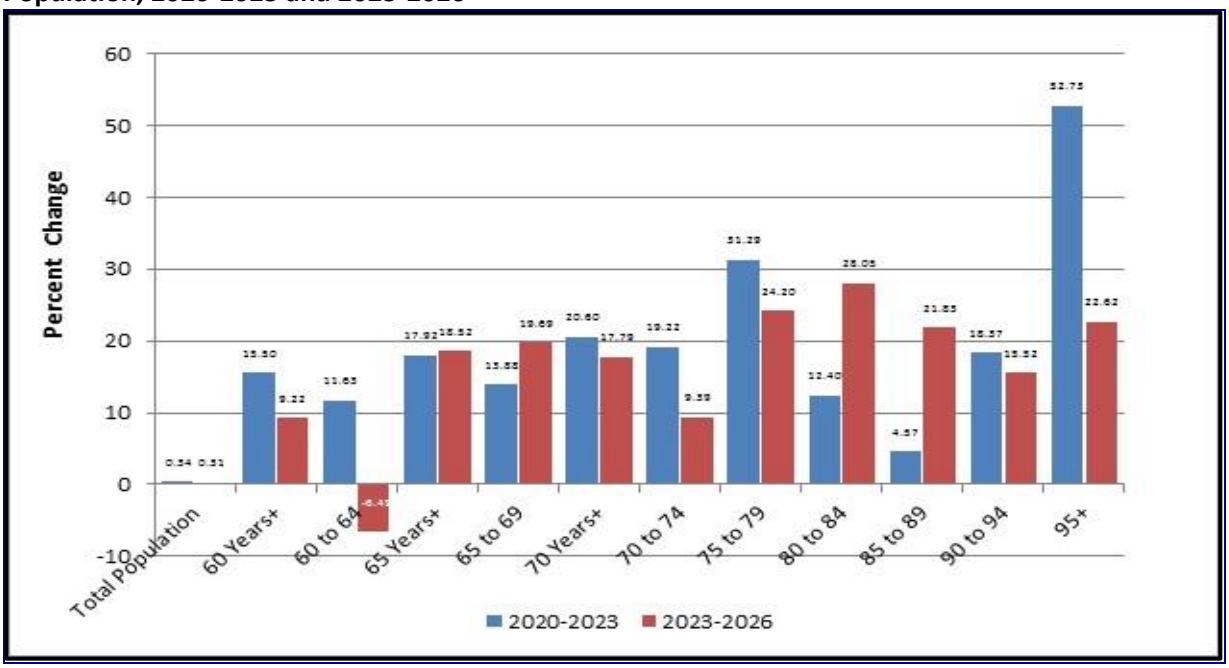


Table 5.5: Population Projections and Analysis of Change, NWT Total Population, 2026-2029 and 2029-2032

Population Cohort	2026		2029		Change Over Period 2026-2029		2032		Change Over Period 2029-2032	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	44,294	100.00	44,450	100.00	156	0.35	44,729	100.00	279	0.63
60 Years+	8,367	18.89	8,705	19.58	338	4.04	9,049	20.23	344	3.95
60 to 64	2,666	6.02	2,234	5.03	-432	-16.20	2,135	4.77	-99	-4.43
65 Years+	5,701	12.87	6,471	14.56	770	13.51	6,914	15.46	443	6.85
65 to 69	2,219	5.01	2,370	5.33	151	6.80	2,109	4.72	-261	-11.01
70 Years+	**3,482**	**7.86**	**4,101**	**9.23**	**619**	**17.78**	**4,805**	**10.74**	**704**	**17.17**
70 to 74	1,398	3.16	1,655	3.72	257	18.38	1,949	4.36	294	17.76
75 to 79	1,011	2.28	1,165	2.62	154	15.23	1,303	2.91	138	11.85
80 to 84	557	1.26	671	1.51	114	20.47	815	1.82	144	21.46
85 to 89	279	0.63	321	0.72	42	15.05	394	0.88	73	22.74
90 to 94	134	0.30	154	0.35	20	14.93	168	0.38	14	9.09
95+	103	0.23	135	0.30	32	31.07	176	0.39	41	30.37

Figure 5.5.1: Population Projections and Analysis of Change, Absolute Change, NWT Total Population, 2026-2029 and 2029-2032

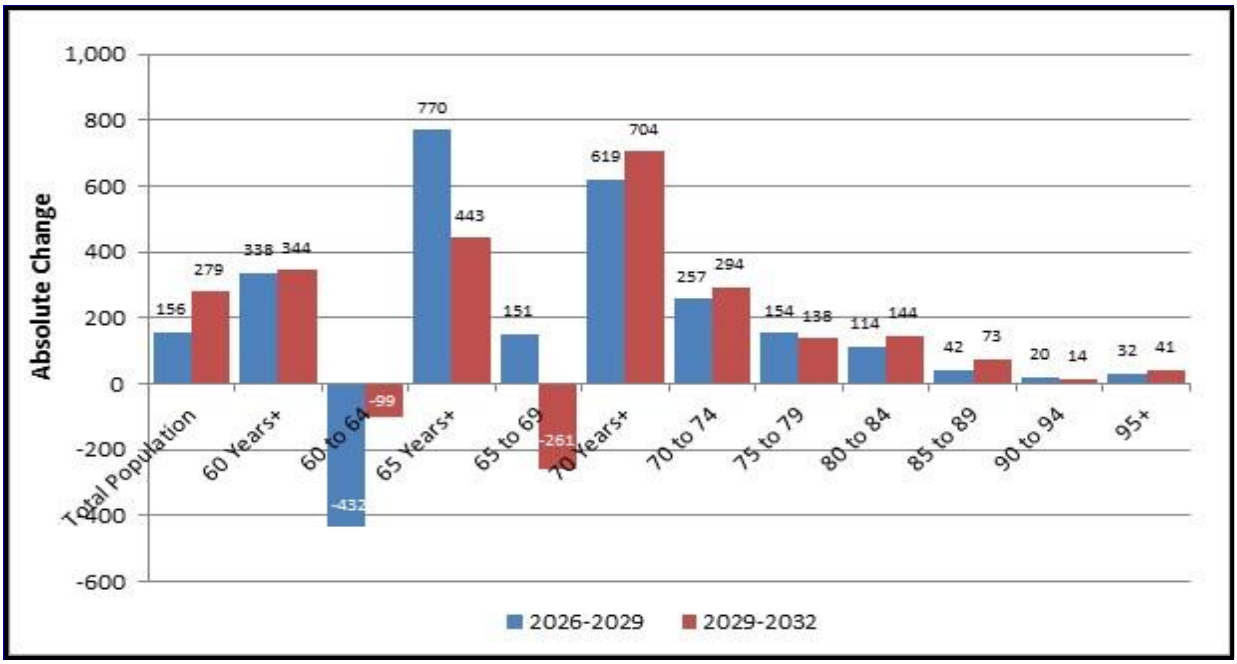


Figure 5.5.2: Population Projections and Analysis of Change, Percentage Change, Yellowknife Total Population, 2026-2029 and 2029-2032

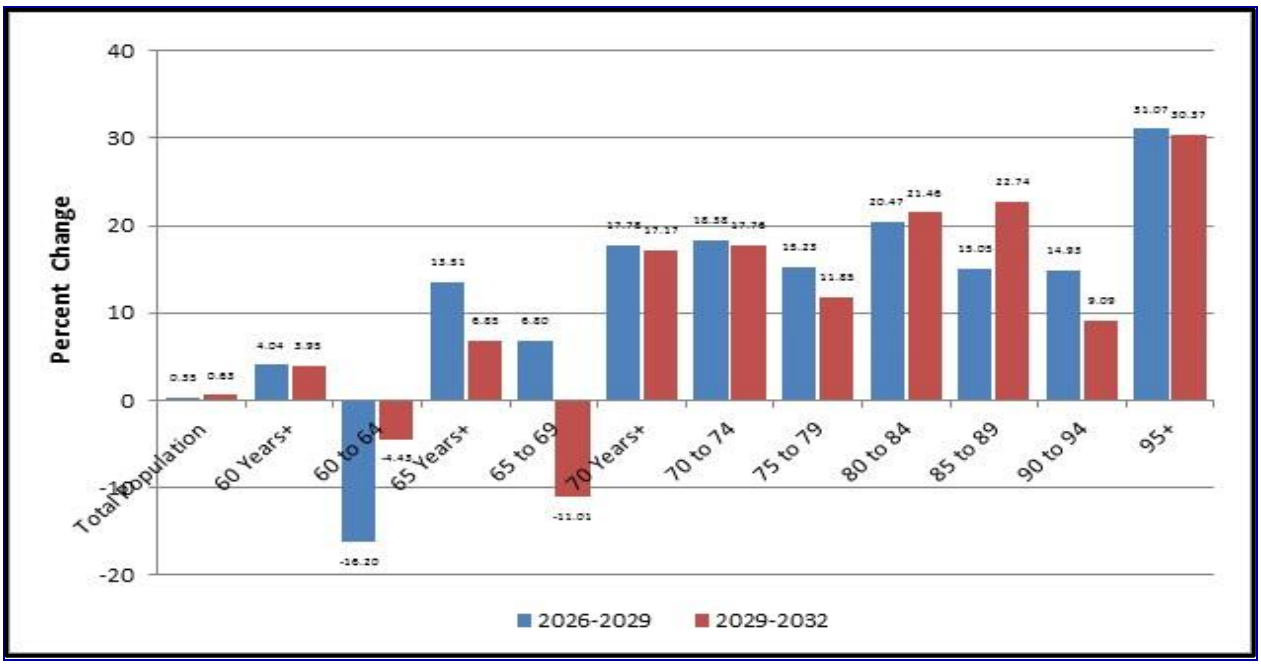


Table 5.6: Population Projections and Analysis of Change, NWT Total Population, 2032-2034

Population Cohort	2032		2034		Change Over Period 2032-2034	
	Number	%	Number	%	Number	%
Total Population	44,729	100.00	45,012	100.00	283	0.63
60 Years+	9,049	20.23	9,209	20.46	160	1.77
60 to 64	2,135	4.77	2,099	4.66	-36	-1.69
65 Years+	6,914	15.46	7,110	15.80	196	2.83
65 to 69	2,109	4.72	1,903	4.23	-206	-9.77
70 Years+	**4,805**	**10.74**	**5,207**	**11.57**	**402**	**8.37**
70 to 74	1,949	4.36	1,996	4.43	47	2.41
75 to 79	1,303	2.91	1,437	3.19	134	10.28
80 to 84	815	1.82	913	2.03	98	12.02
85 to 89	394	0.88	460	1.02	66	16.75
90 to 94	168	0.38	200	0.44	32	19.05
95+	176	0.39	201	0.45	25	14.20

Figure 5.6.1: Population Projections and Analysis of Change, Absolute Change, NWT Total Population, 2032-2034

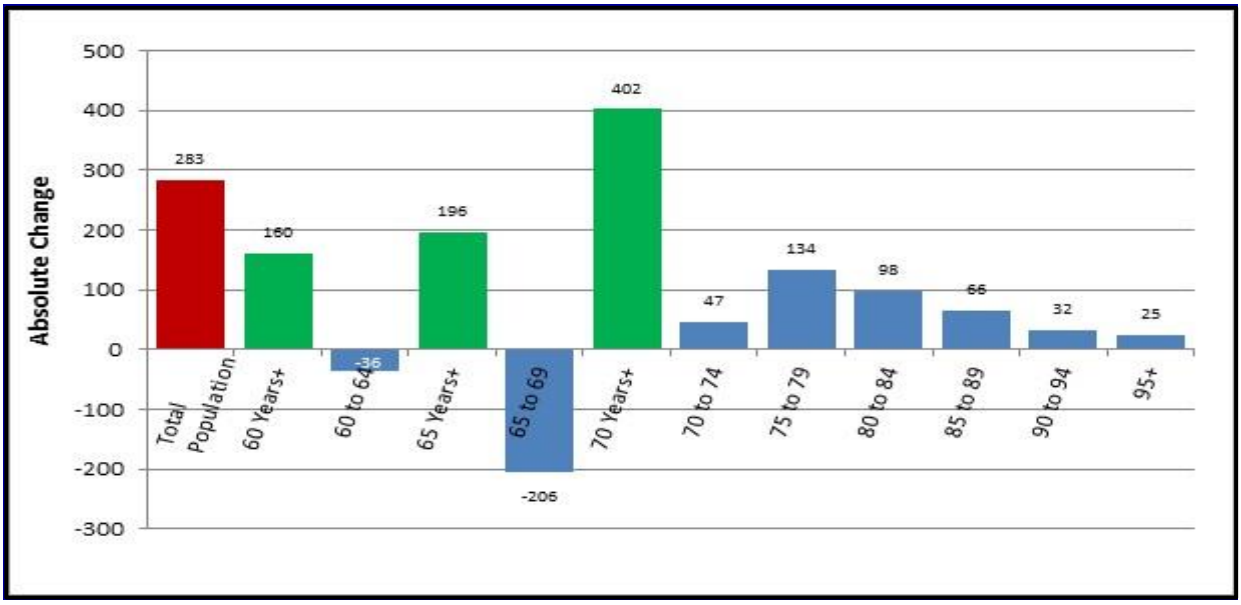
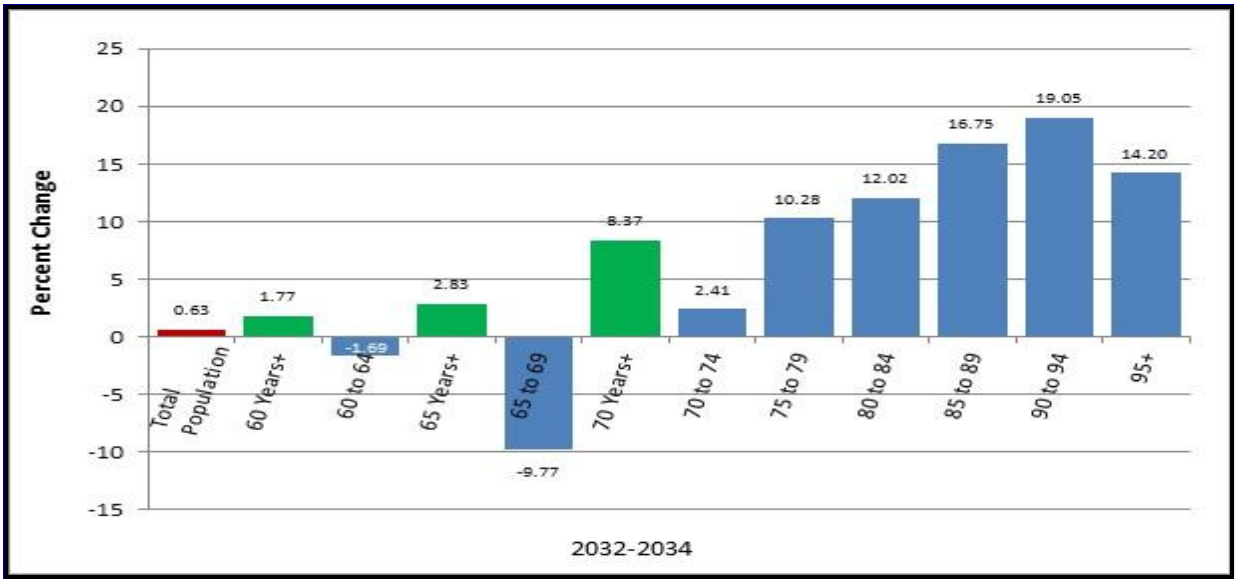


Figure 5.6.2: Population Projections and Analysis of Change, Percentage Change, NWT Total Population, 2032-2034



The same level of detailed analysis was completed for the Yellowknife region given that it represents nearly half of the territorial population. The full analysis results are contained in Appendix D, Tables D-1 to D-6 and Figures D-1.1 to D-6.2.

The demographic change analysis is presented in the following sub-sections: Population change analysis and summaries for selected reference periods: 2014 to 2034, 2014 to 2023 and 2023 to 2034, and are intended to provide a projection for the full twenty-year horizon, as well as at the mid and end points; and, a more granular analysis and change summaries for three year periods to align with the GNWT business and capital planning cycles. The selected reference periods for granular analysis, are: 2014-17; 2017-20; 2020-23; 2023-26; 2026-29; 2029-32; and, 2032-34. Table 5.1 and Figures 5.1.1 and 5.1.2, present in summary format the changes (absolute and percentage) over selected reference periods. Tables 5.2 to 5.6 present the changes in detail.

5.4.1 NWT: Projections and Changes over the 2014 to 2034 Period

Key Demographic Driver and Trend: *While there is little growth in total territorial population over this period, the demographic structure continues to 'age' – with a range of associated economic and social policy implications. The trend is also reflected at the regional level. Three regions (Beaufort Delta, Dehcho, and South Slave) will experience small declines in their total population.*

Total Territorial Population

- By 2034, the total NWT population is projected to be 45,012. This represents an increase of 1,389 persons, or 3.2% from 2014. Statistically, this change in the total population is negligible over the twenty year period. This will extend the demographic trend over the previous two decades where there was virtually no population growth resulting from net territorial out-migration (including a net out-migration of those 60+ years in 23 of 25 years) and declining fertility patterns. Moreover, from the perspective of the LTC Program, the age structure of the territorial population will undergo continued 'aging' – with significant growth in the seniors' cohorts, especially in the 70+ years cohort.
- There will be 22,877 Aboriginal persons, representing 50.8% of the territorial population. Non-Aboriginal persons are projected to total 22,135, representing 49.2% of the population. The Aboriginal population will continue to maintain a slight majority in 2034, although with a decrease in the share from 51.9% to 50.8%.
- There will be 22,424 males, representing 49.8% of the population. Females will account for a total of 22,588, representing 50.2% of the population. The corresponding total population sex ratio is expected to be 99.3 (i.e., 99.3 males for every 100 females).

60+ Years Cohort

- There will be 9,209 persons aged 60+ years, representing 20.5% of the total population. This represents an increase of 4,402 persons (91.6% increase), and a relative 'share' growth from 11.0% to 20.5% of the total population.
- There will be 4,617 Aboriginal persons, representing 50.1% of the population aged 60+ years. Non-Aboriginal persons will account for 4,592, representing 49.9% of this age cohort
- There will be 4,371 males, representing 47.5% of the population aged 60+ years. Females will account for a total of 4,838, representing 52.5% of the population. The corresponding population sex ratio for this age cohort is expected to be 90.4.

70+ Years Cohort

- There will be 5,207 persons aged 70+ years, representing 11.6% of the total population. This represents an increase of 3,520 persons (208.7% increase), and a relative 'share' growth from 3.9% to 11.6% of the total population.
- There will be 2,456 Aboriginal persons, representing 47.2% of the population aged 70+ years. Non-Aboriginal persons will account for 2,751, representing 52.8% of this age cohort.
- There will be 2,400 males, representing 46.1% of the population aged 70+ years. Females will account for a total of 2,807, representing 53.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 85.5, and reflects the longer life expectancy for females.

70+ Years Cohort: Trend and Peak Analysis for the Period 2014 to 2034

For the NWT, the 70+ years cohort, the projected change pattern between the reference periods is presented in Table 5.7, and Figures 5.7.1 and 5.7.2.

The observed change pattern is as follows: relative growth (percent changes over selected reference periods will continue through to 2020 (23.10%) where it will start a slow decline through to 2026 (17.79%). This slow decline will continue through to 2032 (17.17%), where a slightly accelerated decline will be experienced through to 2034 (the limit of the population projection model). The 70+ years cohort population trend can be characterized as *'increasing at a decreasing rate'* over this period.

The projected change patterns for this cohort based on Table 5.7 are summarized below:

2014 to 2017	*Absolute number increase will be 304, representing an increase of 18.02% over that period.*
2017 to 2020	*Absolute number increase will be 460, representing an increase of 23.10% over that period. This represents the '**peak**' relative increase.*
2020 to 2023	*Absolute number increase will be 505, representing an increase of 20.60% over that period.*
2023 to 2026	*Absolute number increase will be 526, representing an increase of 17.79% over that period.*
2026 to 2029	*Absolute number increase will be 619, representing an increase of 17.78% over that period.*
2029 to 2032	*Absolute number increase will be 704, representing an increase of 17.17% over that period.*
2032 to 2034	*Absolute number increase over this two-year period (as compared to the previous three year reference periods) will be 402, representing an increase of 8.37% over that period.*

Table 5.7: Analysis of Population Change in 70+ Years Cohort, NWT, 2014-2034

Year	Population in Cohort	Percent of Total NWT Population	Absolute Population Change Over Prior Period	Percent Change in Total Cohort Population
2014	1,687	3.87	---	---
2017	1,991	4.54	304	18.02
2020	2,451	5.57	460	23.10
2023	2,956	6.69	505	20.60
2026	3,482	7.86	526	17.79
2029	4,101	9.23	619	17.78
2032	4,805	10.74	704	17.17
2034	5,207	11.57	402	8.37
2014 to 2034	---	---	3,520	208.65

Figure 5.7.1: Percent Change in Total Cohort Population, 60+ Years, 65+ Years, and 70+ Years, NWT, 2017-2034

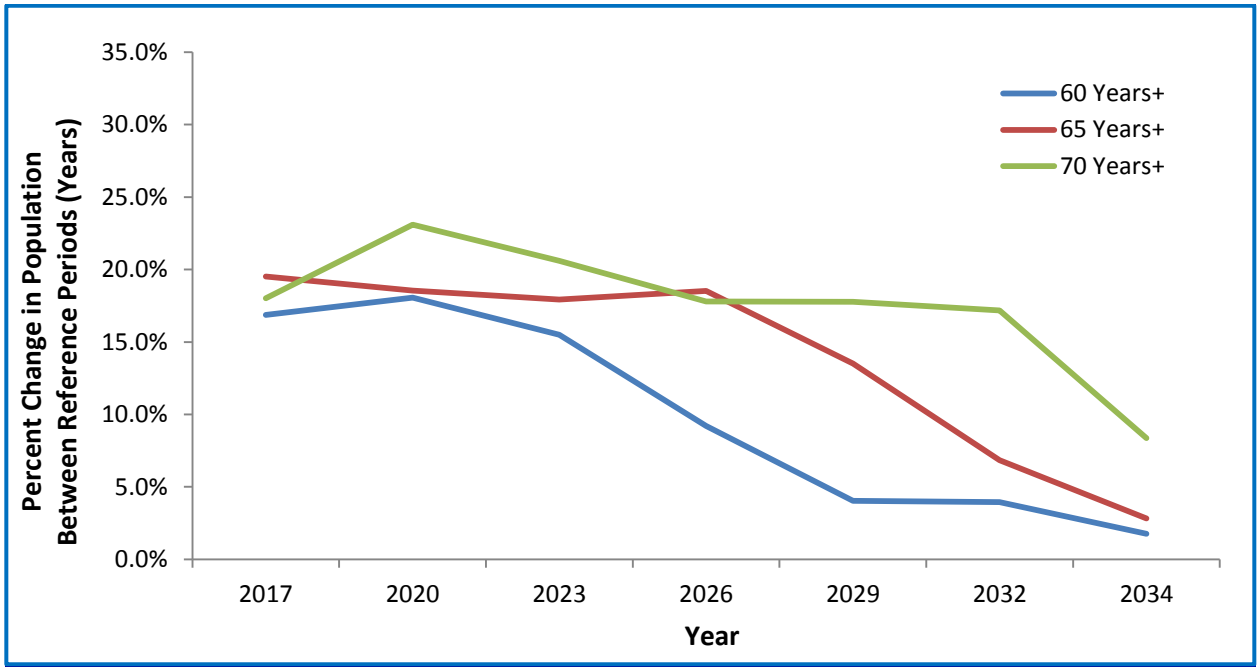
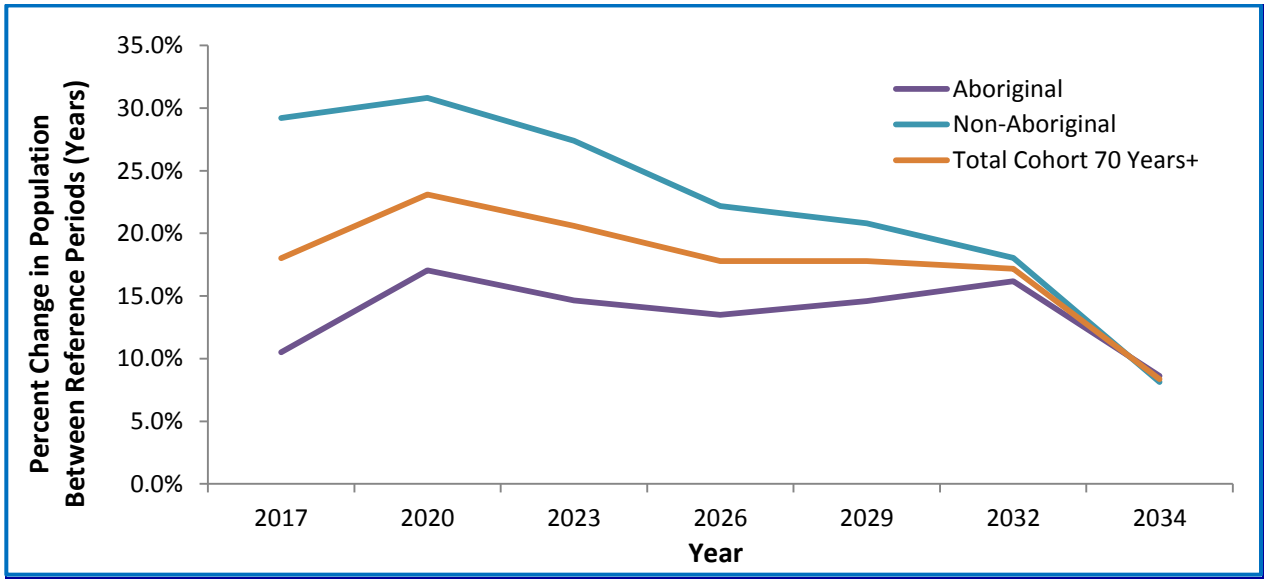


Figure 5.7.2: Percent Change in Total 70+ Years Cohort and Ethnicity, NWT, 2017-2034



5.4.2 NWT: Projections and Changes over the 2014 to 2023 Period

Key Demographic Driver and Trend: *While there is little growth in total territorial population over this period, the demographic structure continues to 'age' with a range of associated economic and social policy implications.*

Tables 5.1 to 5.6 and Figures 5.1.1 to 5.6.2 present in numerical and graphic format population projections and associated changes for the total population, as well as the 60+ years and 70+ years cohorts. Presented below are selected observations for the 2014 to 2023 period for total population, the 60+ years cohort, and the 70+ years cohort.

Total Territorial Population

- By 2023, the total NWT population is projected to be 44,156. This represents an increase of 533 persons, or 1.2% from 2014. Statistically, this change in the total population is negligible over the nine year period. This projected change will extend the demographic trend over the previous two decades where there was virtually no population growth resulting from net territorial out-migration (including a net out-migration of those in 23 of 25 years) and declining fertility patterns. Moreover, from the perspective of the LTC Program, the age structure of the territorial population will undergo continued 'aging' – with significant growth in the seniors' cohorts.
- There will be 22,908 Aboriginal persons, representing 51.9% of the territorial population. Non-Aboriginal persons are projected to total 21,248, representing 48.1% of the population. The Aboriginal population will maintain a slight overall majority in 2023, with a 'share' increase from 51.4% to 51.9%.
- There will be 22,242 males, representing 50.4% of the population. Females will account for a total of 21,914, representing 49.6% of the population. The corresponding total population sex ratio is expected to be 101.5 (i.e., 101.5 males for every 100 females).

60+ Years Cohort

- There will be 7,661 persons aged 60+ years, representing 17.4% of the total population. This represents an increase of 2,854 persons (59.4% increase), and a relative 'share' growth from 11.0% to 17.4% of the total population.
- There will be 3,645 Aboriginal persons, representing 47.6% of the population aged 60+ years. Non-Aboriginal persons will account for 4,016, representing 52.4% of this age cohort. This represents an increase of 1,254 (52.5%) Aboriginal persons, and 1,600 (66.2%) in non-Aboriginal persons.
- There will be 3,852 males, representing 50.3% of the population aged 60+ years. Females will account for a total of 3,809, representing 49.7% of the population. The corresponding population sex ratio for this age cohort is expected to be 101.1.

70+ Years Cohort

- There will be 2,956 persons aged 70+ years, representing 6.7% of the total population. This represents an increase of 1,269 persons (75.2% increase), and a relative 'share' growth from 3.9% to 6.7% of the total population.
- There will be 1,496 Aboriginal persons, representing 50.6% of the population aged 70+ years. Non-Aboriginal persons will account for 1,460, representing 49.4% of this age cohort. This

represents an increase of 478 (48.3%) Aboriginal persons, and 782 (115.3%) in non-Aboriginal persons.

- The variance in change reflects a number of factors, including: the historical '*young*' demographic structure resulting from high fertility rates and in-migration of a young labour force; and, the subsequent aging of the population from declining fertility and net out-migration.
- There will be 1,394 males, representing 47.2% of the population aged 70+ years. Females will account for a total of 1,562, representing 52.8% of the population. The corresponding population sex ratio for this age cohort is expected to be 89.2, and reflects the longer life expectancy for females (i.e., based on life tables after age 70 years).

To illustrate, in 1996 the population aged 0 to 59 years was 39,472, representing 94.6% of the total NWT population, with those aged 60+ years accounting for 2,269, or 5.4%. By 2023 the 0 to 59 year age cohort will have declined to 36,495 persons, representing 82.7% of the total population. In the 0 to 59 years age cohort, Aboriginal persons will account for 19,233 (52.8%) of the population, while non-Aboriginals will comprise a total of 17,232 persons, representing 47.2%. For completeness, by 2034 the 0 to 59 year age cohort will have declined from the *2023 level* by 692 to 35,803 persons, representing 79.5% of the total population. Those aged 60+ years will see an increase of 1,548 and account for a total 9,209 persons, representing 20.5% of the total NWT population.

5.4.3 Regional Population Projections and Changes over the 2014 to 2034 Period

To provide additional regional level population projections and analysis of change, the following projections present, in summary format, the projections for each region for two time frames: 2014 to 2034 to set the longer term outlook and then for 2014 to 2023 to inform near term policy and program decisions.

Presented below are the regional projection results for the period 2014 to 2034. The focus is on the projections for the entire 2014 to 2034 period in order to provide a longer-term perspective at the regional level. The complete population projections at the NWT and regional level are presented in Appendix C, Tables C-1 and C-2.

Additionally, Tables C-1 and C-2 present the details for the two seniors' cohorts but also were developed to inform and support broader discussion and programming in the Continuing Care Program (i.e., home and community care, and palliative care) by providing additional projections for the sub-cohorts as follows: 60+ years; 60 to 64 years; 65+ years; 65 to 69 years; 70+ years; 70 to 74 years; 75 to 79 years; 80 to 84 years; 85 to 89 years; 90 to 94 years; and, 95+ years.

The following are key observations for the 2014 to 2034 period for total regional population, the 60+ years cohort, and the 70+ years cohort. A number of the regions will experience the same types of population changes as the NWT overall, with little overall population growth and some regions experiencing a small decline in population. The regions with the highest and lowest, respectively, share of those 70+ years in 2034 will be South Slave (Hay River) at 15.9% and Tlicho at 7.8%. The NWT share will be 11.6%.

Region: Yellowknife, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 22,693, representing 50.4% of the total NWT population (45,012).
- There will be 6,277 Aboriginal persons, representing 27.7% of the total regional population. Non-Aboriginal persons will total 16,416, representing 72.3% of the regional population.
- There will be 11,317 males, representing 49.9% of the population. Females will account for a total of 11,376, representing 50.1% of the population. The corresponding total regional population sex ratio is expected to be 99.5 (i.e., 99.5 males for every 100 females).

60+ Years Cohort

- There will be 4,730 persons aged 60+ years, representing 19.3% of the *total regional* population (22,693).
- There will be 1,211 Aboriginal persons, representing 27.7% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 3,159, representing 72.3% of this age cohort.
- There will be 2,083 males, representing 47.7% of the population aged 60+ years. Females will account for a total of 2,287, representing 52.3% of the population. The corresponding population sex ratio for this age cohort is expected to be 91.1.

70+ Years Cohort

- There will be 2,432 persons aged 70+ years, representing 10.7% of the total regional population.
- There will be 634 Aboriginal persons, representing 26.1% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 1,798, representing 73.9% of this age cohort.
- There will be 1,136 males, representing 46.7% of the population aged 70+ years. Females will account for a total of 1,296, representing 53.3% of the population. The corresponding population sex ratio for this age cohort is expected to be 87.7.

Region: Beaufort Delta, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 6,872, representing 15.3% of the total NWT population. This region is one of the ones that will experience a small decline in overall population, from 6,898 in 2014.
- There will be 5,519 Aboriginal persons, representing 80.3% of the total regional population. Non-Aboriginal persons will total 1,353, representing 19.7% of the regional population.
- There will be 3,355 males, representing 48.8% of the population. Females will account for a total of 3,517, representing 51.2% of the population. The corresponding total regional population sex ratio is expected to be 95.4.

60+ Years Cohort

- There will be 1,385 persons aged 60+ years, representing 20.2% of the total regional population.
- There will be 1,089 Aboriginal persons, representing 78.6% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 296, representing 21.4% of this age cohort.

- There will be 651 males, representing 47.0% of the population aged 60+ years. Females will account for a total of 734, representing 53.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 88.7.

70+ Years Cohort

- There will be 784 persons aged 70+ years, representing 11.4% of the total regional population.
- There will be 609 Aboriginal persons, representing 77.7% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 175, representing 22.3% of this age cohort.
- There will be 348 males, representing 44.4% of the population aged 70+ years. Females will account for a total of 436, representing 55.6% of the population. The corresponding population sex ratio for this age cohort is expected to be 79.8.

Region: Dehcho, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 3,452, representing 7.7% of the total NWT population. This region is one of the ones that will experience a small decline in overall population, from 3,483 in 2014.
- There will be 2,938 Aboriginal persons, representing 85.1% of the total regional population. Non-Aboriginal persons will total 514, representing 14.9% of the regional population.
- There will be 1,734 males, representing 50.2% of the population. Females will account for a total of 1,718, representing 49.8% of the population. The corresponding total regional population sex ratio is expected to be 100.9.

60+ Years Cohort

- There will be 904 persons aged 60+ years, representing 26.2% of the total regional population.
- There will be 742 Aboriginal persons, representing 82.1% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 162, representing 17.9% of this age cohort.
- There will be 444 males, representing 49.1% of the population aged 60+ years. Females will account for a total of 460, representing 50.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 96.5.

70+ Years Cohort

- There will be 500 persons aged 70+ years, representing 14.5% of the total regional population.
- There will be 383 Aboriginal persons, representing 76.6% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 117, representing 23.4% of this age cohort.
- There will be 247 males, representing 49.4% of the population aged 70+ years. Females will account for a total of 253, representing 50.6% of the population. The corresponding population sex ratio for this age cohort is expected to be 97.6.

Region: Fort Smith, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 2,598, representing 5.8% of the total NWT population.
- There will be 1,582 Aboriginal persons, representing 60.9% of the total regional population. Non-Aboriginal persons will total 1,016, representing 39.1% of the regional population.
- There will be 1,304 males, representing 50.2% of the population. Females will account for a total of 1,294, representing 49.8% of the population. The corresponding total regional population sex ratio is expected to be 100.8.

60+ Years Cohort

- There will be 587 persons aged 60+ years, representing 22.6% of the total regional *population.*
- There will be 358 Aboriginal persons, representing 61.0% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 229, representing 39.0% of this age cohort.
- There will be 270 males, representing 46.0% of the population aged 60+ years. Females will account for a total of 317, representing 54.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 85.2.

70+ Years Cohort

- There will be 346 persons aged 70+ years, representing 13.3% of the total regional population.
- There will be 190 Aboriginal persons, representing 54.9% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 156, representing 45.1% of this age cohort.
- There will be 151 males, representing 43.6% of the population aged 70+ years. Females will account for a total of 195, representing 56.4% of the population. The corresponding population sex ratio for this age cohort is expected to be 77.4.

Region: South Slave (Hay River), 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 3,753, representing 8.3% of the total NWT population.
- There will be 1,709 Aboriginal persons, representing 45.5% of the total regional population. Non-Aboriginal persons will total 2,044, representing 54.5% of the regional population.
- There will be 1,886 males, representing 50.3% of the population. Females will account for a total of 1,867, representing 49.8% of the population. The corresponding total regional population sex ratio is expected to be 101.0.

60+ Years Cohort

- There will be 956 persons aged 60+ years, representing 25.5% of the total regional population.
- There will be 408 Aboriginal persons, representing 42.7% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 548, representing 57.3% of this age cohort.
- There will be 433 males, representing 45.3% of the population aged 60+ years. Females will account for a total of 523, representing 54.7% of the population. The corresponding population sex ratio for this age cohort is expected to be 82.8.

70+ Years Cohort

- There will be 597 persons aged 70+ years, representing 15.9% of the total regional population. This is the highest regional share of this age cohort.
- There will be 221 Aboriginal persons, representing 37.0% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 376, representing 62.9% of this age cohort.
- There will be 270 males, representing 45.2% of the population aged 70+ years. Females will account for a total of 327, representing 54.8% of the population. The corresponding population sex ratio for this age cohort is expected to be 82.6.

Region: Sahtu, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 2,560, representing 5.7% of the total NWT population.
- There will be 1,939 Aboriginal persons, representing 75.7% of the total regional population. Non-Aboriginal persons will total 621, representing 24.3% of the regional population.
- There will be 1,285 males, representing 50.2% of the population. Females will account for a total of 1,275, representing 49.8% of the population. The corresponding total regional population sex ratio is expected to be 100.8.

60+ Years Cohort

- There will be 521 persons aged 60+ years, representing 20.4% of the total regional population.
- There will be 359 Aboriginal persons, representing 68.9% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 162, representing 31.1% of this age cohort.
- There will be 242 males, representing 46.5% of the population aged 60+ years. Females will account for a total of 279, representing 53.6% of the population. The corresponding population sex ratio for this age cohort is expected to be 86.7.

70+ Years Cohort

- There will be 308 persons aged 70+ years, representing 12.0% of the total regional population.
- There will be 205 Aboriginal persons, representing 66.6% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 103, representing 33.4% of this age cohort.
- There will be 137 males, representing 44.5% of the population aged 70+ years. Females will account for a total of 171, representing 55.5% of the population. The corresponding population sex ratio for this age cohort is expected to be 80.1.

Region: Tlicho, 2014 to 2034

Total Regional Population

- By 2034, the total regional population is projected to be 3,084, representing 6.9% of the total NWT population.
- There will be 2,913 Aboriginal persons, representing 94.5% of the total regional population. Non-Aboriginal persons will total 171, representing 5.5% of the regional population.

- There will be 1,543 males, representing 50.0% of the population. Females will account for a total of 1,541, representing 50.0% of the population. The corresponding total regional population sex ratio is expected to be 100.1.

60+ Years Cohort

- There will be 486 persons aged 60+ years, representing 15.8% of the total regional population.
- There will be 450 Aboriginal persons, representing 92.6% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 36, representing 7.4% of this age cohort.
- There will be 248 males, representing 51.0% of the population aged 60+ years. Females will account for a total of 238, representing 49.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 104.2.

70+ Years Cohort

- There will be 240 persons aged 70+ years, representing 7.8% of the total regional population. This is the lowest regional share of this age cohort.
- There will be 214 Aboriginal persons, representing 89.2% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 26, representing 10.8% of this age cohort.
- There will be 111 males, representing 46.3% of the population aged 70+ years. Females will account for a total of 129 representing 53.8% of the population. The corresponding population sex ratio for this age cohort is expected to be 86.1.

5.4.4 Regional Population Projections and Changes over the 2014 to 2023 Period

To complete the analysis of population change, presented below are the regional projection results for the period 2014 to 2023. The focus is on the projections for the next decade as these are relatively more urgent from a policy and program decision perspective. The complete population projections at the NWT and regional level are presented in Appendix C, Tables C-1 and C-2. Appendix D contains the population projections and analysis for the Yellowknife region (2014 to 2034 period) to inform discussion at both the NWT and regional levels. Given the significant proportion of total bed demand (some 43% by 2026) in the Yellowknife region, it has been profiled in detail.

Region: Yellowknife, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 21,789, representing 49.4% of the total NWT population (44,156).
- There will be 6,198 Aboriginal persons, representing 28.5% of the total regional population. Non-Aboriginal persons will total 15,591, representing 71.6% of the regional population.
- There will be 10,924 males, representing 50.1% of the population. Females will account for a total of 10,865, representing 49.9% of the population. The corresponding total regional population sex ratio is expected to be 100.5 (i.e., 100.5 males for every 100 females).

60+ Years Cohort

- There will be 3,541 persons aged 60+ years, representing 16.3% of the *total regional population.*
- There will be 906 Aboriginal persons, representing 25.6% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 2,635, representing 74.4% of this age cohort.

- There will be 1,789 males, representing 50.5% of the population aged 60+ years. Females will account for a total of 1,752, representing 49.5% of the population. The corresponding population sex ratio for this age cohort is expected to be 102.1.

70+ Years Cohort

- There will be 1,211 persons aged 70+ years, representing 5.6% of the total regional population.
- There will be 321 Aboriginal persons, representing 26.5% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 890, representing 73.5% of this age cohort.
- There will be 577 males, representing 47.7% of the population aged 70+ years. Females will account for a total of 634, representing 52.4% of the population. The corresponding population sex ratio for this age cohort is expected to be 91.0.

Region: Beaufort Delta, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 6,948, representing 15.7% of the total NWT population (44,156).
- There will be 5,597 Aboriginal persons, representing 80.6% of the total regional population. Non-Aboriginal persons will total 1,351, representing 19.4% of the regional population.
- There will be 3,444 males, representing 49.6% of the population. Females will account for a total of 3,504, representing 50.4% of the population. The corresponding total regional population sex ratio is expected to be 98.3.

60+ Years Cohort

- There will be 1,160 persons aged 60+ years, representing 16.7% of the total regional population.
- There will be 901 Aboriginal persons, representing 77.7% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 259, representing 22.3% of this age cohort.
- There will be 568 males, representing 49.0% of the population aged 60+ years. Females will account for a total of 592, representing 51.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 96.0.

70+ Years Cohort

- There will be 470 persons aged 70+ years, representing 6.8% of the total regional population.
- There will be 377 Aboriginal persons, representing 80.2% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 93, representing 19.8% of this age cohort.
- There will be 213 males, representing 45.3% of the population aged 70+ years. Females will account for a total of 257, representing 54.7% of the population. The corresponding population sex ratio for this age cohort is expected to be 82.9.

Region: Dehcho, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 3,494, representing 7.9% of the total NWT population (44,156).
- There will be 2,977 Aboriginal persons, representing 85.2% of the total regional population. Non-Aboriginal persons will total 517, representing 14.8% of the regional population.
- There will be 1,801 males, representing 51.6% of the population. Females will account for a total of 1,693, representing 48.4% of the population. The corresponding total regional population sex ratio is expected to be 106.4.

60+ Years Cohort

- There will be 697 persons aged 60+ years, representing 20.0% of the total regional population.
- There will be 549 Aboriginal persons, representing 78.8% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 148, representing 21.2% of this age cohort.
- There will be 354 males, representing 50.8% of the population aged 60+ years. Females will account for a total of 343, representing 49.2% of the population. The corresponding population sex ratio for this age cohort is expected to be 103.2.

70+ Years Cohort

- There will be 296 persons aged 70+ years, representing 8.5% of the total regional population.
- There will be 245 Aboriginal persons, representing 82.8% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 51, representing 17.2% of this age cohort.
- There will be 145 males, representing 49.0 of the population aged 70+ years. Females will account for a total of 151, representing 51.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 96.0.

Region: Fort Smith, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 2,554, representing 5.8% of the total NWT population (44,156).
- There will be 1,571 Aboriginal persons, representing 61.5% of the total regional population. Non-Aboriginal persons will total 983, representing 38.5% of the regional population.
- There will be 1,282 males, representing 50.2% of the population. Females will account for a total of 1,272, representing 49.8% of the population. The corresponding total regional population sex ratio is expected to be 100.8.

60+ Years Cohort

- There will be 534 persons aged 60+ years, representing 20.9% of the total regional population.
- There will be 289 Aboriginal persons, representing 54.1% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 245, representing 45.9% of this age cohort.
- There will be 259 males, representing 48.5% of the population aged 60+ years. Females will account for a total of 275, representing 51.5% of the population. The corresponding population sex ratio for this age cohort is expected to be 94.2.

70+ Years Cohort

- There will be 248 persons aged 70+ years, representing 9.7% of the total regional population.
- There will be 126 Aboriginal persons, representing 50.8% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 122, representing 49.2% of this age cohort.
- There will be 110 males, representing 44.4% of the population aged 70+ years. Females will account for a total of 138, representing 55.7% of the population. The corresponding population sex ratio for this age cohort is expected to be 79.7.

Region: South Slave (Hay River), 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 3,790, representing 8.6% of the total NWT population (44,156).
- There will be 1,764 Aboriginal persons, representing 46.5% of the total regional population. Non-Aboriginal persons will total 2,026, representing 53.5% of the regional population.
- There will be 1,930 males, representing 50.9% of the population. Females will account for a total of 1,860, representing 49.1% of the population. The corresponding total regional population sex ratio is expected to be 103.8.

60+ Years Cohort

- There will be 893 persons aged 60+ years, representing 23.6% of the total regional population.
- There will be 342 Aboriginal persons, representing 38.3% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 551, representing 61.7% of this age cohort.
- There will be 447 males, representing 50.1% of the population aged 60+ years. Females will account for a total of 446, representing 49.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 100.2.

70+ Years Cohort

- There will be 372 persons aged 70+ years, representing 9.8% of the total regional population.
- There will be 138 Aboriginal persons, representing 37.1% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 234, representing 62.9% of this age cohort.
- There will be 171 males, representing 46.0% of the population aged 70+ years. Females will account for a total of 201, representing 54.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 85.1.

Region: Sahtu, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 2,557, representing 5.8% of the total NWT population (44,156).
- There will be 1,942 Aboriginal persons, representing 76.0% of the total regional population. Non-Aboriginal persons will total 615, representing 24.0% of the regional population.
- There will be 1,324 males, representing 51.8% of the population. Females will account for a total of 1,233, representing 48.2% of the population. The corresponding total regional population sex ratio is expected to be 107.4.

60+ Years Cohort

- There will be 461 persons aged 60+ years, representing 18.0% of the total regional population.
- There will be 318 Aboriginal persons, representing 69.0% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 143, representing 31.0% of this age cohort.
- There will be 240 males, representing 52.1% of the population aged 60+ years. Females will account for a total of 221, representing 47.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 108.6.

70+ Years Cohort

- There will be 203 persons aged 70+ years, representing 7.9% of the total regional population.
- There will be 149 Aboriginal persons, representing 73.4% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 54, representing 26.6% of this age cohort.
- There will be 104 males, representing 51.2% of the population aged 70+ years. Females will account for a total of 99, representing 48.8% of the population. The corresponding population sex ratio for this age cohort is expected to be 105.1.

Region: Tlicho, 2014 to 2023

Total Regional Population

- By 2023, the total regional population is projected to be 3,024, representing 6.9% of the total NWT population (44,156).
- There will be 2,859 Aboriginal persons, representing 94.5% of the total regional population. Non-Aboriginal persons will total 165, representing 5.5% of the regional population.
- There will be 1,537 males, representing 50.4% of the population. Females will account for a total of 1,487, representing 49.2% of the population. The corresponding total regional population sex ratio is expected to be 103.4.

60+ Years Cohort

- There will be 375 persons aged 60+ years, representing 12.4% of the total regional population.
- There will be 340 Aboriginal persons, representing 90.7% of the population aged 60+ years. Non-Aboriginal persons will account for a total of 35, representing 9.3% of this age cohort.
- There will be 195 males, representing 52.0% of the population aged 60+ years. Females will account for a total of 180, representing 48.0% of the population. The corresponding population sex ratio for this age cohort is expected to be 108.3.

70+ Years Cohort

- There will be 156 persons aged 70+ years, representing 5.2% of the total regional population.
- There will be 140 Aboriginal persons, representing 89.7% of the population aged 70+ years. Non-Aboriginal persons will account for a total of 16, representing 10.3% of this age cohort.
- There will be 74 males, representing 47.4% of the population aged 70+ years. Females will account for a total of 82 representing 52.6% of the population. The corresponding population sex ratio for this age cohort is expected to be 90.2.

6.0 LONG-TERM CARE PROGRAM AND FACILITY ADMINISTRATIVE DATA

6.1 Long-Term Care Bed Inventory

The existing LTC bed inventory (as of July 8, 2015) consists of 174 beds. This was comprised of 161 dedicated LTC beds and 13 respite beds. Table 6.1 presents the current LTC beds for the NWT and by regional facility. Expansion of the LTC bed inventory by 27 beds will occur during FY 2016-17 and involves the following facilities under development:

- The Tlicho region (Behchoko) with 9 beds. A nine (9) pod facility was completed in FY 2014-15 and the second 9 bed pod will be completed in 2016;
- Sahtu region (Norman Wells) with an 18 bed pod facility. This will be connected to the new Health Centre;
- The South Slave/Hay River facility in H.H. Williams is closing and a new 9 pod facility is being added to Woodland Manor;
- There is, as of October 2015, an approved extended care facility consisting of 18 beds in Yellowknife as part of the Stanton Territorial Hospital Renewal Project. This will replace the existing 10 ECU beds, 1 palliative bed and 1 respite bed with a new 18 bed pod facility, comprising of 16 ECU beds, 1 palliative bed, and 1 respite bed. This would add an additional 8 new beds to the total inventory by FY 2017-18. Final decisions regarding construction start and end period are pending, consequently these are excluded from the bed demand projections in the review.

Distribution of LTC Beds in FY 2016-17

The projected distribution of LTC beds in FY 2016-17 is presented in Table 6.1. There will generally be a close alignment (i.e., a relatively small variance) between the percentage of beds and the proportion of the 70+ years cohort in the regions. This reflects the historical regional programing and facility investment decisions (as discussed in Section 2.3 regarding the history and chronology of the LTC Program).

In FY 2016-17, there will be four regions with LTC beds slightly over the proportion of the 70+ years cohort. The regions, and their percentage variance, are: Tlicho (+2.7%), Sahtu (+1.6%), Fort Smith (+4.6%), and, Yellowknife (+0.9%). There will be three regions with LTC beds slightly under the proportion of the 70+ years cohort. The regions, and their percentage variance, are: Beaufort Delta (-6.1%), South Slave (Hay River) (-2.0%), and Dehcho (-1.7%).

The current DHSS facility design standard is based on a pod structure with either 9 or 18 beds, which results in fixed bed supply thresholds. This contributes to scenarios of consequential short term over or under capacity, relative to the demographic based demand projections.

Table 6.1: NWT LTC Bed Inventory, 2015-16 and 2016-17

									FY 2016-17	
Region	**Community**	**Name of Facility**	**Total Beds**	**Current LTC Beds**	**Respite Bed(s) Total**	**LTC beds pending in 2016**	**Respite beds to be added 2016**	**Total Beds FY 2016-17**	**% of Total LTC Beds**	**% of Total NWT 70+ Cohort**
Tlicho	Behchoko	TBD	9	8	1	8	1	18	9.00	6.30
Beaufort-Delta Health and Social Services Authority	Inuvik	Inuvik Hospital Long Term Care Unit	25	22	3			25	12.40	18.50
Sahtu Health and Social Services Authority	Norman Wells	TBD	0	0	0	16	2	18	9.00	7.40
Fort Smith Health and Social Services Authority	Fort Smith	Northern Lights Special Care Home	28	26	2			28	13.90	9.30
Hay River Health and Social Services Authority	Hay River	H.H. Williams & Woodland Manor	25	25	0	0	0	25	12.40	14.40
Dehcho Health and Social Services Authority	Fort Simpson	Fort Simpson Elders' Care Home	18	17	1	0	0	18	9.00	10.70
Yellowknife Health and Social Services Authority	Yellowknife	Aven Manor	29	28	1	0	0	29	34.30	33.40
Yellowknife Health and Social Services Authority	Yellowknife	Territorial Dementia Facility	28	25	3	0	0	28		
Stanton Territorial Health Authority	Yellowknife	Stanton Territorial Hospital Extended Care Unit	12	10	2	0	0	12		
		NWT LTC Inventory Totals	**174**	**161**	**13**	**24**	**3**	**201**	**100.00**	**100.00**

Notes:

(1) Last updated July 8, 2015

(2) One 9 bed pod was completed in 2014-15 and the second pod is under construction which will add an additional 9 beds

(3) An 18 bed LTC unit is being constructed in Norman Wells connect to the new Health Centre

(4) HH Williams LTC Unit is closing and a 9 bed pod is being added to Woodland Manor, renovations within WM will create 1 room for respite

(5) Percentage (rounded) of LTC beds combined for the Yellowknife region

(6) Percentage (rounded) of total NWT 70+ Cohort (n=1991) projected for Calendar Year 2017

6.2 Territorial Admissions Committee Wait List

The Territorial Admissions Committee (TAC) is responsible for maintaining a Wait List for applicants that have been assessed and are eligible for placement into a facility (see Section 2.6 for a detailed discussion on the TAC mandate).

In FY 2014-15 the TAC approved 38 applicants and their average 'wait' was 98 days. The combined total days for all 38 clients was 3,710 days. As of November 3, 2015 there were 32 new approved applicants on the Wait List, along with four (4) existing residents waiting for transfer to another facility (closer to their home region/community), which to not impact the overall known demand as these beds may/will become available for re-allocation to another applicant on the Wait List. There were 5 vacant beds in Fort Smith and 3 in the Stanton Hospital ECU as a result of refusals of offer of service by applicants.

The Offer of Service for the first available bed protocol to an eligible applicant on the Wait List is generally accepted. There are however, a small number of applicants who decline a first bed offer, and while they are given no additional priority (beyond the actual practice of determining priority according to their care needs) are placed back on the Wait List, there are impacts on the LTC Program, including: (i) results in unnecessarily empty beds; and, (ii) puts pressure on the related services and resources in Continuing Care Services (i.e., home and community care, and palliative care). The TAC Wait List is a critical part of the actual bed demand projections and the operationalization in the Model as discussed in Section 7.2.

6.3 Program Financial Overview

6.3.1 LTC Facility Room and Board Rate Co-Payment

Financial Analysis: 2010-11 to 2014-15

Analysis of the LTC Program financial data (provided by the Finance Division, September 4 and 15, 2015) for FY 2010-11 to 2014-15, provides an important component for the review by putting the operating cost (i.e., *not fully burdened costs*) and revenue (*excluding any potential resident co-payment arrears*) into context. The review is not a financial audit, but rather is intended to establish reasonable costs and revenue benchmarks to support the development of bed demand and supply options.

The detailed financial data regarding budget, expenses, revenue and net expenses (rounded) for each facility and the total program is provided below in Table 6.2. The following are the key findings.

- ***Total Budget:*** The total LTC Program budget for FY 2014-15 was some $22.2 million. Actual expenses were $23.6 million, with revenue at about $1.0 million. This resulted in net expenses of $ 22.6 million.

- ***Budget Changes:*** The total LTC Program budget (unadjusted) has increased each year since FY 2010-11 ($17.7 million). The overall budget has increased by $4.4 million over the five-year period, representing a growth of some 25%. The largest budget change occurred between FY 2010-11 and 2011-12, with an increase of $2.1 million, representing a growth of some 12%.

- The approved budget for FY 2015-16 is some $23.2 million.

- ***System-Wide Cost per Bed:*** The cost per bed is not a '*fully burdened*' representation based on the fact that a number of indirect and/or centralized expenses are not included – such as: utilities and maintenance, and lease costs (managed by Public Works and Services); Staffing services (provided by the Department of Human Resources); and, Technology and administration support costs. The FY 2014-15 actual expenses were $23.6 million for 174 beds in inventory. This works out to an approximate annual cost of $136,000 per bed. The equivalent cost per month per bed was just over $11,300. The daily cost per bed works out to about $370. Section 7.8 provides cost data from selected jurisdictions.

  Revenue vs. Expenses: Examining the FY 2014-15 revenue of some $1.0 million and expenses $23.6 million shows that only about 4% of expenses were billed (but not necessarily recovered). This resulted in a GNWT 'subsidy' level of some 96%. Additional observations regarding expenses, revenue and variance are provided below.

Table 6.2: NWT LTC Program Budget, Expenses and Revenue, 2010-11 to 2014-15

Long Term Care		2010-11 Finals				2011-12 Finals				2012-13 Finals				2013-14 Finals				2014-15 Finals				2015-16
HSSA	Facility	Budget	Expenses	Revenue	Net Expenses	Budget	Expenses	Revenue	Net Expenses	Budget	Expenses	Revenue	Net Expenses	Budget	Expenses	Revenue	Net Expenses	Budget	Expenses	Revenue	Net Expenses	Approved Budget
FSHSSA	Northern Lights Special Care Home	2,220,393	2,493,072	206,715	2,286,357	2,960,897	3,550,366	190,446	3,359,920	3,179,000	3,767,437	194,201	3,573,236	2,985,000	3,446,477	218,377	3,228,100	3,150,622	3,318,475	246,499	3,071,976	3,289,500
HRHSSA	Woodland Manor	1,642,300	1,546,204	127,360	1,418,844	1,799,500	1,719,270	126,222	1,593,048	1,662,220	1,792,003	132,664	1,659,339	1,700,862	1,802,140	138,204	1,663,936	1,760,292	1,859,947	145,395	1,714,552	1,740,246
HRHSSA	LTC Unit H.H. Williams	1,293,450	1,041,738	87,752	953,986	1,128,650	999,412	83,180	916,232	1,063,348	1,080,992	88,492	992,500	1,020,699	1,179,538	118,228	1,061,310	1,079,983	1,167,426	85,591	1,081,835	1,062,984
BDHSSA	LTC Unit Inuvik Hospital	1,937,196	2,901,098	454,371	2,446,727	3,103,522	3,042,030	359,848	2,682,182	2,755,952	2,700,269	219,748	2,480,521	2,857,698	2,927,266	239,618	2,687,648	2,916,845	3,134,328	217,039	2,917,289	2,947,104
STHA	Extended Care Unit Stanton Hospital	1,896,642	1,781,920	72,103	1,709,817	1,956,782	1,867,831	76,304	1,791,527	1,955,214	1,975,638	75,977	1,899,661	2,002,689	2,010,738	71,619	1,939,119	2,084,041	2,082,099	63,149	2,018,950	2,108,242
DHSSA	LTC Fort Simpson (Elder's Care Home)	1,235,809	1,356,036	167,720	1,188,316	1,285,150	1,620,614	160,804	1,459,810	1,425,926	1,636,748	141,774	1,494,974	1,673,822	2,027,582	175,699	1,851,883	1,992,354	2,339,686	161,886	2,177,800	1,990,791
TCSA	Jimmy Erasmus Seniors Home	1,276,950	1,497,760	63,920	1,433,840	1,333,847	1,605,029	61,657	1,543,372	1,472,335	1,474,182	88,492	1,385,690	1,449,737	1,650,083	72,324	1,577,759	1,922,008	2,296,135	74,147	2,221,988	2,828,000
YHSSA	Territorial Dementia Facility - Aven Cottages	3,503,000	3,503,000		3,503,000	3,503,000	3,502,998		3,502,998	3,565,000	3,565,000		3,565,000	3,633,000	3,633,000		3,633,000	3,633,000	3,633,000		3,633,000	3,633,000
YHSSA	Aven Manor	2,742,223	2,742,224		2,742,224	2,805,223	2,911,223		2,911,223	2,979,223	2,979,719		2,979,719	3,642,223	3,642,223		3,642,223	3,642,223	3,803,512		3,803,512	3,642,223
	Total	17,747,963	18,863,052	1,179,941	17,683,111	19,876,571	20,818,773	1,058,461	19,760,312	20,058,218	20,971,987	941,348	20,030,639	20,965,730	22,319,047	1,034,069	21,284,978	22,181,368	23,634,608	993,706	22,640,902	23,242,090

Program Revenue and Expenses: 2010 to 2015

The LTC Program revenue generated, as a percentage of expenses are summarized below. Over the five-year period revenue accounted for between 4.2% (2014-15) and 6.3% (2010-11). The average for the period was some 4.9%, representing a GNWT subsidy of 95%. The revenue figures reported do not include information on any potential resident co-payment arrears.

Year	Revenue as % of Expenses	GNWT Subsidy %
2014-15	4.20	95.80
2013-14	4.63	95.37
2012-13	4.49	95.52
2011-12	5.08	94.92
2010-11	6.26	93.74
Average	**4.93**	**95.07**

Program Budget, Expenses and Variance: 2010 to 2015

Review of the financial data (see Table 6.2) indicates that, excluding annual revenue generated, the LTC Program experienced a negative budget variance in each of the five years.

The LTC Program variance for FY 2010-15 is summarized below. The variance ranged from a low of 4.6% (2012-13) to a high of 6.6% (2014-15). The average annual variance was $1.2 million, representing some 5.7%. The budget variance has grown each year since 2012-13, increasing from about 4.6% (2012-13) to 6.6% (2014-15).

Year	Variance (Dollars)	Variance (Percentage)
2014-15	(1,453,240)	6.55
2013-14	(1,353,317)	6.45
2012-13	(913,769)	4.56
2011-12	(942,202)	4.74
2010-11	(1,115, 089)	6.28
Average	**(1,155,523)**	**5.72**

6.4 Regulation Based Facility Resident Co-Payment Charges

LTC facilities provide a wide range of personal support, physical, social and mental health services to individuals who require a high level of assistance. Facilities are designed for individuals who are no longer able to live independently in their own homes or with family, and require on-site supervision in a safe setting.

Services in LTC facilities include meals, laundry services, housekeeping, social and recreational programs, medication administration, and assistance with ADL. In order to provide this specialized service, LTC facilities are staffed with a range of professionals from registered nurses, licensed practical nurses, resident care attendants, as well as personnel in laundry, kitchen, recreation, maintenance and administration. The operational costs reflect the range and scope of services provided for residents.

The provision of LTC services is under the *Health and Social Services Administration Act* and *Hospital Insurance Regulations* (see Section 2.4 for discussion). Facility charges are set out in section 10 to 12 of the *Regulations*.

The provisions directly relevant to the financial analysis are contained in section 11 (7) that set out the maximum charges for residents: "*For the purposes of calculating the monthly charge that may be established under subsection (3) for the fiscal year beginning April 1, 2013, the charges established for the preceding fiscal year referred to in subsection (4) are as follows: (a) for an insured person who is under 19 years of age: $314; (b) for an insured person who is 19 years of age or older: $746.*"

The monthly charges for FY 2015-16 for those over 19 years of age is $772. The setting of the maximum facility charges has a significant impact on revenue generation. Section 7.6 and 7.7 provide additional discussion on the impact of the maximum facility charges on policy options (i.e., funding models).

6.4.1 LTC Facility Capital Investment Costs

The capital investment costs for LTC facilities were reviewed with the Infrastructure Planning Division, DHSS. The capital cost observations are based on the current capital projects under way in Norman Wells and Behchoko, as well as preliminary data from the Stanton Territorial Hospital Renewal Project.

- The approximate 'all-in' cost (as of March 2015) per bed is $0.8 to $1.2 million, with the higher costs projected for Stanton due to the additional design criteria and equipment necessary to care for individuals with more complex health status.
- The costs exclude the following: (i) GNWT technical and program staff (DHSS and PWS) time/cost; and, (ii) inflation and other external costs drivers that may potentially impact the cost of future projects.
- The DHSS LTC facility design standard is the 9 and 18 bed pod design. The small scale of the facilities contributes to the significantly higher per bed costs relative to larger facilities where economies of scale can be achieved in terms of construction and operational costs (see Section 7.8 for information on comparative capital costs from selected jurisdictions).
- The time horizon to get a get a facility from initial planning to occupancy is impacted by a number of factors, but falls into two general scenarios under the existing capital planning and contracting process. (i) if the demand has been clearly established and there is GNWT support, a project can take from three (3) to five (5) years; and, (ii) if the demand is not fully demonstrated and the overall level of GNWT support is lower, the project can take from seven (7) to ten (10) years.

In the context of the population projections and bed demand projections (see Section 7 for discussion), there may be a need to consider a more innovative approach to the design and construction of facilities to more optimally align the timing of demand for the supply of LTC beds through decreased project time and cost.

The GNWT has recent experience with such an approach that was taken in two projects involving federal-territorial cost sharing. The first was the completion of five water treatment plant upgrades in communities under the Municipal Rural Infrastructure Funding Program. The second was through the Build Canada Program that enables band communities to access and procure capital planning, design and construction expertise.

6.5 Long-Term Care Facility Residents Profile

Review and analysis of a range of administrations data was completed to more fully inform the demand for and supply of LTC facilities. While the administrative data covers a five-year period, the relatively small number of facilities and residents resulted in the analysis focusing on aggregate and cumulative program patterns and trends, rather than individual years. The key observations regarding residents' profile are:

- The number of facility beds ranged from 153 (FY 2012-13 and 2013-14) to 161 (FY 2014-15);
- There were a total of 934 residents in the LTC system during the five-year period. This represents an average of 187 residents per year 'flowing through' the facilities. The number of residents ranged from 171 to 197;
- There were a total of 582 Aboriginal residents, representing some 62% of the total resident population. There were 352 non-Aboriginal residents, representing some 38% of the total resident population;
- There were 461 male residents (49%) and 473 female (51%);
- Of the 461 male residents, 270 (59%) were Aboriginal, with 191 (41%) non-Aboriginal; and
- Of the 473 female residents, 312 (66%) were Aboriginal, with 161 (34%) non-Aboriginal.

6.6 Long-Term Care Facilities Length of Stay

Interpreting LOS data needs to be done in the context of factors and caveats that program staff have identified as impacting LOS patterns: (i) resident health status on admission, where those with advanced chronic conditions generally have shorter LOS; (ii) most residents die in their facility (rather than being transferred out); (iii) LOS data can also be impacted by residents being transferred to a higher LOC (i.e., in cases with advanced dementia and risk factors) or alternate living arrangement (i.e., supported living); (iv) residents could potentially be moved into a palliative bed or intensive care bed; and, (v) variation in life expectancy based on gender and ethnicity.

Average Length of Stay

The average LOS (days rounded) for all NWT LTC facility residents over the FY 2010-11 to 2014-15 period was 1,113 days (3.05 years). The LOS ranged from a high of 1,152 days (3.16 years) in 2012-13 to a low of 1,014 days (2.78 years) in 2010-11.

LOS by Admission Category

In the context of the 'average' LOS, it is important to consider both the patterns of LOS overall and the variation in resident admission category. Of particular significance is the impact on LOS from the implementation of the new assessment process through the TAC in April 2009, and the role of the Stanton ECU beds in system-wide LTC capacity.

TAC Assessment Process

Prior to the TAC process, each HSSA had its own process and criteria for admission. This resulted in cases where some applicants who may have been at a LOC 1 or 2 rather than the LOC 3 and 4 (now used as the criteria), were admitted into a facility. Additionally, some of these admissions would have been relatively younger than the average TAC admission age. The lack of alternatives in some communities (i.e., supportive living, home and community care services, family/spouse care assistance) may have necessitated placement into LTC facilities.

The impact overall on LOS patterns is the distortion of the LOS data that shows some residents being in the facility for substantially longer periods of time (e.g., from 4,000 to over 10,000 days). Consequently, interpretation of the data through the TAC process transition and implementation period needs to take into account the age and LOC at admission.

Stanton Extended Care Unit Beds

The data for Stanton's ECU beds also distorts the average LOS due to the fact that many admissions are in situations where increasingly complex health needs are required by a resident (and they are likely already at LOC 5 or higher). Stanton currently has 1 palliative bed on its ECU. This is a designated bed for palliative patients, who mostly come from within the hospital. It is largely underutilized, which means it is generally available when needed. Palliative patients are not typically admitted to one of the 10 ECU beds. There is also a designated respite bed on the ECU; the respite bed generally requires advanced booking whereas the palliative bed does not.

Presented below are the results of analysis of the administrative data, organized under the following categories.

- Average LOS by admission category (Table 6.3);
- Average LOS by gender and ethnicity (Table 6.4); and
- Average age at death by gender and ethnicity (Table 6.5).

Table 6.3: Average LOS (Days) By Resident Admission Category, Combined NWT Facilities, 2010-11 to 2014-15

Year	Number Deceased	LOS By Resident Admission Category			
		All Residents Admission	TAC Admission *(including Stanton ECU)*	TAC Admission *(excluding Stanton ECU)*	Stanton Extended Care Unit (ECU)
2010-11	40	1,014	162	175	262
2011-12	34	1,152	251	243	294
2012-13	43	1,152	535	536	526
2013-14	41	1,148	360	376	232
2014-15	39	1,101	542	606	75
Average	**39**	**1,113**	**370**	**387**	**278**

Table 6.4: Average LOS (Days) By Gender and Ethnicity, All Residents, Combined NWT Facilities, 2010-11 to 2014-15

Year	Gender		Ethnicity	
	Male	Female	Aboriginal	Non-Aboriginal
2010-11	555	1,778	623	1,600
2011-12	1,080	1,242	1,111	1,266
2012-13	882	1,493	985	1,384
2013-14	1,364	962	1,071	1,297
2014-15	1,103	1,100	1,232	807
Average	**997**	**1,315**	**1,004**	**1,271**

Table 6.5: Average Age at Death (Years) By Gender and Ethnicity, All Residents, Combined NWT Facilities, 2010-11 to 2014-15

Year	All Residents Average	Gender		Ethnicity	
		Male	Female	Aboriginal	Non-Aboriginal
2010-11	75.75	73.40	79.67	73.46	79.19
2011-12	75.82	69.26	84.13	75.76	76.00
2012-13	80.35	76.50	85.21	80.32	80.39
2013-14	83.12	81.42	84.59	83.11	83.14
2014-15	82.64	82.13	83.00	82.78	82.33
Average	**79.54**	**76.54**	**83.32**	**79.09**	**80.21**

While there are significant variations by admission category on a year-to-year basis, there are observed patterns and trends. The key observations to draw from the data are:

Key Observations

- *The 'average'* LOS for all deceased residents over the five-year period was 1,113 days (3.05 years);
- The average LOS for those admitted through the TAC process (*including* Stanton ECU) was 370 days (1.01 years). This is a difference of 743 days (2.04 years), or some 33% of the average LOS for all residents;
- The average LOS for residents admitted through the TAC process (*excluding* Stanton ECU) was 387 days (1.06 years). This is a difference of 726 days (1.99 years), or some 35% of the average LOS for all residents;
- The impact of including or excluding the Stanton ECU beds is minor, reflecting a difference of 17 days, representing some 5% more in LOS by excluding the Stanton ECU beds; and
- The average LOS in the Stanton ECU was 278 days (0.76 years). This is a difference of 835 days (2.29 years) from the average LOS for all residents, and 109 days (0.30 years) for TAC process admissions (excluding Stanton ECU). There was also a significant range on a year to year basis over the five-year period, reflected by a low LOS of 75 days (0.21 years) in 2014-15, to a high LOS of 526 days (1.44 years) in 2012-13.

6.7 Mortality Patterns and Rates by Region and Facility

NWT Life Expectancy

The NWT life expectancy data from Statistics Canada for the 2009-2011 period indicates that at birth males have a projected life expectancy of 76.28 years and females have 80.07 years. At age 65, the life expectancy of males is 17.76 years and 20.23 for females. The following summary table shows life expectancy at birth and 65 for Canada and the three territories (Statistics Canada 2013).

	At Birth		At Age 65	
	Males	**Females**	**Males**	**Females**
Canada	79.33	83.60	18.82	21.73
NWT	**76.28**	**80.07**	**17.76**	**20.23**
Yukon	75.19	79.61	6.24	18.87
Nunavut	68.75	73.91	14.55	15.39

In terms of variation between Aboriginal and non-Aboriginal population, the data is less complete. A key reference to Aboriginal mortality and life expectancy is Malenfant and Morency (2012). Given the limited specific data for the NWT, the report does provide relevant insight respecting disparity in Aboriginal health status and mortality rates. The main observations are:

- Studies focusing on the mortality of the Aboriginal peoples in Canada, including Verma et al. (2004), Wilkins et al. (2008a), Wilkins et al. (2008b), and Tjepkema and Wilkins (2011) have '*shown that their mortality remains higher than that of non-Aboriginal people'*; and
- For the period 2004 to 2007, a life expectancy for Inuit of 68 years for men and 74 years for women, approximately *10 years less* than for the Canadian population as a whole (see the discussion regarding NWT population health status and hospitalization rates in Section 3.4).

LTC Program Crude Mortality Rates, 2010-11 to 2014-15

Continuing Care Program staff prepared custom detailed tabulations on residents' profiles (age, gender, ethnicity, LOS and mortality) from administrative data. Analysis of the data was supported by additional cross-tabulations, provided an essential perspective on facility residents with respect to LOS and mortality rates (i.e., resident crude death rates). The death rates are non-standardized due to the small numbers resulting from cross-tabulation of selected variables. The data and results are summarized in the following tables and figures, with observations made following the tables and figures.

- Deceased residents and selected characteristics (all facilities combined) (Table 6.6, Figures 6.1 and 6.2);
- Deceased residents by gender and ethnicity, NWT and facilities (Table 6.7, Figures 6.3 and 6.4); and
- Resident mortality by region and facility (Table 6.7).

Table 6.6: LTC Facilities, Deceased Residents and Selected Characteristics, NWT, 2010-11 to 2014-15

Year	Number of Deceased	Average LOS (days)	Average LOS (years)	Average Age at Death	Gender		Ethnicity	
					Male	Female	Aboriginal	Non-Aboriginal
2010-11	40	1,013.75	2.78	75.75	25	15	24	16
2011-12	34	1,151.76	3.16	75.82	19	15	25	9
2012-13	43	1,151.86	3.16	80.35	24	19	25	18
2013-14	41	1,148.10	3.15	83.12	19	22	27	14
2014-15	39	1,101.13	3.02	82.64	16	23	27	12
Total	**197**	**- - -**	**- - -**	**- - -**	**103**	**94**	**128**	**69**
Average Number	**39.40**	**1,113.32**	**3.05**	**79.54**	**20.60**	**18.80**	**25.60**	**13.80**
Average Percent	**- - -**	**- - -**	**- - -**	**- - -**	**52.28**	**47.72**	**65.00**	**35.00**

Figure 6.1: LTC Facilities, Length of Stay, Deceased Residents, NWT, 2010-11 to 2014-15

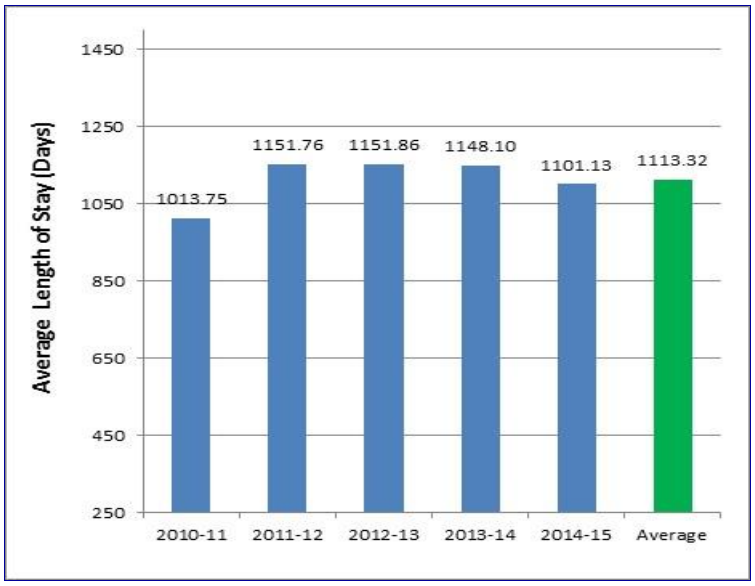


Figure 6.2: LTC Facilities, Average Age at Death, NWT, 2010-11 to 2014-15

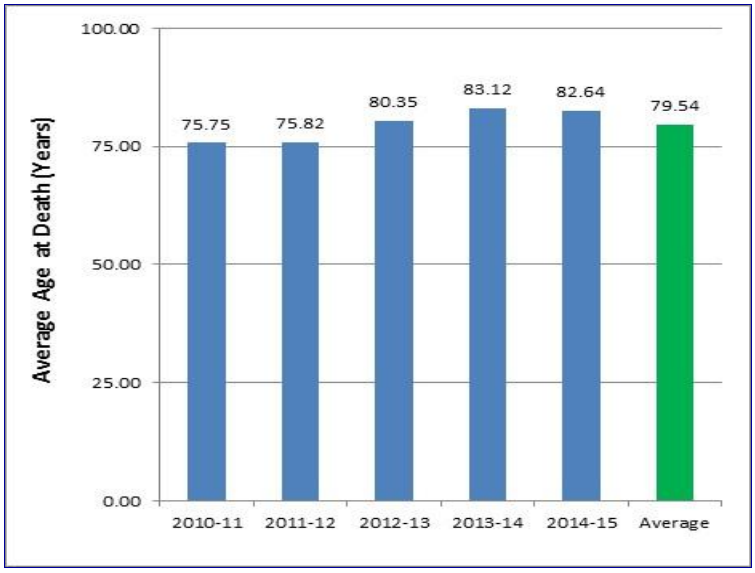


Table 6.7: Deceased LTC Residents, NWT and Regions by Facility, 2010-11 to 2014-15

Geographic Area	Community	LTC Facility	Deceased Residents: 2010-11 to 2014-15										Deceased Residents		
			2010-11		2011-12		2012-13		2013-14		2014-15				
			No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent of Total	Average Annual
Northwest Territories	---	---	**40**	**100.00**	**34**	**100.00**	**43**	**100.00**	**41**	**100.00**	**39**	**100.00**	**197**	**100.00**	**39.40**
Beaufort Delta	Inuvik	Inuvik Hospital LTC	6	15.00	5	14.71	7	16.28	7	17.07	8	20.51	33	16.75	6.60
Sahtu	---	(No Facility)	---	---	---	---	---	---	---	---	---	---	---	---	---
Dehcho	Ft. Simpson	Ft. Simpson Elders Care LTC	6	15.00	1	2.94	0	0.00	0	0.00	3	7.69	10	5.08	2.00
Tlicho	Behchoko	Jimmy Erasmus Seniors Home (JESH)	0	0.00	1	2.94	0	0.00	3	7.32	1	2.56	5	2.54	1.00
Yellowknife	Yellowknife	Stanton Hospital ECU	7	17.50	4	11.76	4	9.30	4	9.76	4	10.26	23	11.68	4.60
Yellowknife	Yellowknife	Aven Cottage (TDC)	5	12.50	3	8.82	5	11.63	5	12.20	3	7.69	21	10.66	4.20
Yellowknife	Yellowknife	Avens Manor	9	22.50	4	11.76	14	32.56	9	21.95	5	12.82	41	20.81	8.20
South Slave	Hay River	Hay River LTC	3	7.50	14	41.18	8	18.60	9	21.95	7	17.95	41	20.81	8.20
Fort Smith	Ft. Smith	Northern Lights Special Care Home (NLSCH)	4	10.00	2	5.88	5	11.63	4	9.76	8	20.51	23	11.68	4.60

Figure 6.3: LTC Facilities, Number of Deceased Residents, NWT, 2010-11 to 2014-15

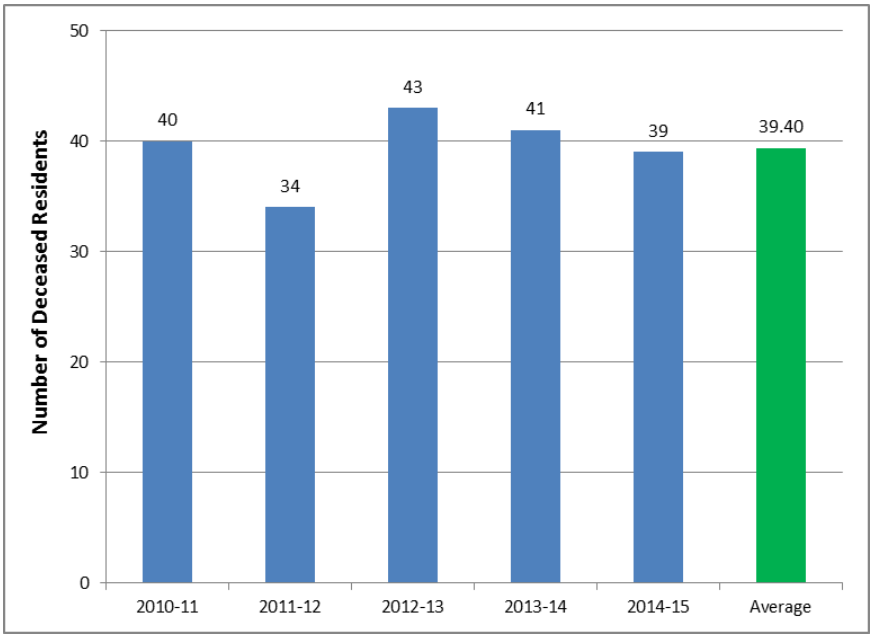
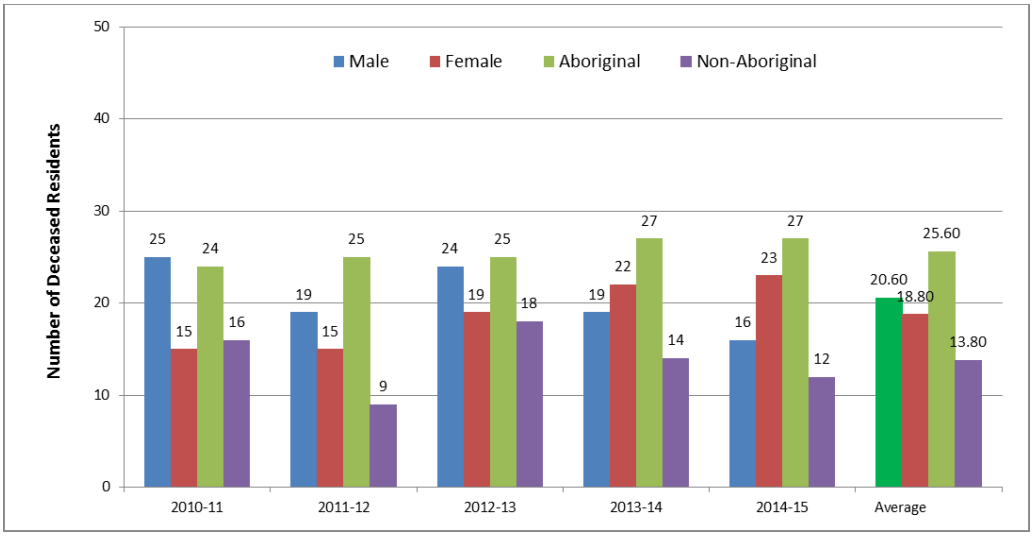


Figure 6.4: LTC Facilities, Deceased Residents by Gender and Ethnicity, 2010-11 to 2014-15



Deceased Residents and Crude Mortality Rates: Key Observations

- There were a total of 197 deaths of facility residents over the five-year period. This represents a crude mortality rate of 21 (21.09) per 100 residents (or 219.9 per 1,000);
- The number of deceased residents annually ranged from 34 to 43. The average number of deaths over the five-year period was 39 (39.40);

- There were 103 deceased males, representing some 52% of total deaths. This is a crude mortality rate of 22 (22.34) per 100 male residents (or 223 per 1,000). Females accounted for 94 deaths, representing some 48%. This is a rate of 20 (19.87) per 100 female residents (or 199 per 1,000), which are 2.47 deaths per 100 residents lower (12.4 %) than for males; and
- There were 128 deceased Aboriginal residents, representing some 65% of total deaths. This is a rate of 22 (21.99) per 100 Aboriginal residents (or 220 per 1,000). Non-Aboriginal deaths accounted for 69 deaths, representing some 35%. This is a rate of 20 (19.60) per 100 non-Aboriginal residents (or 196 per 1,000), which are 2.39 deaths per 100 residents lower (12.2%) than for Aboriginal residents.

LTC Facility Residents Age at Death: Key Observations

In broad terms, the average age at death for all facility residents has been increasing year over year, reflecting the cumulative impact of applicants' older age at admission (particularly post TAC process in 2009) and the probability of lower overall health status with more complex LOC needs. The key observations are:

- The average age at death for all facility residents for the five-year period was 79.54 years. This ranged from a high of 83.12 years in 2013-14, to a low of 75.75 years in 2010-11;
- The average age at death for male residents was 76.54 years and 83.32 for females. This represents a difference of 6.78 years (8.9%);
- The average age at death for male residents have shown a general pattern of increasing on a year over year basis. This increase was from a low of 69.26 years in 2011-12 to a high of 82.13 years in 2014-15. This reflects the cumulative impact of several factors: increasing life expectancy (of males and females overall); the TAC assessment process implemented in April 2009 (with age at admission increasing); and, the shorter LOS for males (997 days compared to 1,315 for females);
- The average age at death for females has also increased over time, although not to the same extent or degree of consistency year over year as for males. This is largely due to the historical longer life expectancy of females;
- While there is variation in the average age at death in terms of ethnicity, the variation is less than the data by gender. The average age at death for Aboriginal residents was 79.09 years compared to 80.21 for non-Aboriginal residents, a difference of 1.12 years (1.4%);
- The average age at death for Aboriginal residents has generally reflected an increase over the five-year period, from a low of 73.46 years in 2010-11 to a high of 83.11 years in 2013-14; and
- The average age at death for non-Aboriginal residents also shows a pattern of increasing over the five-year period, although not to the same extent as Aboriginal residents. The increase ranged from a low of 76.00 years in 2011-12 to a high of 83.14 years in 2013-14. This trend reflects the historically longer life expectancy of non-Aboriginal persons (males and female) and the corresponding longer LOS at 1,271 days compared to 1,004 for Aboriginal residents, representing a difference of 267 days or some 21%.

LTC Facility Resident Mortality by Region

The following observations regarding resident mortality by region and facility are provided in order to further inform the discussion regarding bed demand and supply at the regional level. There was a wide variation in the number of total and annual deaths in facilities over the five-year period, in part, reflecting the range of actual facility beds, LOC, and age profiles. No other administrative data on deceased residents was available. There were no LTC facilities in the Sahtu during the FY 2010-11 to

2014-15 period. An 18 bed facility is being completed and scheduled to open in FY 2016-17 (see Table 6.7, Table B and Figures 6.3 and 6.4).

Region: Beaufort Delta

- The region experienced a total of 33 deaths, representing some 17% of total NWT LTC facility deaths during the 2010-11 to 2014-15 period.
- There were an annual average of 6.6 resident deaths over the five-year period. This ranged from a low of 5 deaths in 2011-12 to a high of 8 in 2014-15.

Region: Dehcho

- The region experienced a total of 10 deaths, representing some 5% of total deaths.
- There were an annual average of 2.00 resident deaths over the five-year period. This ranged from a low of zero deaths in 2012-13 and 2013-14 to a high of 6 in 2010-11.

Region: Tlicho

- The region experienced a total of 5 deaths, representing some 3% of total deaths.
- There were an annual average of 1.0 resident deaths over the five-year period. This ranged from a low of zero deaths in 2010-11 and 2012-13 to a high of 3 in 2013-14.

Region: Yellowknife – Stanton Hospital Extended Care Unit

- The facility (ECU) experienced a total of 23 deaths, representing some 12% of total deaths.
- There were an annual average of 4.6 resident deaths over the five-year period. This ranged from a low of 4 deaths in each of 2011-12 through to 2014-15 to a high of 7 in 2010-11.

Region: Yellowknife – Aven Cottages

- The facility experienced a total of 21 deaths, representing some 11% of total deaths.
- There were an annual average of 4.2 resident deaths over the five-year period. This ranged from a low of 3 deaths in 2011-12 and 2014-15 to a high of 5 in each of 2010-11, 2012-13 and 2013-14.

Region: Yellowknife – Aven Manor

- The region experienced a total of 41 deaths, representing some 21% of total deaths.
- There were an annual average of 8.2 resident deaths over the five-year period. This ranged from a low of 4 deaths in 2011-12 to a high of 9 in 2010-11 and 2013-14.

Region: South Slave

- The region experienced a total of 41 deaths, representing some 21% of total deaths.
- There were an annual average of 8.2 resident deaths over the five-year period. This ranged from a low of 3 deaths in 2010-11 to a high of 14 in 2011-12.

Region: Fort Smith

- The region experienced a total of 23 deaths, representing some 12% of total deaths.
- There were an annual average of 4.6 resident deaths over the five-year period. This ranged from a low of 2 deaths in 2011-12 to a high of 8 in 2014-15.

6.7.1 Facility Mortality Rates: Impact on Bed Demand Projections and Final Bed Demand

Facility based mortality rates impact final bed demand projections and bed management decisions in a number of ways related to the process of bed demand projections and operationalizing the NWT LTC Model (as discussed in Sections 7.4 and 7.5). The LTC facility administrative data regarding residents' socio-demographic characteristics and mortality rates (presented in Sections 6.5 and 6.7) provide the necessary detailed context for consideration of the impacts on bed demand projections and bed management.

Mortality Rates in the General Population

Mortality rates in the general population (i.e., institutionalized and non-institutionalized persons) in the NWT and Canada, provide important reference points for the discussion and consideration of the impact of facility based mortality rates on bed demand.

Mortality rates in the general population, by age group and gender for the NWT, along with selected comparison to national rates, can be characterized as follows:

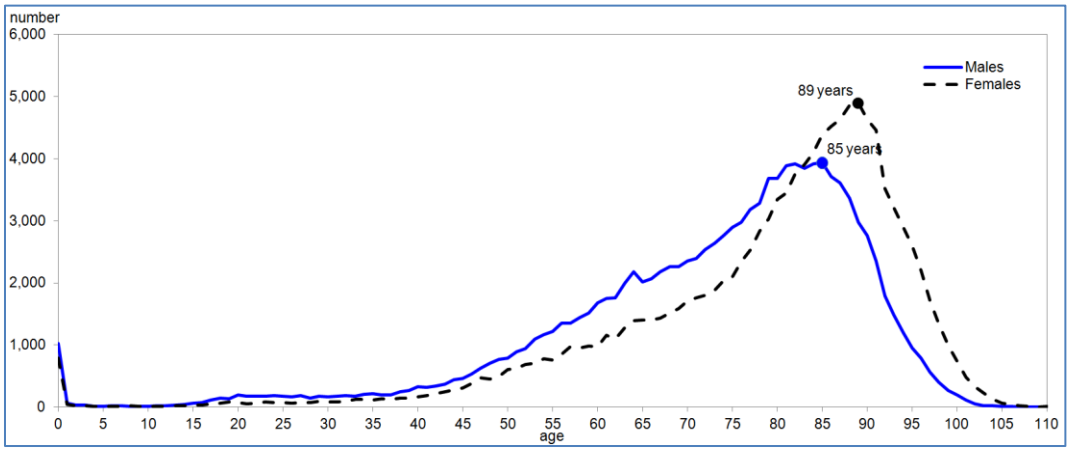
- The 1981 and 2011 crude mortality rates per 1,000 population in the NWT were 4.1 and 4.3, respectively. The corresponding rates for Canada were 6.9 and 7.0. The NWT's lower rate reflects the relatively '*younger*' age structure of the population compared to the national demographic structure;
- In 2011, the NWT experienced the following gender specific crude mortality rates: both sexes were 4.3; the rate for males was 4.8; and, 3.7 for females per 1,000; and
- Examination of the average crude mortality rates per 1,000 population over the 2007 to 2011 period indicates the following age and gender specific rates and patterns. This data was derived from Statistics Canada (2015c); and Martel (2013).

Age Cohort (Years)	NWT Rate Per 1,000 Population		Canada Rate Per 1,000 Population	
	Male	Female	Male	Female
15 to 24	1.4	0.5	0.6	0.3
25 to 44	2.1	1.0	1.0	0.6
45 to 64	6.1	4.1	4.9	3.2
65+	48.5	36.6	40.6	36.7

The following observations are made from the data.

- Mortality rates for the NWT and Canada increased with each older age cohort (e.g., for NWT males, 6.1 in the 45 to 64 group vs. 48.5 for the 65+ years cohort) overall and for both sexes. The rise in mortality rates is pronounced at the 65+ years cohort at the NWT and Canada level; and
- In 2011, at the national levels, the age at which the highest number of deaths was registered was 85 years for males and 89 years for females. For males, about 74% of all deaths occurred at 65+ years. The corresponding number for females was 83%. The graphic below illustrates the patterns and rates through total deaths by gender and age cohort.

Number of Deaths by Age and Sex, Canada, 2011



Source: Martel, L. Mortality: Overview, 2010 and 2011. Figure 3 (2013)

Senior Population Mortality

Given the focus of the review, it is essential to look in more detail at the mortality rates for the senior cohorts – those generally defined as 60+ years. The 2011 data from Statistics Canada (2015c) provides the NWT mortality rates per 1,000 seniors general population, by age and gender.

Mortality Rates per 1,000 Seniors Cohorts, General Population, By Age and Gender, NWT, 2011

Age Cohort (Years)	Both Sexes	Male	Female
60 to 64	9.6	8.8	10.8
65 to 69	21.6	27.0	14.0
70 to74	21.5	27.4	15.9
75 to 79	40.8	56.3	26.3
80 to 84	58.4	74.6	42.9
85 to 89	112.7	51.7	154.8
90+ Years	115.9	88.2	142.9

The national level mortality rates for the seniors' cohorts shown above, follows a similar overall pattern as the NWT. To illustrate, in the 70 to 74 years cohort, the rate for both sexes was 19.1, 23.5 for males, and 15.2 for females. Given the comparatively 'older' age structure at the national level, the mortality rates for those 90+ years were significantly higher (178.3 for both sexes, 194.7 for males, and 172.0 for females) than the NWT.

Mortality Rates in NWT Facilities

In the context of preceding discussion of mortality rates in the general population (i.e. institutionalized and non-institutionalized), the following examines the mortality rates in NWT LTC facilities and the implications for bed demand projections and bed management through operationalizing the Model (as discussed in Sections 7.2 to 7.4).

The aggregate and average facility mortality data (as discussed in Section 6.7) for the five-year period (FY 2010-11 to 2014-15) show the following patterns and rates. These aggregate and non-standardized mortality rates are substantively higher than the corresponding age cohorts in the general population rates in the NWT and Canada.

- There were a total of 197 deaths of facility residents over the five-year period. The annual number of deceased residents ranged from 34 to 43. The average number of deaths was 39.4;
- Average age at death for all facility residents was 79.54 years;
- Average crude mortality rate experienced was 21.09 per 100 residents (210.9 per 1,000);
- Males had a rate of 22.34 per 100 (223.4 per 1,000). The rate for females was 19.87 (or 198.7 per 1,000);
- Aboriginal residents experienced a mortality rate of 21.99 per 100 (219.9 per 1,000), compared to 19.60 (196.0 per 1,000) for non-Aboriginal;
- Average age of facility residents, LOC, and age at death, have been increasing; and
- Average LOS has been declining, reflecting the increasing age of residents and age at death post the TAC assessment process in 2009 (i.e., the average LOS for all residents was 1,113 days (3.05 years), compared to 370 days (1.01 years) for TAC admission residents).

Preliminary Mortality Data for FY 2015-16

The preliminary data for the first half of FY 2015-16 (April 1 to September 30, 2015) indicate similar emerging patterns for the full year based on the following observations: There have been a total of 15 deaths (6 males and 9 females), comprising 12 Aboriginal and 3 non-Aboriginal deaths. The average age at death was 83.4 years; and, average LOS was 1,821 days (with 7 pre-TAC admission residents having a LOS of 3,145 days compared to 8 TAC admission residents at 661 days).

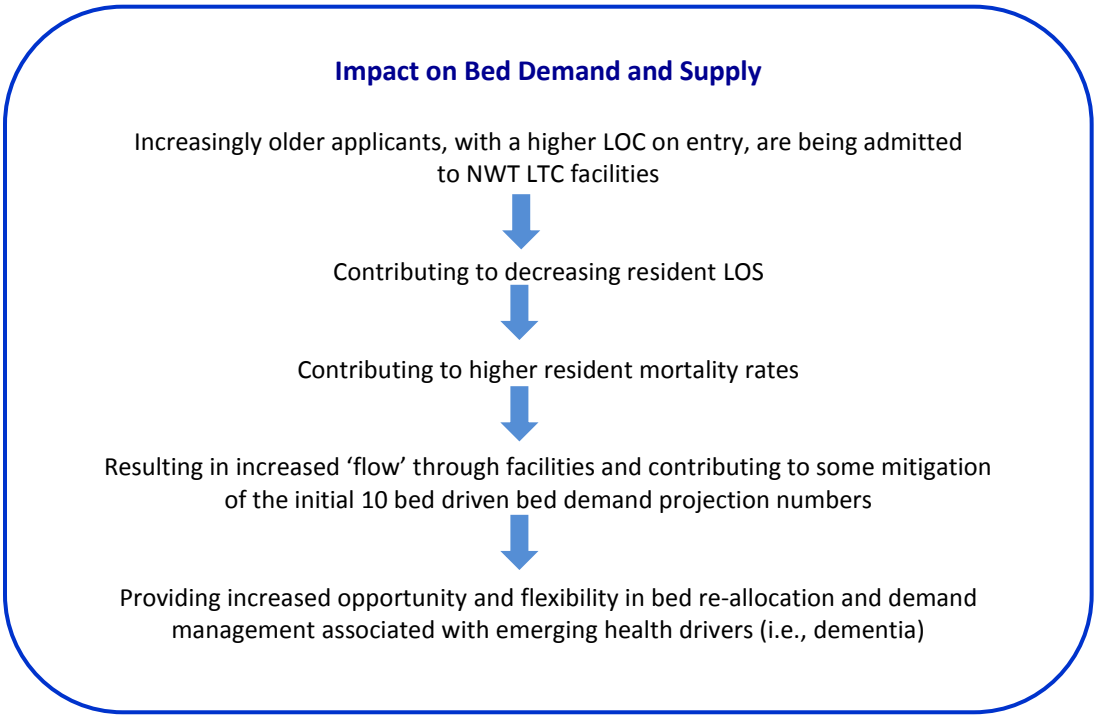
Impact on Bed Demand and Management

The death of a resident may occur anywhere from day 1 to day 365 in a year and as such, there are challenges to efficiently manage beds through re-allocation. Examination of Statistics Canada (2015d) shows no clear pattern of monthly deaths in the NWT. Additionally, for the five-year reference period, the month of death for residents at the individual facility level shows no particular pattern.

It is not possible to accurately project (through modeling) a given departure, in large part due to the complex variables and the small data set numbers involved. The observed *typical* full year pattern provides some insight (and flexibility) in final bed demand and management. Age specific mortality rates for the general population (by virtue of the underlying methodology) underestimate the rates for LTC facility residents. The review scope did not include undertaking research into facility deaths in other jurisdictions.

The projected increase in absolute numbers and the corresponding bed demand from the 70+ years cohort will peak post 2020 and continue a slow decline through to 2026, after which it will continue a slow decline through to 2034. It is reasonable to assume that this will extend the overall patterns and the trends in terms of age at admission into a facility, LOS, mortality, and age at death. Consequently, the monitoring and analysis of facility rates and patterns (overall as well as by LOC, gender and ethnicity) and the operationalization of the Model is essential to inform effective bed demand projections and actual bed management decisions.

The cumulative impact of the TAC assessment process, resident characteristics (i.e., age, gender, ethnicity and LOC), and facility mortality rates and patterns on bed demand are summarized in the following graphic:



7.0 NWT LONG-TERM CARE MODEL: CAPACITY ASSESSMENT, PLANNING AND MANAGEMENT

7.1 Long-Term Care Bed Demand Projection Models

There is extensive literature on LTC demand projection methods and models and their relative utility. This section provides an overview of the models to provide context for the rationale and methodology of the consolidated NWT LTC Model (the Model).

While the overview draws on a wide range of literature (published and unpublished), the primary sources are Zhang et al. (2012a), Zhang et al. (2012b), Hollander (2015); and, Coyte et al. (2000).

Approaches to Determining Utilization Ratios

The following presents an overview of the range of existing LTC (and home care) planning and resource allocation approaches. For clarity, the term 'utilization' refers to the extent to which a given population or group (e.g., seniors) use a particular service in a specified period of time, expressed in use per 1,000 population. The three basic approaches used in LTC demand projections are:

- Set Ratio Approach;
- Demand Based Approach; and
- Needs Based Approach

Set Ratio Approach

There are two variations of this approach. The first is the *Historical Financial Base Approach* in which resources are allocated by some version of an across-the-board budget increase. This is common in line-by-line and global budgeting systems. The second is the *Arbitrary Resource Ratio Approach* that assumes a fixed resource to population ratio (e.g., 70 beds per 1,000 total population 65+ years). This system is subject to the validity (and rationale) of the original ratio.

A recent illustration of this limitation was in the T-Square Architecture (2014) report which documented the challenges in attempting to use various fixed ratio guidelines for future bed demand projections for the new Whitehorse Continuing Care Facility, including: (i) CIHI national fixed ratio of 46 per 1,000 population aged 65+ years; and, (ii) existing Yukon bed ratio of 53 per 1,000 population aged 65+ years which did not reflect the actual utilization rate of 95.3 per 1,000. Ultimately, the demand projection and new facility design was based on a bed ratio of 62 per 1,000 population aged 65+ years.

Demand Based Approach

There are three variations of this approach. The *Basic Utilization Ratio Approach*, the *Population-Based Utilization Approach*; and, the *Resource Flow Method*.

(i) Basic Utilization Ratio Approaches

There are two versions of this approach. The first is the *Historical Utilization Base Approach (*most commonly used in initiatives related to projecting bed utilization). It projects future resource requirements based on the existing utilization ratio of resources per 1,000 people 65+ years. A variation of this approach is the *Wait List Data and Utilization Statistics Approach*. This approach makes projections based on actual utilization. However, it also includes a measure of 'unmet demand' by including some or all of the people on facility waiting lists.

(ii) Population-Based Utilization Approaches

There are a number of versions of this approach. The *Age-Specific per Capita Method* is a modified version of the Historical Utilization Base Approach. Instead of using an arbitrary ratio of beds for those 65+ years, specific targets are set for either 5-year or 10-year age cohorts of those 65+ years.

A second version is the *Socio-Demographic Utilization Approach* that uses a number of socio-demographic variables to project future service needs. Multivariate statistical analysis such as multiple regression is often used to manipulate the data in this approach. The main variables identified in the literature as being 'predictive' of need are:

- *Population Size*: Generally, the larger the population, the greater the need for services;
- *Age:* Older people are more likely to use LTC services;
- *Gender:* Women are more likely to use services than men;
- *Living Arrangements:* Those who live alone are more likely to need services;
- *Degree of Impairment:* The greater the degree of impairment in the Activities of Daily Living (ADL) the greater the need for service;
- *Mental Status:* The greater the degree of mental impairment the greater the need for services;
- *Marital Status:* Unmarried persons are more likely to need services; and
- *Socio-Economic Status:* Low income persons are more in need of services, while higher income persons have more resources to access services.

While the factors listed above can be used to project the need for future services, the literature indicates that they do not provide a highly accurate basis for anticipating actual service demand and utilization (see Sections 3.1 to 3.3 for a detailed discussion of the demand and supply side variables).

While in a general sense, the disparities in Aboriginal health status (mortality rates, life expectancy and hospital utilization rates) could be interpreted as being reflected in the category of socio-economic status (see the evidence as presented in Section 3.4) is that this is a much larger driver in the NWT (relative to other jurisdictions) given that just over half of the population is Aboriginal. Additionally, with the exception of Nunavut and Yukon Territory, the proportion of Aboriginal populations in Canada's provinces is substantively lower and which does not appear to be materially reflected in their bed ratios or utilization rates.

(iii) Resource Flow Method

The Resource Flow Method combines utilization information with other data such as admission rates, LOS for various LOC, waiting list data, death rates, and discharge rates. This approach is intended to enable timely access to facility beds for clients in a given area. This approach supplements projections of overall bed requirements with data on turnover rates (i.e., discharges and deaths).

Needs Based Approach

There are two variations of this approach: *Bed Survey Approach*, and the *General Survey Approach*. The approaches attempt to determine the extent of need in the population and base future resource demand on estimates of assumed need.

The *Bed Survey Approach* is one in which residents of LTC facilities are assessed to determine the extent to which current bed utilization is clinically appropriate on an individual client basis. Such a survey can be used to develop a system of ideal utilization ratios (particularly if the survey includes *potential clients* living in the community). Linear regression analysis is often used for analysis and to project demand. For larger jurisdictions, the capacity, as well as the scale and data requirements to run such model is less of a consideration than small jurisdictions.

The General Survey Approach has two variations: (i) the *Expert Opinion Survey Approach* polls 'experts' regarding the need for Continuing Care Services in their community; and, (ii) the *Population Survey Approach* is one in which a sample of the population is surveyed to determine their need for care. Such surveys may rely on interviews by professional care staff and may include actual tests of functional health status, such as ADL.

7.1.1 Models and Methods: Limitations and Best Practices

NWT LTC Bed Projection in Historical Context

The NWT has had numerous studies and projection done since 2002 (see the chronology in Section 2.2). A brief summary in presented in Table 7.1. The source data and calculations for the 115 and 120 per 1,000 population 70+ years are contained in Appendix E. This provides important context for the discussion of model limitations, best practices and potential options for the NWT.

The main observation to be made from Table 7.1 is the range of bed demand estimates (purely demographic driven and assuming zero [0] existing bed inventory) based on the projection model and

the underlying assumptions (e.g., bed ratio and the population cohort size). The projections for 2026 for example, could potentially range from a low of 229 beds to a high of 418 beds. This represents a difference of 189 beds or some 45% (from the higher estimate) and highlights the need for rigorous analysis and clarity of assumptions used.

Table 7.1: Comparison of Gross Demographic Driven Demand for LTC Beds Based on Selected Projection Models, NWT, 2014, 2026 and 2034

Projection Model & Source	Bed Ratio	2014		2026		2034	
		NWT Pop. In the Cohort	Beds Required	NWT Pop. In the Cohort	Beds Required	NWT Pop. In the Cohort	Beds Required
ISDM Report (2005) *(*Basis for Current Draft Projections-July 2015)*	120 per 1,000 Pop. 70+	1,687	202	3,482	418	5,207	625
PSAV Report Projections (2010)	115 per 1,000 Pop. 70+	1,687	194	3,482	400	5,207	599
MNP Report Projections (2013) *(*Model 1)*	110 per 1,000 Pop. 70+	1,687	186	3,482	383	5,207	573
Hollander Utilization Report Projections (2015)	(*Actual*) Utilization Ratio of 60.44 per 1,000 Pop. 65+	2,879	174	5,701	345	7,110	430
Manitoba LTC Model (2002)	120 per 1,000 Pop. 75+	982	118	2,084	250	3,211	385
Manitoba LTC Model (2012)	110 per 1,000 Pop. 75+	982	108	2,084	229	3,211	353
LTC Program Review (2015) *Draft: Scenario 1A*	**115 per 1,000 Pop. 70+**	**1,687**	**194**	**3,482**	**400**	**5,207**	**599**
LTC Program Review (2015) *Draft: Scenario 2A*	**120 per 1,000 Pop. 70+**	**1,687**	**202**	**3,482**	**418**	**5,207**	**625**

otes:

(1) Gross LTC bed demand excludes: LTC beds in inventory in 2016 (existing and under construction, n=201); TAC Wait List (n=38 in July 8, 2015)

(2) *ISDM-Reforming Facility & Medical Services in The NWT: A New Direction* (June 2005). The report established a "*more appropriate and reasonable population cohort*" as *70+* years of age (in contrast to the Canadian guideline of beds per 1,000 for a population cohort of 75+ years). Additionally, the bed ratio of *110 per 1,000* (Aged 75+) previously adopted from Manitoba was amended to *120 per 1,000* (Aged 70+) to more accurately reflect the demographic, health status (i.e., higher incidence of chronic diseases) and programming needs in the NWT. (*Source: pages: viii and ix, and 49-58*). The amended ISDM bed ratio is the basis for the new draft demand projections (at 100% bed occupancy assumption) for the NWT and regions.

(3) All prior projection models have been re-based to the 2014 actual NWT population for a common baseline reference.

(4) All bed required projections are rounded to the nearest whole number

(5) Bed demand projections for 2014 base year range from a low of 108 (Manitoba, 2012) to a high of 202 (ISDM Model (2005) and the current LTC Program Review – Draft Scenario 2A)

LTC Bed Demand Models: The Significance of Ethnicity

Most jurisdictions across Canada have, over the last two decades, reduced their demand projections for LTC, in part reflecting the shift to supported living, home and community care services, as well as the existence of bona fide private care options (profit and non-profit) in some provinces and territories. This is evident in the generally declining bed ratios and utilization rate methods. Examination of selected jurisdictions and their models (discussed in detail in Sections 3.1 to 3.3) indicates a number of limitations and the resulting reduced reliability/utility of the projections in actual bed management in the NWT.

Among the limitation is the fact that ethnicity is generally not addressed explicitly in the modeling assumptions and variables in most Canadian jurisdictions (other than the NWT). In the context of the health status disparity between the Aboriginal and non-Aboriginal population, actual utilization rates by Aboriginal residents in LTC facilities and the resulting impact LTC demand projections.

Drawing on statistics from the Frohlich et al. (2002), the reported ratios of 'nursing home beds' per 1,000 population aged 75+ years were 101 as the overall national ratio, and provinces ranged from a high of 126 in Manitoba to a low of 88 in Ontario. The BC Ministry of Health uses the following metric: 7% of seniors (those 65+ years) will be institutionalized (BC Seniors Services and Housing Information

Society 2011). Krause (1997) reported that from the mid-1980s to 1997, some 7% of seniors (those 65+ years) were in institutional care in Saskatchewan. Another 20% utilized Continuing Care Services.

Based on 2008 data reported in Hollander (2015), the utilization ratios and the seniors' target population vary widely across jurisdictions, with a low of 47 per 1,000 population aged 65+ years in BC, to a high of 60 in Manitoba. Examination of the comparative rates for the population aged 75+ years (which results in a significantly smaller absolute population base) indicates a low of 80 in Quebec to a high of 119 in Manitoba. The utilization ratio in Manitoba was reduced to 110 in 2012, in part, based on over-estimation of bed demand in their original model.

The bed ratios, and the seniors' target cohort, are lower compared to the NWT (i.e., 115 to 120 beds per 1,000 population aged 70+ years). The impact of using the 70+ years cohort compared to the 75+ years, at 120 beds per 1,000 population (assuming 100% bed occupancy) is demonstrated by comparing the bed demand projections for 2014 in the NWT. The variance is 84 beds, which represents a difference of some 42% (from the higher estimate).

2014 bed Demand based on ***70+*** *years* (1,687 persons): **202**

2014 bed Demand based on ***75+*** *years* (982 persons): **118**

This reflects the smaller absolute size of the 75+ years, with 982 persons, compared to the 70+ years cohort which consisted of 1,687 persons, a difference of 705 persons, or about 72%. The lower bed ratios in other Canadian jurisdictions reflect (at least to some degree) a significantly lower proportion of Aboriginal population. The following observations are based on 2011 census data (rounded, except for Canada).

- Canada's proportion of Aboriginal population was 4.3%;
- Nunavut had the highest proportion of Aboriginal persons at 87%;
- The NWT had the second highest Aboriginal population at 52%;
- The Yukon had the third largest share at 23%;
- Provinces with the highest proportion of Aboriginal population were Manitoba and Saskatchewan, 17% and 16%, respectively; and
- The other provinces had significantly lower proportions ranging from a low of 2% in Prince Edward Island to a relative high of 7% in Newfoundland and Labrador.

Limitations of Ratio-Based Demand Projections

The following summary of model limitations draws mainly on the work of Zhang et al. (2012b), Chateau et al. (2012) and, Coyte et al. (2002). Based on the literature review, a central observation is that the widely used fixed ratio per population 75+ years may *result in either excess capacity or long wait times* for admission into a LTC facility.

Lack of access to LTC facilities is frequently cited as the major causes for high volumes of alternative level of care (ALC) patients who no longer need acute services but occupy acute care beds waiting for

discharge or a more appropriate setting. Based on 2009 data from CIHI, these ALC patients accounted for 14% of hospital days in acute care hospitals, and 65% of ALC patients were waiting for admission to a LTC facility. The remainder was waiting for other services, including palliative care, rehabilitation or home and community care support.

In many provinces across Canada (as reflected in the inter-jurisdictional scan completed for the review) policy decisions were taken (and continue to be taken) to contain costs in continuing care programs. This was (and is) being achieved through a number of policy options, often in combination, that include:

- Reduced fixed bed ratios as the driver for future investment in LTC facilities through the capital planning process;
- More stringent assessment of eligibility and deliberate prioritization of the beds available;
- Reduced standards regarding program components (i.e., staffing ratios); and
- Use of some type of income (i.e., means) testing and increased co-payment requirements, and supplementary 'user fees' for some services.

The 2009 CIHI data shows that the reduced LOS nationally down to 1.8 years resulting, in part, from more stringent assessment policies has had significant effect on LTC planning. As a result of the shorter LOS, fewer beds are needed to service the same arrival rate of new residents. In the NWT, the establishment of a more robust and transparent TAC applicant assessment process in 2009 has resulted in similar impacts (i.e., older age at admission and shorter LOS) as discussed in Sections 6.5 and 6.7.

The limitations of ratio-based models for projecting bed demand are further illustrated in the analysis by Zhang et al. (2012b) of two British Columbia studies.

British Columbia Studies

The Zhang research was based in part on a review of two British Columbia (BC) studies. One study was for a regional health authority and the second was for an individual (private) LTC facility. The research question in both studies was "how *many residential (LTC) care beds are needed in each of the next 10 and 20 years to ensure that care is provided on a timely basis*?" The key findings from the research are summarized below.

Vancouver Island Health Authority:

The Vancouver Island Health Authority provides a continuing care program across 15 geographic regions in BC. One such region was the focus of analysis and included some 2,400 clients in care and 240 clients on the wait list. Dates of arrivals and LOS covered the period 1995 to 2008. The findings were:

- A fixed ratio method (75 per 1,000 population 75+ years) to project demand is problematic and has created situations with long wait times for admission or excess capacity;
- Over 80% of the clients were 75 years old when admitted;
- Arrival and LOS distributions varied by age and gender; and

- Clients were classified into the following groups: Below 55 years; 55-65; 65-75; 75-85; and, 85+ years. The groups were further grouped by gender, each with its own arrival and LOS distribution.

The researchers ran a 'service-level' simulation model and then compared the results with the BC standard planning fixed ratio (75 beds per 1,000 population 75+ years). The results were:

- The set ratio forecast significantly *underestimates* the capacity requirements in the region over the 2009 to 2018 period, and may significantly *overestimate* the capacity requirements after 2020; and
- The results for other regions found 'profound over or underestimation'.

The conclusion is that capacity plans based on only a set ratio either may or *may not provide adequate service* or create *excess capacity*. Additionally, using ratio-based policies and models for LTC planning is problematic. The main limitations of fixed ratio projections in the BC model can be summarized from the perspective of what this approach did not explicitly factor in (and which informs certain aspects of the methodology in the Model):

- The year-to-year dynamics of the system;
- Geography-specific differences in arrival rates and LOS;
- Clients in care and on the wait list at the beginning of each year;
- The population below age 75, who accounted for 20% of total clients; and
- Differences in arrival rates and LOS between the two age groups (75-85 and 85+ years) and the differences between the two gender groups.

Given the limitations of the fixed-ratio method, the logical question becomes: *Is there a method that can better approximate the service-level demand forecast?*

Average Flow Model: Louis Brier Home and Hospital

Given the shortcomings of the of the ratio-based approach, and that while a service-based approach is a preferred model, the fact is, that it requires far too much analytical expertise to implement and maintain on a broad scale (particularly in small population jurisdictions like the NWT). A reliable but simpler method is needed. Zhang et al. (2012b) developed and modified what is referred to as the *Average Flow Model* (AFM).

The AFM was developed for the second case study - the Louis Brier Home and Hospital in Vancouver, BC. The key concern of the Louis Brier was about expanding the facility's capacity to meet demand for LTC in its target population. What was required was a rigorous but transparent method that could inform its investment decision.

The advantage of the AFM over the other approaches was its transparency, its ease of implementation in a spreadsheet, the requirement for only annual demand and LOS forecasts as inputs and its ability to investigate sensitivity of plans to changes in inputs. The AFM is based on two client flow relationships in a given facility. The two relationships are:

(1) ***Number of beds needed next year =*** Number of beds needed this year – Client departures this year + Client arrivals this year

(2) ***Client departures this year =*** Number of beds this year/average LOS

The first equation is basic accounting; the second equation is derived by assuming that if clients remain in the system for the average LOS, then each year (1/average LOS) clients leave the system (i.e., the *departure rate)*. The number of total arrivals can be calculated by using the historical per capita arrival rate multiplied by a population forecast. Given the estimates of the average LOS and the number of total arrivals in each year, the AFM uses the above two equations to determine the number of beds needed.

The main shortcoming of the AFM is that it ignores the arrival and LOS variability, and thus provides no service level guarantees explicitly. Nevertheless, for planning purposes, one can use the AFM as the basis of sensitivity analysis by changing arrival scenarios and measuring the impact, hence providing insights and more reliable demand projections. This approach is a key part of the Model.

Critiques of Demand Models - Perspectives from Other Jurisdictions

A notable perspective was provided by Coyte et al. (2002). The paper provides a critique of the report *Looking Back, Looking Forward* by the Ontario Health Services Restructuring Commission in 2000 that estimated an additional demand for some 42,000 'institutional and in-home continuing care 'equivalent LTC places.

The paper identifies two main limitations associated with the model and report, which apparently did not: (i) allow for changes in preferences for health care settings by care recipients; and, (ii) address the potential effect of compression of morbidity. The paper concludes that the original *estimates were overstated,* with demand for chronic care beds lower by 8% and nursing homes by 14%.

Additionally, it concluded '… *over expansion in LTC bed capacity has the tendency to alter practices and behaviours'* (as per Roemer's Law of Demand, as discussed in Section 3.2). Specifically, thresholds for LTC placement may be modified through the increased availability of LTC beds, the elderly may elect placement in preferred accommodation at a new (facility) rather than accept a place in a retirement home, and some individuals may accept LTC bed placement rather than receive home care.

Capacity Assessment, Planning and Supply Changes

Capacity planning is the process of determining the capacity (i.e., services) needed to meet changing demands (i.e., increase or decrease) for a service. A variance (gap) between demand and supply results in 'inefficiency', either in under-utilized resources or unfulfilled clients (i.e., represented by wait-lists). Capacity planning, including for LTC, encompasses three response and supply strategies:

- *Lead Strategy:* Add or decrease capacity before the demand is experienced;
- *Lag Strategy:* Add or decrease capacity after the fact; and
- *Match Strategy*: Add or decrease capacity step by step. This mitigates unnecessary overhead costs by changing capacity to reflect actual demonstrated demand levels.

The evidence from the literature research and the inter-jurisdictional interviews indicates that the response to supply gaps typically takes the form of either facility construction or long-term contractual agreements with service providers. This type of capacity change is impacted by the scale of the facilities and design criteria, which contribute to sporadic investments and is likely to be implemented only at specified times (to align with available fiscal resources and capital investment cycles).

The reality is capacity planning and management in health care (particularly in bed capacity in hospitals or other LTC facilities) is that forecasting demand and supply is complicated due to the inherent uncertainty, complex relationships involved, and usually high public exposure and expectations.

7.2 NWT Long-Term Care Model Description and Methodology

The existing NWT *Long-Term Care Model for Capacity Assessment, Planning and Management* was reviewed, updated and more comprehensively documented through the review process.

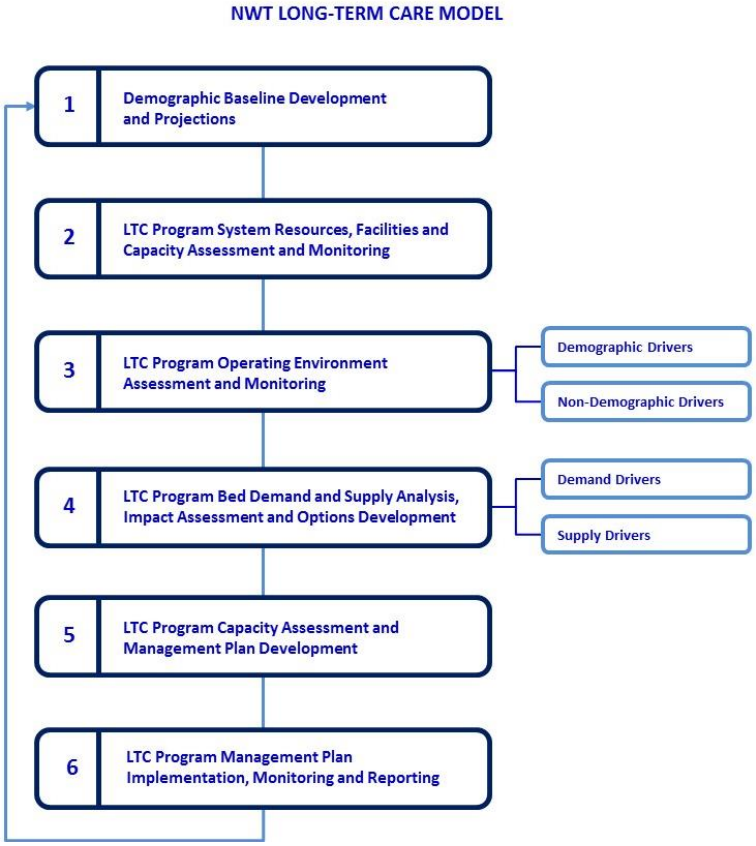
The Model and methodology encompass and build on a range of earlier models, best practices, and lessons learned (i.e., limitations and risks in forecasting and resource investment) from other jurisdictions and an on-going commitment to monitoring the relevant literature in the field. Moreover, the Model and methodology reflect and integrate the operational realities and drivers of LTC demand and supply in the NWT. Presented below are the details of the amended and consolidated model, methodology, and the recommended operationalization process to arrive at a pragmatic balance between demand and supply.

7.2.1 NWT LTC Model Description

The Model was amended, consolidated and documented to recognize the fundamental challenge in bed capacity planning and management. Forecasting demand and supply for LTC services are complicated due to the inherent uncertainty, and complex relationships involved, and the significant capital and annual operating investments involved (i.e., $800,000 to $1,200,000 per bed in capital and $136,000 per bed in annual operating costs), as discussed in Section 6.3.

The Model and methodology are presented in Figure 7.1 and detailed, by component, in the following sections.

Figure 7.1: NWT LTC Model and Methodology for Capacity Assessment, Planning and Management



The following present the methodology of each of the six (6) components of the Model.

Component 1: Demographic Baseline Development and Projections

This component of the Model provides the demographic baseline and framework for the population projections and the subsequent initial demographic driven LTC bed demand projections that are completed in Component 4 - *Program Bed Demand and Supply Analysis, Impact Assessment and Options Development.*

The baseline development methodology provides a comprehensive context and informs LTC potential target populations, including changes in the '*share*' of seniors in the total population (see Appendix C for the NWT Bureau of Statistics population projections for the period 2014 to 2034).

The sequence and methodology in this component encompasses:

- Develop population projections for the next 20 years in collaboration with the NWT Bureau of Statistics update to the NWT Population Projection Model (see model details and assumptions described in Section 5.1). The Model assumptions are documented, and transparent.

- The population projections do not include projections by community due to the small absolute size of many communities, which limit the reliability of the Model when an even smaller seniors' cohort break down by variables is required. The DHSS policy is to focus on LTC facilities at the regional level.

- The age cohort projections are also provided by gender, and ethnicity (Aboriginal and non-Aboriginal). These variables are directly relevant to LTC management as they inform resource allocation decisions related to variations in LOS, life expectancy and mortality rates (for the general population and for LTC facilities).

- To further inform the validity of the population projections for the seniors' cohorts, the NWT Health Care Card Registration data (for the 60+ years cohort) are compared with current estimates in the selected base reference year. The degree of alignment provides additional validation of the demographic baseline.

- The timing of the demographic baseline development is coordinated with the cycles of regular surveys by both the NWT Bureau of Statistics and Statistics Canada. The Statistics Canada National Household Survey is next scheduled for 2016, 2021 and 2026. Generally, the base population results are released in March of the year following the NHS (i.e., March 2017; March 2022 and March 2027). The NWT Bureau of Statistics NWT Community Survey is generally conducted every five years and provide an essential point of reference between the NHS data. The next NWT Community Survey is scheduled for 2019, with the results being released in the summer of the following years (i.e., summer of 2020).

- The NWT Population Projection Model results are compared to the periodic population projections for Canada, provinces and territories by Statistics Canada. While both population projection models are regarded as reliable and credible, the NWT model is used as the demographic reference point for the LTC Program due to the more specific and explicit assumptions regarding gender and ethnicity (see the details regarding the population core modeling assumptions as described in Sections 5.1 and 5.3).

- The review of population data includes detailed consideration of migration patterns overall, as well as the net migration for the seniors' cohorts. This is an important consideration in the subsequent '*adjustments*' to bed demand forecasts following the initial demographic baseline development (i.e., the process of operationalizing the Model).

- The LTC Program updating process and schedule is based on the following methods: (i) annual program monitoring as part of the overall management process; and, (ii) substantive analysis of bed supply and demand information and operational drivers every five years as part of the normal business planning cycle.

Component 2: Program System Resources, Facilities and Capacity Assessment, and Monitoring

This component of the Model provides the LTC Program operational framework that inventories and assesses the current resources, facilities and capacities. It also provides an essential reference point for on-going monitoring of system resources and capacity. The operational framework provides the necessary context for model Component 3 – *Program Operating Environment Assessment and Monitoring*, and Component 4 - *LTC Program Bed Demand and Supply Analysis, Impact Assessment and Options Development.*

The sequence and methodology in this component encompass:

- Update, validate, and document the existing system resources from the existing administrative information and data sets. This includes, but is not limited to: facility inventory and functionality status (i.e., number of residents and beds; building condition and potential repair, retrofit or replacement; and new construction in progress in the context of the capital plan for the LTC Program).

- Identify and document the (explicit) working *assumptions* relevant to this component (e.g., demand and supply, standards, and, resources). This ensures accountability and transparency and is intended as a direct input to the tasks in Components 3 and 4 (see the list of the current assumption in Section 7.3.1).

- Identification and assessment of any existing or emerging health and safety issues with respect to residents and staff.

- Identification of any current issues respecting the LTC Program (and related system) resources, including: staffing levels and capacity; non-capital equipment, information systems and technology, etc.

Component 3: Program Operating Environment Assessment and Monitoring

This component of the Model provides the LTC Program's '*environmental scan*' through inventorying and assessment of the current and emerging operating environment, while focusing on the NWT, there is consideration of other jurisdictions (national, international and circumpolar) through on-going engagement via periodic jurisdictional scans and literature review. The LTC Program has an on-going monitoring protocol which provides the opportunity to consolidate the diverse aspects and drivers of the operating environment into the Model.

The operating environment assessment contributes, along with the findings of Component 3, key aspects of the overall framework for informing the work in Component 4. The focus is on critically assessing the demographic drivers and the non-demographic drivers.

The sequence and methodology in this component encompass:

- Identify and document the (explicit) working *assumptions* relevant to this component, as detailed in the specific individual tasks (i.e., demographic and non-demographic drivers etc.) listed below. This ensures accountability and transparency, and is intended as a direct input to the tasks in Components 4 and 5.

- Assessment of '*demographic drivers*' that directly and/or indirectly impact the demand for LTC services and beds. This includes a wide range of statistical and administrative data (including information from the TAC assessment tool (current and proposed InterRAI) regarding key variables: age; gender; ethnicity; LOC; geographic specific conditions or variations; migration patterns (beyond the statistical data from Component 1, which may include information from client applications and TAC analysis); life expectancy; socio-economic conditions; housing tenure of potential clients cohorts; and, household (family) structure. The drivers are discussed in detail in Sections 3.2 and 3.3.

- Assessment of the '*non-demographic drivers*' that directly and/or indirectly impact the demand for LTC beds. This includes a wide range of statistical, clinical and administrative data regarding key variables: health status (of the potential client cohort), including but not limited to: the potential impact on demand associated with dementia, as well as FAS/FAE, as reflected in the broader term Fetal Alcohol Spectrum Disorder (FASD), and other developmental delays; disability rates; geographic distribution and/or variation in demand; household (family structure) with respect to potential capacity to provide caregiving; availability of Continuing Care Services; availability of LTC facilities; access and eligibility requirements; affordability and client co-payment rates; income (seniors' cohorts individual client and/or family financial resources); public (and political) expectations.

- Undertake consultation with LTC facility managers and key stakeholders regarding the overall NWT and regional operating environment. The key stakeholders include (but are not limited to), internal GNWT: Chief Clinical Advisor; Chief Public Health Officer; Executive Director, Territorial Social Programs Director, Mental Health and Addictions; Director, Finance; Director, Infrastructure Planning; and external GNWT: Aboriginal governments; and non-profit organizations with an interest in LTC (e.g., AVENS; YACCS and, other related regional/community organizations).

- Consolidation and assessment of key facility and client data, including: occupancy rates; LOC; LOS with respect to cumulative LOS and departure based; mortality rates (by facility, age, gender and ethnicity).

- Current (approved) TAC Wait List and applications pending review.

- Monitoring and assessment of the efficacy and impact of the *NWT Continuing Care Standards* (2015) on demand and supply.

- Consolidation and assessment of program financial data regarding approved budget, actual operating costs, revenue, and overall budget variance. This is within the context of the overall the DHSS and GNWT fiscal outlook.

- Review and assessment of the current LTC facilities capital plan and impact on the short- term and long-term bed inventory. Additionally, this needs to address any proposed changes to facility design standards (i.e., 9 and 18 pod design).

- Monitor program and facility staff capacity, staffing ratios, recruitment and retention, training needs (e.g., managing higher risk clients with advanced dementia).

- Assessment of any policy changes and the associated (potential) impacts on the LTC Program. This may include, but is not limited to: changes in the scope and scale of home and community care, assisted living, palliative care; facility co-payment fee schedule; income and/or means testing; OOT placement and repatriation; changes to bed baseline projections (i.e., bed ratios and assumptions regarding bed occupancy rates), utilization rates etc.).

Component 4: Program Bed Demand and Supply Analysis, Impact Assessment, and Options Development

This component of the Model brings together the findings from the Components 1, 2 and 3 to inform at a detailed level the demand and supply scenarios, and options development.

The sequence and methodology in this component encompass:

- Consolidate the working assumptions developed in the preceding components, and continue to assess the validity of core assumptions respecting bed demand and supply, impact assessment and options development.

- Develop the initial 'crude' bed demand projections based on the demographic projections and the bed ratio scenarios as set out by the DHSS (i.e., 115 and 120 beds per 1,000 population 70+ years, based on a 95% and 100% bed occupancy assumptions).

- Integrate the key administrative data (as documented in model Component 2 and 3) and '*operationalize*' the Model. This provides the essential base for potential adjustments to bed demand assumptions and projections, and informs impact assessment and options development.

- Analysis and impact assessment of the '*demand drivers*' (i.e., findings of Component 3 regarding the demographic and non-demographic drivers – particularly those related to potential impacts of health status) that directly and/or indirectly impact the demand for LTC services and beds.

- Analysis and impact assessment of the '*supply drivers*' (i.e., findings of Component 3 regarding the supply drivers. The key variables for analysis are: legislative and regulatory framework; strategic and policy framework; program standards and directives; fiscal context; facility capacity and management; historical responses to demand and supply scenarios; political expectations and commitments; continuing care availability and stability of service levels; availability of non-public LTC options; and, OOT placement and repatriation.

- Development of LTC demand management and supply options. The options are supported by developing consolidated impact assessments, mitigation and implementation strategies.

Component 5: Program Capacity Assessment and Management Plan Development

This component of the Model brings together the findings and core assumptions from the preceding components as the foundation for the development of a draft and final LTC Program management plan. This contributes to the DHSS business and capital plan development.

The sequence and methodology in this component encompass:

- Internal DHSS review of the LTC Program demand management and supply options. Selection of preferred option (and amendments as necessary).

- Preparation of a draft LTC Program management plan for review and approval for the business planning cycle and capital plan process.

- Submission of the LTC Program management plan for approval.

- Finalization of the LTC Program management plan.

Component 6: Program Management Plan Implementation, Monitoring and Reporting

This component is the implementation of the final LTC Program management plan. This includes establishing an appropriate monitoring and reporting process, which aligns with and contributes to the overall existing accountability and required reporting by the DHSS.

The sequence and methodology in this component encompass:

- Setting out a process and metrics (a number of which already exist for LTC) for monitoring and reporting. This simply aligns with the existing public reporting mechanisms (e.g., under the 'Performance Measurement Framework').

- Aligning and coordinating the monitoring and reporting with the LTC Program's established review and updating process and schedule: (i) on-going and annual LTC Program monitoring as part of the normal program management and delivery process; and, (ii) formal comprehensive LTC Program review every five years. This begins once again with the Model's Component 1 – *Demographic Baseline Development and Projections*.

7.3 Initial Demographic Driven Bed Demand: 2016 to 2034

7.3.1 Modeling and Projection Assumptions

The modeling and projection assumptions are presented in terms of *demand side* assumptions and *supply side* assumptions, and numbered for reference. A number of assumptions inform both the demand and supply side. Changes to the assumptions may potentially result in consequential (or even substantive) changes in demand for and/or supply of LTC services and facilities. For greater certainty, these are modeling assumptions and are not intended to reflect or presume policy decisions.

DEMAND SIDE ASSUMPTIONS

The first group of demand side assumptions relate to demographics. Although the demographic context was presented and discussed in detail in Sections 4 and 5, they are restated and highlighted here for completeness and convenience.

Demographic Based Assumptions

Assumption D1: Demographic Context 2014

The following summarizes the demographic status of the NWT and regions total population, and the 70+ years cohort as was experienced in calendar 2014 – the reference base year for the population projections and bed demand projections. For simplicity in interpretation, reference to a calendar year in effect means the corresponding FY (i.e., 2014 means FY 2014-15).

Total Territorial Population

- Total NWT population was 43,623.
- There were 22,425 Aboriginal persons, representing 51.4% of the population. Non-Aboriginal persons totalled 21,198, representing 48.6% of the population.
- There were 22,208 males, representing 50.9% of the population. Females totalled 21,415, representing 49.1% of the population. The corresponding total population sex ratio was 103.7 (i.e., 103.7 males for every 100 females).

70+ Years Cohort

- There were 1,687 persons aged 70+ years, representing 3.9% of the total population.
- There were 1,009 Aboriginal persons, representing 59.8% of the population aged 70+ years. Non-Aboriginal persons totalled 678, representing 40.2% of this age cohort.
- There were 781 males, representing 46.3% of the population aged 70+ years. Females totalled 906, representing 53.7% of the population. The corresponding population sex ratio for this age cohort was 86.2.

Assumption D2: Demographic Projections 2014 to 2034

Key Demographic Driver and Trend: While there is little growth in total territorial population over this period, the demographic structure continues to 'age' – with a range of associated economic and social policy implications. The NWT overall trend is reflected at the regional level.

Total Territorial Population

- By 2034, the total NWT population is projected to be 45,012. This represents an increase of 1,389 persons, or 3.2% from 2014. Statistically, this change in the total population is negligible over the twenty year period.
- There will be 22,877 Aboriginal persons, representing 50.9% of the territorial population. Non-Aboriginal persons are projected to total 22,135, representing 49.2% of the population. The Aboriginal population will continue to maintain a slight majority in 2034, although with a slight decrease in the share from 51.9% to 50.8%.
- There will be 22,424 males, representing 49.8% of the population. Females will account for a total of 22,588, representing 50.2% of the population. The corresponding total population sex ratio is expected to be 99.3.

70+ Years Cohort

- There will be 5,207 persons aged 70+ years, representing 11.6% of the total population. This represents an increase of 3,520 persons (208.7% increase), and a relative 'share' growth from 3.9% to 11.6% of the total population.
- There will be 2,456 Aboriginal persons, representing 47.2% of the population aged 70+ years. Non-Aboriginal persons will account for 2,751, representing 52.8% of this age cohort.
- There will be 2,400 males, representing 46.1% of the population aged 70+ years. Females will account for a total of 2,807, representing 53.9% of the population. The corresponding population sex ratio for this age cohort is expected to be 85.5.

Assumption D3: Peak of the 70+ Years Cohort

The total NWT 70+ years cohort will continue to increase in absolute numbers between 2014 and 2034. This cohort will increase from 3.9% of the total NWT population in 2014 to 11.6% in 2034. The change pattern trajectory will be as follows: Relative growth (percent changes over reference periods) will continue through to 2020 where it will start a slow decline. This slow decline will continue through to 2032, where an accelerated decline will be experienced through to 2034.

Non-Demographic Demand Side Based Assumptions

Assumption ND1: Dementia Driven Base Demand

The potential significance of dementia driven demand for LTC is not explicitly modeled. The projections, consistent with the previous reports completed for the DHSS, consider dementia beds as a sub-set of total LTC beds. As such, the total bed projections factor in dementia beds as 3 beds per 1,000 population 70+ years.

Assumption ND2: Dementia Driven Additional Demand

The current initial bed demand projections do not include any explicit additional provision for addressing the projected impact of dementia on Canadian society as set out in *Rising Tide: The Impact of Dementia on Canadian Society*, Alzheimer Society (2010). This is a key assumption to address through the Model given the fact that based on a range of published literature the rates of dementia in Canada for the 65+ years cohort is estimated 1 in 11, or about 9%. The corresponding rate in the United States is 1 in 9, or about 11%. The inter-jurisdictional scan conducted for the review found significant challenges posed by the increasing incidence of dementia in facility residents to the delivery of LTC.

Assumption ND3: Dementia Aboriginal Population

Based on research conclusions by Jacklin et al. (2013), which found that: "the risk of dementia for First Nations may also be elevated due to higher rates of associated conditions, such as hypertension, heart disease, stroke and diabetes, and higher smoking and obesity rates, all of which increase the risk of dementia". This is also evident in the *NWT Health Status Report* (2011) and the *NWT Hospitalization Report* (2013). In the context of the discussion of health status variation based on ethnicity, the potential impact of dementia on Aboriginal persons has not been explicitly factored into the bed demand projections.

Assumption ND4: NWT Population Projection Model Base Assumptions

The NWT Bureau of Statistics Population Projection Model assumptions regarding birth rates, death rates and migration rates remain valid for the projection period 2014 to 2034 (see Section 5.1 for detailed discussion of the population projection model assumptions).

Assumption ND5: NWT Population Projection Model Periodic Updating

The NWT Population Projection Model will be updated following each of the data available from future quinquennial (every five years) Statistics Canada National Household Survey scheduled for 2016, 2021, 2026, and 2031. Based on the new projections, the DHSS will review and amend the bed demand projections accordingly.

Assumption ND6: TAC Wait List Demand

The TAC Wait List (n=38 for FY 2014-15 but which is updated monthly) reflects actual latent demand, and provides the additional demand beyond the demographic driven demand used to calculate (i.e., via the formula driven spreadsheets for projection years) the final variance from projected demand.

Assumption ND7: Out of Territory Repatriation Demand

There is no proposed repatriation of patients currently in the OOT placement program and as such no additional demand is assumed.

Assumption ND8: Home and Community Care Services Level

The scope, scale and resourcing of home and community care services remain at current levels as a factor mitigating and/or deferring demand for LTC beds.

Assumption ND9: Implementation of InterRAI

There are no additional demand drivers resulting from moving away from the existing Continuing Care Assessment Package (CCAP) and adopting the InterRAI assessment tool.

Assumption ND10: NWT Continuing Care Standards

There are no additional demand drivers resulting from implementing the *NWT Continuing Care Standards* (2015).

Assumption ND11: No LTC Wait Time Policy

The DHSS will not be introducing an explicit LTC wait time policy that sets a maximum wait time standard for an applicant to be allocated a facility bed.

Assumption ND12: Resident Co-Payment
The current LTC facility monthly rate structure (i.e., resident co-payment) under the Regulations remains in effect (with provision for annual inflation adjustment).

Assumption ND13: No Income or Means Testing
No income or means test will be implemented.

Assumption ND14: Bed Occupancy
LTC facility bed occupancy will average 95%.

SUPPLY SIDE ASSUMPTIONS

Assumption S1: LTC Bed Inventory FY 2015-16
The existing LTC bed inventory (July 2015) of 174 beds includes the Extended Care Unit beds (ECU) and all respite beds.

Assumption S2: LTC Bed Inventory FY 2016-17
There are 27 additional/replacement LTC beds under construction, which will be available in FY 2016-17. This will increase the total LTC bed inventory to 201.

Assumption S3: Exclusion of Proposed ECU Beds at Stanton Renewal Project
Current inventory projected for FY 2016-17 excludes the potential (net) 8 new Extended Care Unit beds at part of the Stanton Territorial Hospital Renewal Project.

Assumption S4: No Decrease in FY 2015-16 LTC Bed Inventory
None of the existing 174 beds are scheduled to be taken out of inventory due to replacement, renovation or decommissioning for the foreseeable time.

Assumption S5: Capital Planning and Construction
The elapsed timeline to bring a new LTC facility on line will take 3 to 5 years if prioritized and 7 to 10 years under normal capital procurement process.

Assumption S6: Capital Investment Cost per Bed
The approximate 'all-in' capital cost (as of March 2015) per bed range from $800,000 to $1,200,000 will continue to be experienced.

Assumption S7: Annual Operating Cost per Bed
Annual operational cost per bed (based on data from FY 2014-15) is some $136,000, or $11,300 per bed per month. These costs are not fully burdened costs.

Assumption S8: LTC Facility Design Standard
The DHSS will continue to use the 9 and 18 bed pod design models for capital planning purposes. This will inherently result in a particular region temporarily being either above or below projected demand given the incremental nature of adding to LTC infrastructure.

Assumption S9: Facility Revenue Generation
Revenue generated per LTC bed (based on FY 2014-15 data) will continue in the range of 5% of total operating costs.

Assumption S10: Resident Length of Stay
The average LOS will continue to be in the 3 year range with a potential for a continued (relative) decline as the average age of residents rises.

Assumption S11: Facility Mortality Rate
The average annual facility mortality rate (all NWT facilities combined) will remain in the 21 per 100 (or 210 per 1,000) residents.

Assumption S12: Home and Community Care Service Levels
The scope, scale and resourcing of home and community care services remain at current levels as a factor mitigating and/or deferring demand for LTC beds.

Assumption S13: DHSS LTC Provider
The DHSS will continue to be the provider of last resort for LTC beds. It is understood that alternate delivery and funding models are being studied and that there may be a change in this assumption at some future point.

Assumption S14: Role of Private and Non-Profit Service Providers
The role of private and not-for-profit service providers of LTC care in the NWT will remain at current (minimal) levels. It is understood that alternate delivery and funding models are being studied and that there may be a change in this assumption at some future point.

Assumption S15: Partnership with Aboriginal Governments
There are no planned joint partnership initiatives with Aboriginal governments to build and/or operate (under a cost-sharing model) LTC facilities.

Assumption S16: Resident Co-Payment
The current LTC facility monthly rate structure (i.e., resident co-payment) under the Regulations remains in effect (with provision for annual inflation adjustment).

Assumption S17: No Income or Means Testing
No income or means test will be implemented.

Assumption S18: No LTC Wait Time Policy
The DHSS will not be introducing an explicit LTC wait time policy that sets a maximum wait time standard for an applicant to be allocated a facility bed.

Assumption S19: Bed Occupancy
LTC facility bed occupancy will average 95%.

7.3.2 Initial Demographic Driven Bed Demand Projections and Analysis
Based on the completed demographic projections (as presented in Section 5 and Appendix C), the initial bed demand projections are developed based on the selected bed ratio scenarios identified by the DHSS. The following series of summary tables and supporting figures provide the details of the bed projection methodology and *'initial'* demographic driven results for selected years.

The preparation of initial LTC bed demand projections that are purely demographic driven are based on the population projections developed by the NWT Bureau of Statistics for the 2014 to 2034 time horizon (see the NWT LTC Model – Component 1). The results do not include any potential adjustments (see Section 7.5) that the LTC Program may make with respect to final demand and/or supply.

The overall purpose of the initial demographic driven LTC bed demand projections is to provide the framework and reference point for policy and program analysis, adjustments and decisions that take into account a broader range of non-demographic factors and drivers to develop final bed supply options and management plan (see the NWT LTC Model – Components 2, 3 and 4).

Tables 7.2 and 7.3 provide a summary of the detailed results from Appendix E, Tables E-1 to E-1.7 and E-2 to E-2.7 for the NWT and regions. Additionally, Figures 7.2, 7.3, 7.4 to 7.4.3, 7.5 to 7.5.3 provide a graphic summary of the overall results presented in Tables 7.2 and 7.3. The detailed discussion of the initial projection results is contained in Section 7.4.

The following observations illustrate the structure and content of Tables 7.2 and 7.3:

- Under the 115 per 1,000 population ratio (Table 7.2), the overall NWT variance (gap) in in bed demand in 2026 is (259) and (237) under the 95% and 100% bed scenarios, respectively; and
- The corresponding numbers under the 120 per 1,000 population ratio (Table 7.3) are (277) and (255), respectively.

The results provide both context and a '*maximum demand*' projection. The Model subsequently makes adjustments to the initial baseline projections by accounting for various factors, particularly *resident departures* (i.e., resulting from facility resident deaths) which results in beds being returned to the bed inventory and available for re-allocation in a given time period.

Table 7.2: Final Variance from Projected Demand for LTC Beds, 2016-2034 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

Geographic Area	Bed Occupancy Scenario															
	2016 (Base Year)		2017		2020		2023		2026		2029		2032		2034	
	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%
Northwest Territories	**-67.00**	**-55.50**	**-78.02**	**-65.97**	**-133.70**	**-118.87**	**-194.83**	**-176.94**	**-258.51**	**-237.43**	**-333.44**	**-308.62**	**-418.66**	**-389.58**	**-467.32**	**-435.81**
Beaufort Delta	-27.43	-25.21	-27.67	-25.44	-33.60	-31.07	-39.89	-37.05	-46.55	-43.38	-56.84	-53.15	-69.19	-64.88	-77.91	-73.16
Sahtu	0.81	1.67	0.21	1.10	-2.94	-1.90	-6.57	-5.35	-9.72	-8.34	-12.02	-10.52	-16.86	-15.12	-19.28	-17.42
Dehcho	-9.33	-8.12	-10.66	-9.38	-16.23	-14.67	-20.83	-19.04	-29.06	-26.86	-34.15	-31.69	-41.41	-38.59	-45.53	-42.50
Tlicho	0.63	1.40	0.75	1.51	-0.95	-0.10	-2.88	-1.94	-5.06	-4.01	-7.12	-5.97	-11.72	-10.34	-13.05	-11.60
Yellowknife	-16.57	-12.84	-22.38	-18.36	-53.13	-47.57	-88.59	-81.27	-123.09	-114.04	-166.79	-155.56	-210.49	-197.07	-236.40	-221.68
South Slave	-11.68	-10.05	-13.74	-12.01	-17.13	-15.23	-24.03	-21.78	-30.93	-28.34	-38.92	-35.93	-47.76	-44.32	-51.27	-47.66
Fort Smith	-3.43	-2.36	-4.52	-3.39	-9.72	-8.34	-12.02	-10.52	-14.08	-12.48	-17.59	-15.81	-21.22	-19.26	-23.88	-21.79

Table 7.3: Final Variance from Projected Demand for LTC Beds, 2016-2034, Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

Geographic Area	Bed Occupancy Scenario															
	2016 (Base Year)		2017		2020		2023		2026		2029		2032		2034	
	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%
Northwest Territories	**-77.00**	**-65.00**	**-88.49**	**-75.92**	**-146.60**	**-131.12**	**-210.39**	**-191.72**	**-276.83**	**-254.84**	**-355.02**	**-329.12**	**-443.95**	**-413.60**	**-494.73**	**-461.84**
Beaufort Delta	-29.36	-27.04	-29.61	-27.28	-35.80	-33.16	-42.37	-39.40	-49.32	-46.00	-60.05	-56.20	-72.94	-68.44	-82.03	-77.08
Sahtu	0.06	0.96	-0.57	0.36	-3.85	-2.76	-7.64	-6.36	-10.93	-9.48	-13.33	-11.76	-18.38	-16.56	-20.91	-18.96
Dehcho	-10.39	-9.12	-11.78	-10.44	-17.59	-15.96	-22.39	-20.52	-30.98	-28.68	-36.28	-33.72	-43.86	-40.92	-48.16	-45.00
Tlicho	-0.04	0.76	0.08	0.88	-1.68	-0.80	-3.71	-2.72	-5.98	-4.88	-8.13	-6.92	-12.93	-11.48	-14.32	-12.80
Yellowknife	-19.81	-15.92	-25.87	-21.68	-57.96	-52.16	-94.97	-87.32	-130.97	-121.52	-176.57	-164.84	-222.17	-208.16	-249.20	-233.84
South Slave	-13.11	-11.40	-15.25	-13.44	-18.79	-16.80	-25.99	-23.64	-33.19	-30.48	-41.53	-38.40	-50.75	-47.16	-54.41	-50.64
Fort Smith	-4.36	-3.24	-4.52	-3.39	-10.93	-9.48	-13.33	-11.76	-15.47	-13.80	-19.14	-17.28	-22.93	-20.88	-25.71	-23.52

Figure 7.2: Final Variance from Projected Demand for LTC Beds, 2016-2034 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT

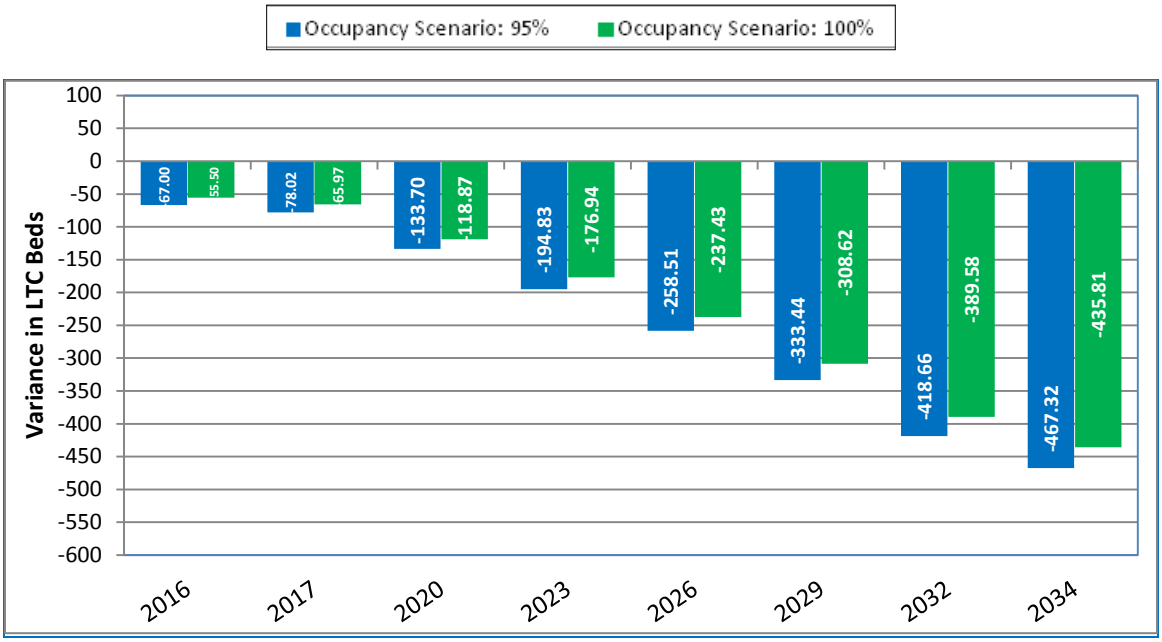


Figure 7.3: Final Variance from Projected Demand for LTC Beds, 2016-2034 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT

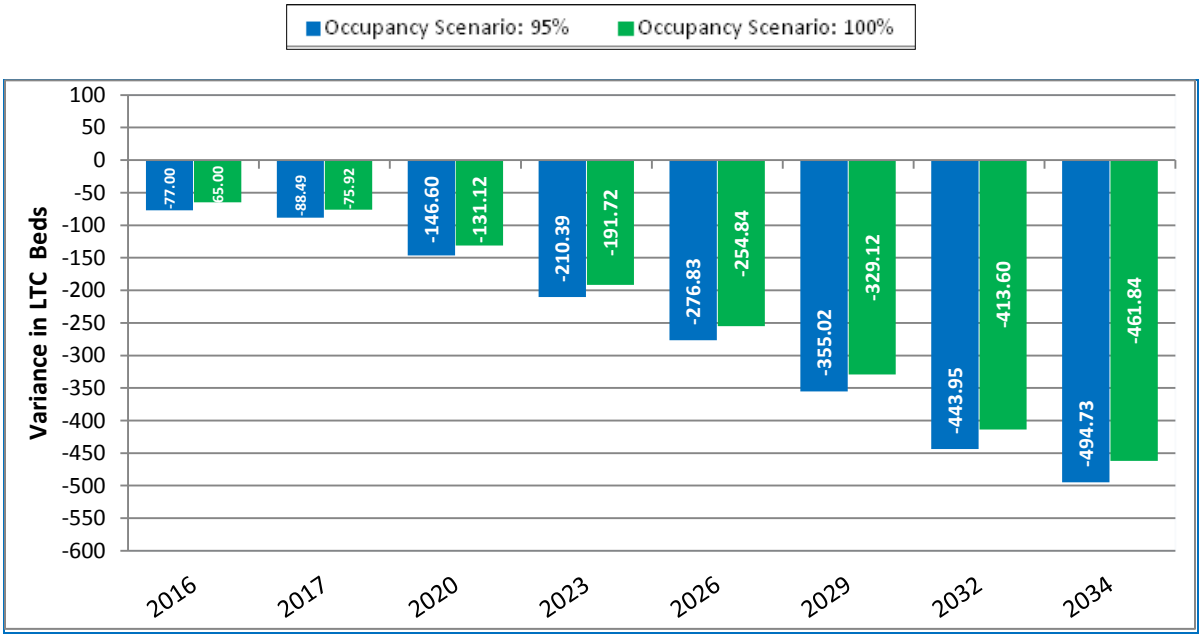


Figure 7.4: Final Variance from Projected Demand for LTC Beds, 2016 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

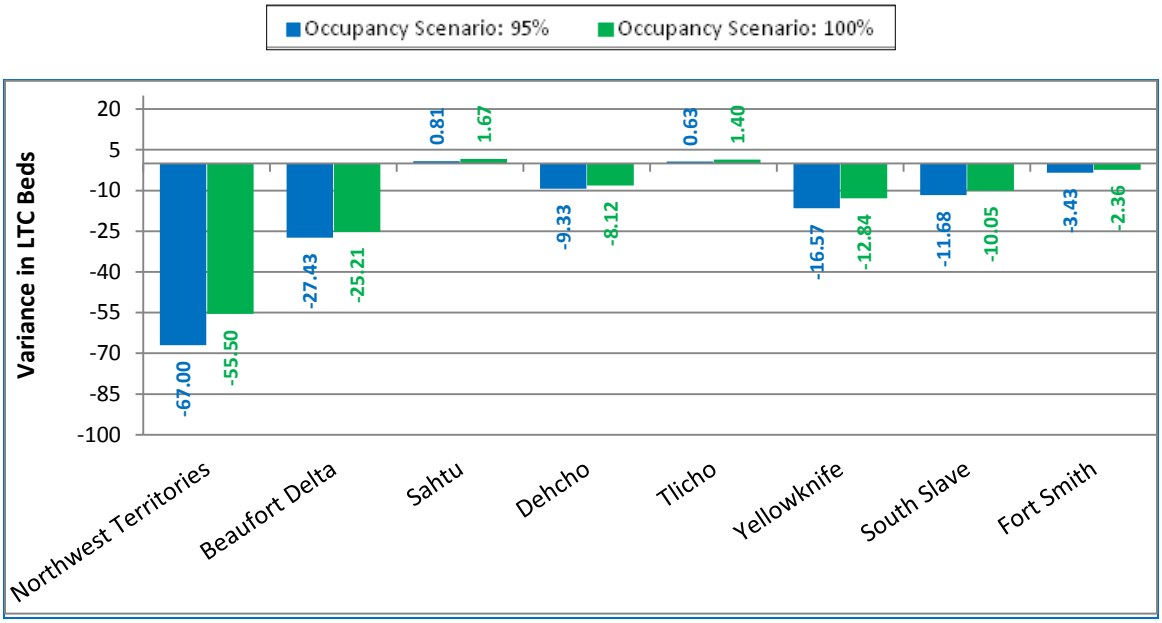


Figure 7.4.1: Final Variance from Projected Demand for LTC Beds, 2020 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

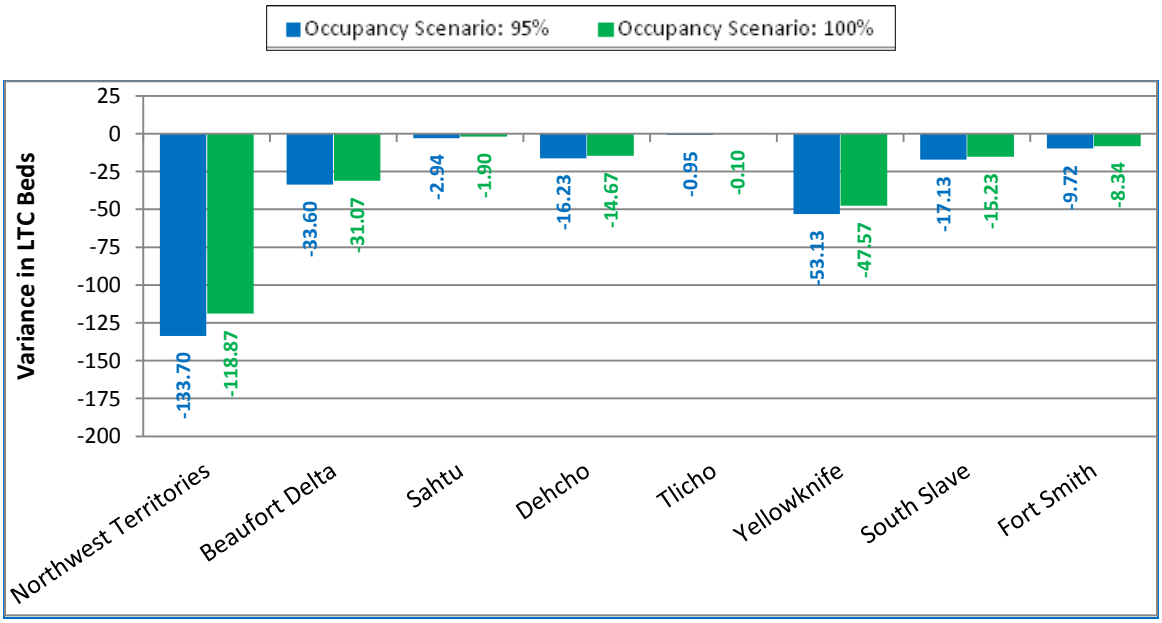


Figure 7.4.2: Final Variance from Projected Demand for LTC Beds, 2026 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

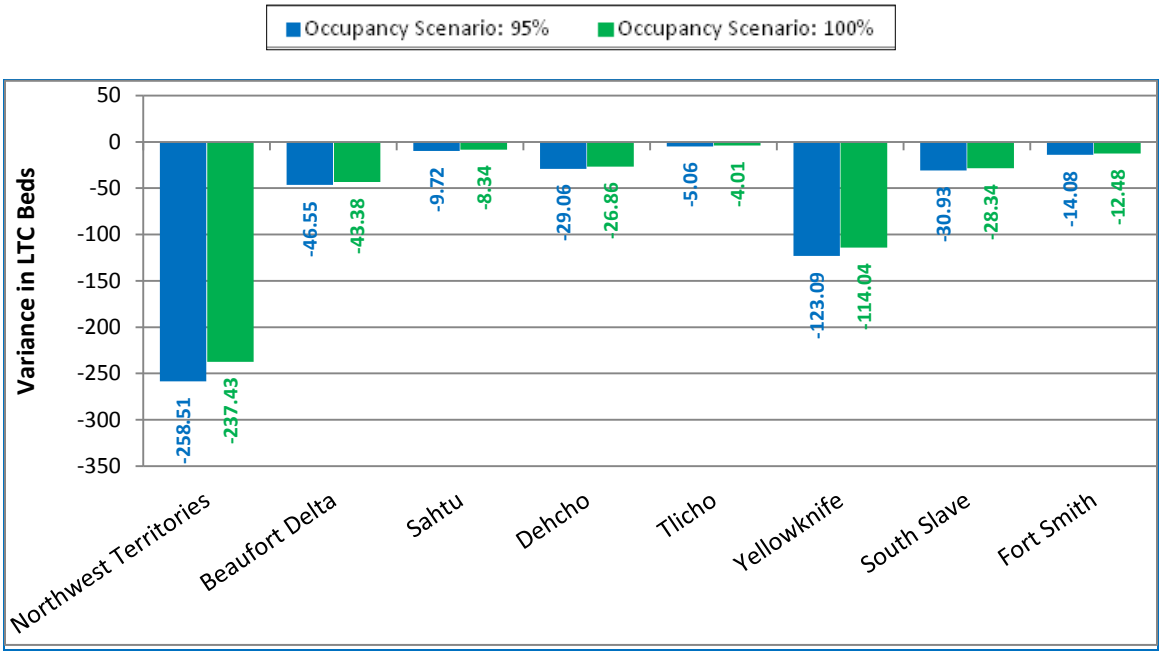


Figure 7.4.3: Final Variance from Projected Demand for LTC Beds, 2034 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

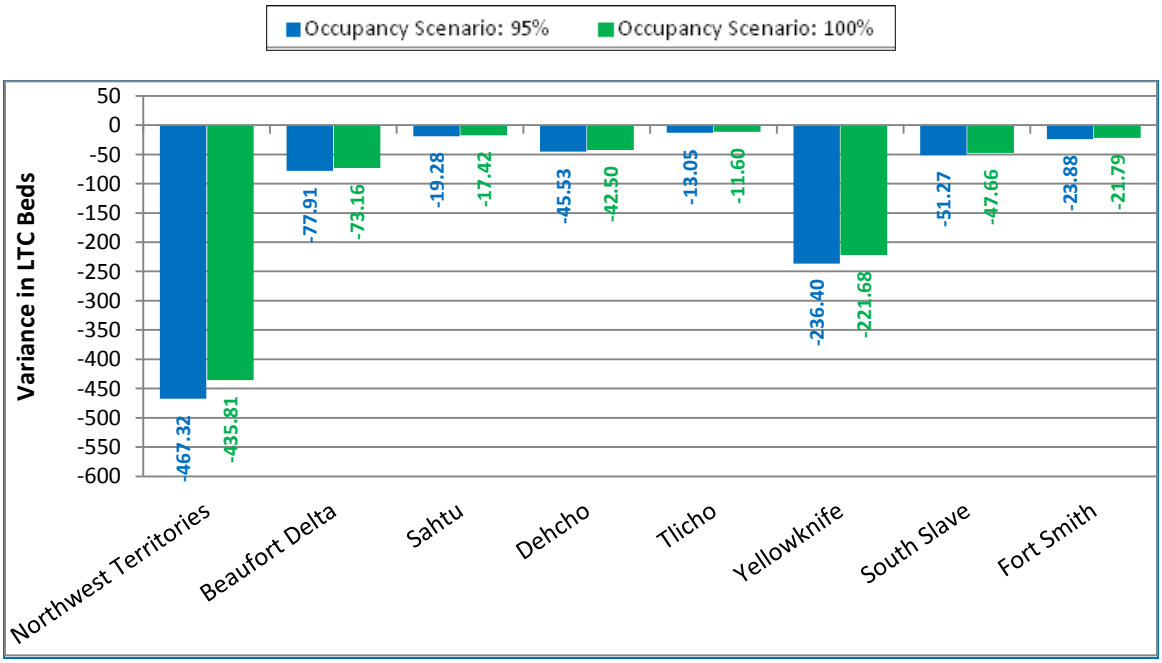


Figure 7.5: Final Variance from Projected Demand for LTC Beds, 2016 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

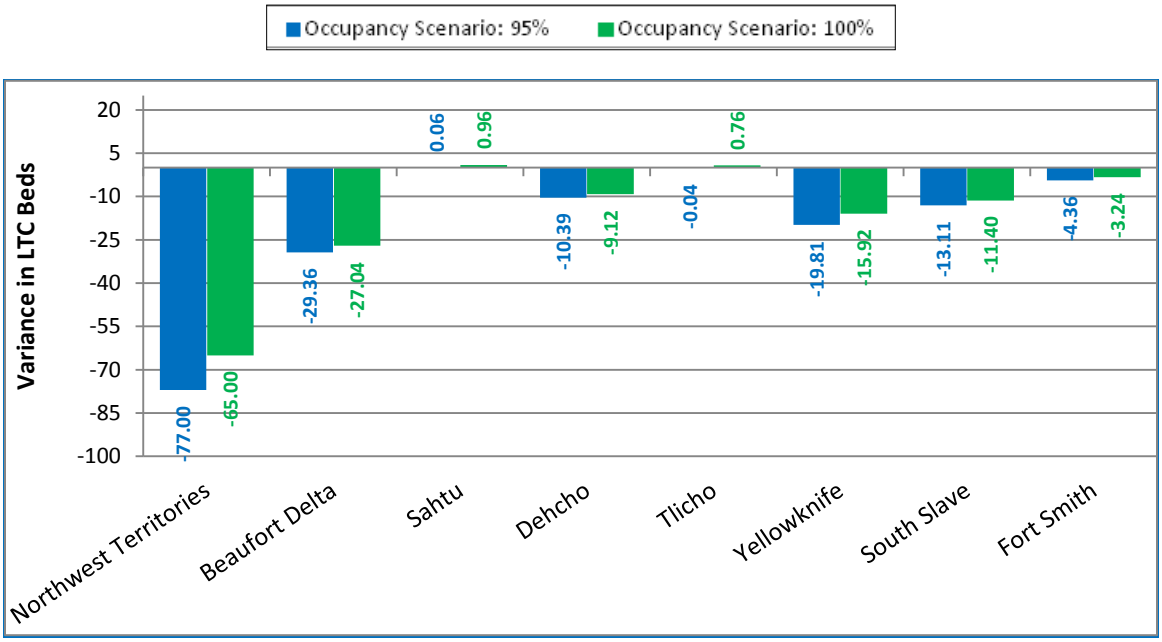


Figure 7.5.1: Final Variance from Projected Demand for LTC Beds, 2020 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

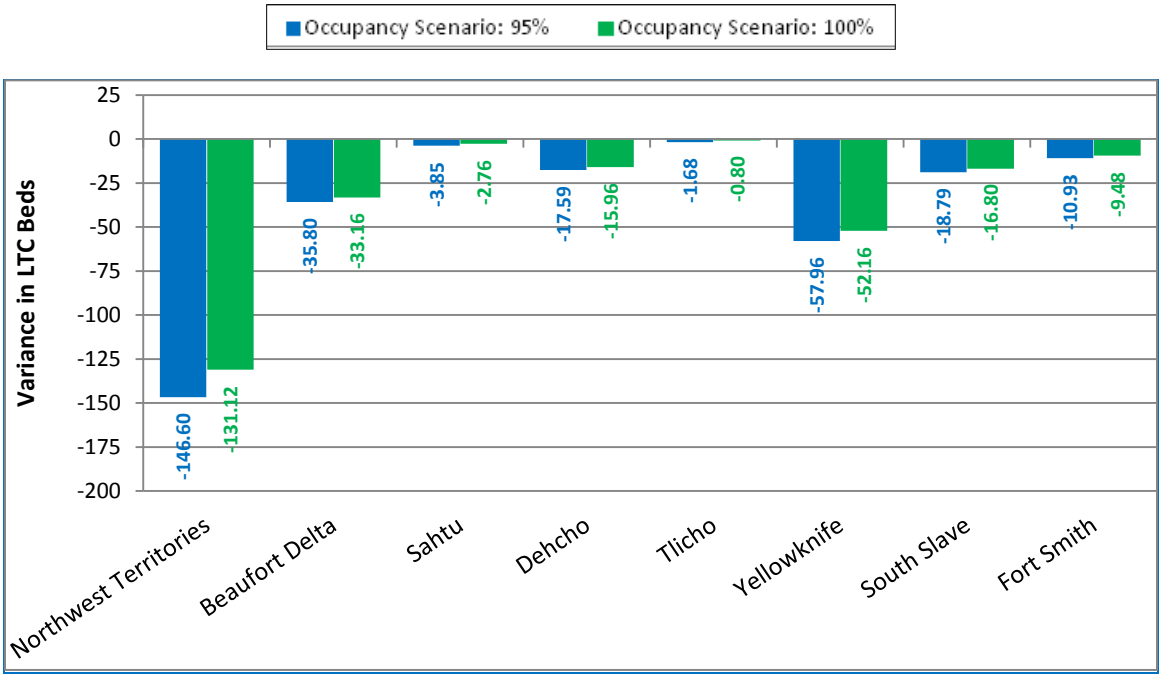


Figure 7.5.2: Final Variance from Projected Demand for LTC Beds, 2026 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

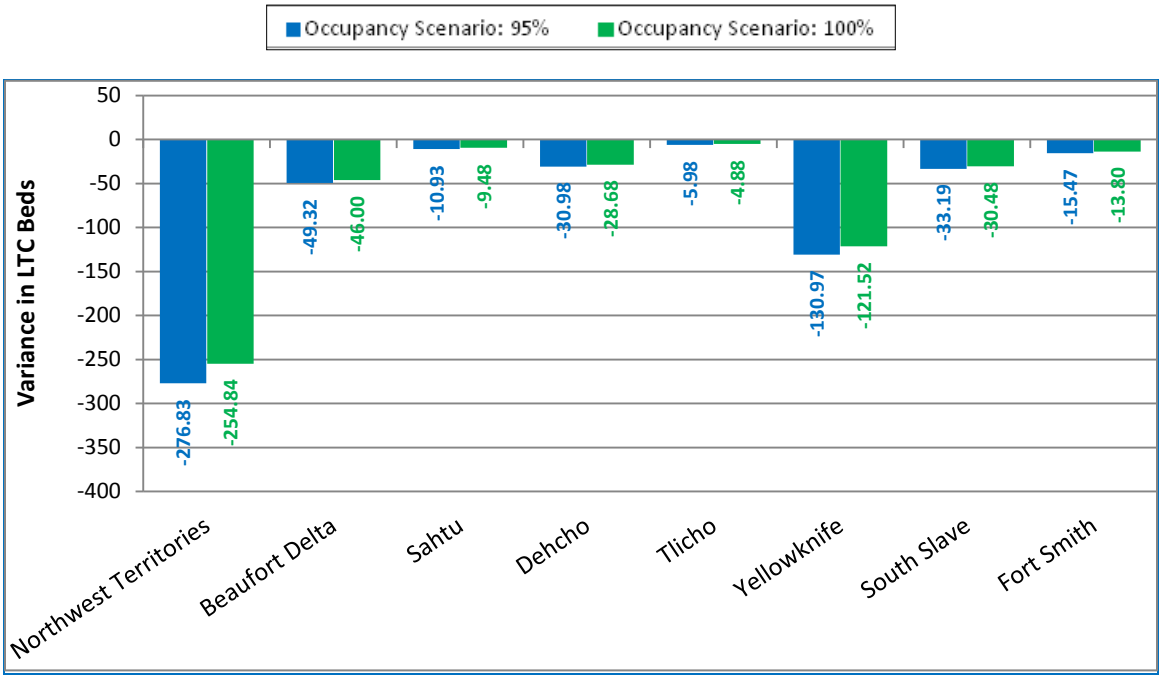
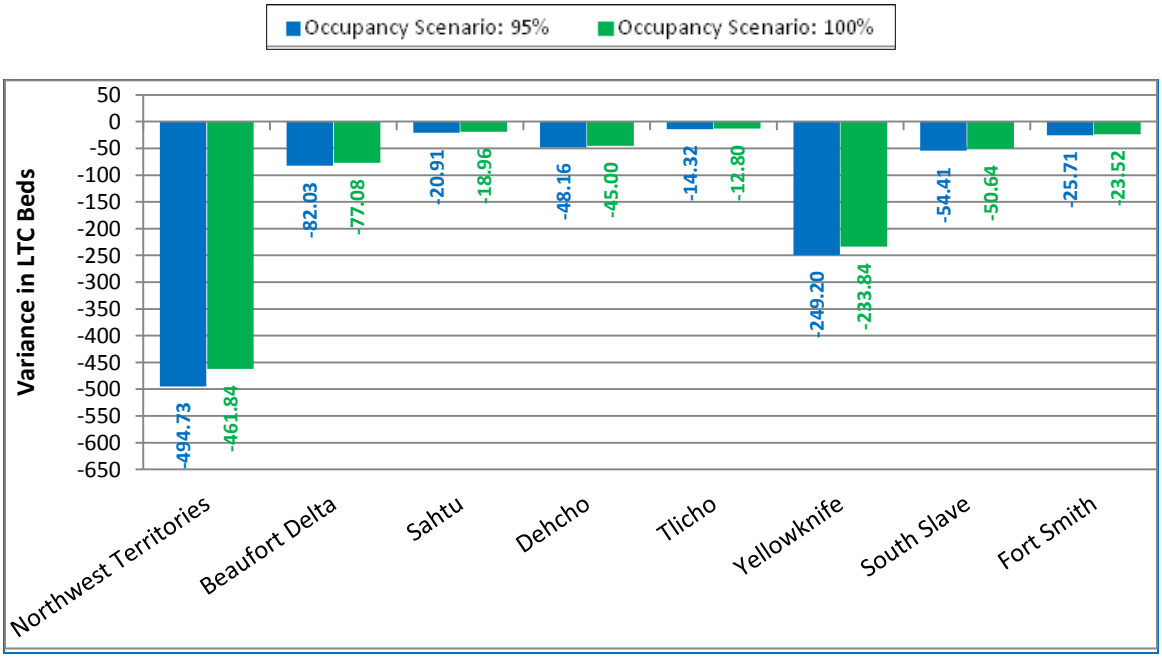


Figure 7.5.3: Final Variance from Projected Demand for LTC Beds, 2034 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions



Appendix E, Tables E-1 to E-1.7 and Tables E-2 to E-2.7 are structured to show the 115 and 120 beds per 1,000 population aged 70+ years demand based on 95% and 100% occupancy for selected reference years (2016, 2017, 2020, 2023, 2026, 2029, 2032 and 2034: Cohort population in the projection year; bed requirement projection based on demographic driven demand based on 95% and 100% occupancy assumptions; bed inventory at the reference year; variance from projected initial demand projection. The resulting projection numbers can be referenced as they are if no additional demand adjustments are needed based on: the TAC Wait List (as a proxy for latent demand); OOT placement repatriation (as a potential increase in demand); and, final variance from initial projected demand. Table 7.4 illustrates the overall structure and content of the tables (spreadsheets that include certain manual entry and formula driven cells) in Appendix E, Tables E-1 to E-1.7 and Tables E-2 to E-2.7.

Table 7.4: LTC Bed Requirement Projections for 2016 Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2016 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2016 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**1,900**	**115**	**230.00**	**218.50**	**201.00**	**-29.00**	**-17.50**	**-38.00**	**0.00**	**-67.00**	**-55.50**
Beaufort Delta	367	115	44.43	42.21	25.00	-19.43	-17.21	-8.00	0.00	-27.43	-25.21
Sahtu	142	115	17.19	16.33	18.00	0.81	1.67	0.00	0.00	0.81	1.67
Dehcho	201	115	24.33	23.12	18.00	-6.33	-5.12	-3.00	0.00	-9.33	-8.12
Tlicho	127	115	15.37	14.61	18.00	2.63	3.40	-2.00	0.00	0.63	1.40
Yellowknife	616	115	74.57	70.84	69.00	-5.57	-1.84	-11.00	0.00	-16.57	-12.84
South Slave	270	115	32.68	31.05	25.00	-7.68	-6.05	-4.00	0.00	-11.68	-10.05
Fort Smith	177	115	21.43	20.36	28.00	6.57	7.65	-10.00	0.00	-3.43	-2.36

7.4 Demographic Baseline Bed Demand Scenarios and Bed Ratios

The LTC Program has undergone a number of reviews and engaged in dialogue regarding bed demand projections over the last two decades (see Section 2.2 and Appendix A). Table 7.1 provides a comparison of demand for beds based on various projection models over the period 2005 to 2015. The table also shows that other jurisdictions use variations in the population age cohort (i.e., 60+, 65+, 70+ and 75+ years) to apply bed ratios.

As discussed in Section 7.1, there are a number of models available for bed demand projection. The two main categories are utilization rates and bed ratios. These approaches are considered valid (with each having limitations) in terms of yielding an initial baseline for determining bed projections. The review selected bed ratios as one component of the overall methodology used in the LTC model.

As a point of context prior to discussing the bed ratio scenarios and demand projections, it is instructive to consider LTC demand in a broader context. Based on published data from various Canadian jurisdictions (i.e., British Columbia, Manitoba and Saskatchewan), some 6% to 7% of the population aged 65+ years are typically institutionalized (i.e., LTC facilities or comparable settings).

Applying the estimate of 6% and 7% results in the following potential demographic based LTC bed demand for the 65+ years cohort for the years 2014, 2015 and 2016 in the NWT:

2014: Population 65+ Years: 2,879 persons
Estimated Demand at 6%: **173 beds**
Estimated Demand at 7%: **202 beds**

2015: Population 65+ Years: 3,064 persons
Estimated Demand at 6%: **184 beds**
Estimated Demand at 7%: **214 beds**

2016: Population 65+ Years: 3,293 persons
Estimated Demand at 6%: **198 beds**
Estimated Demand at 7%: **231 beds**

The 2015 actual demand is represented by calculating the existing facility clients (n=174) and the TAC Wait List (n=38) for a total of 212. This is within 2 beds (0.9%) of the 7% estimate of 214. As well, applying the NWT model bed ratios of 115 and 120 per 1,000 population 70+ years (based on 100% bed occupancy) results in the following estimates for FY 2015-16. The 120 bed ratio-based estimate is 213 beds (i.e., within 1 bed [0.5%] of the actual calculated demand of 212 in the NWT in FY 2015-16).

2015-16: Population 70+ Years: 1,900 persons
Estimated Demand at 115: **204 beds**
Estimated Demand at 120: **213 beds**

Rationale for NWT Bed Ratio and Age Cohort

The range of previous bed ratios used in the NWT to project demand was from 110 to 120 per 1,000 population aged 70+ years. The NWT model population cohort is 70+ years based on the LTC Program experience in terms of average age of admission, LOS and age at death (as discussed in Sections 6.4 to 6.6). While the detailed discussion regarding health status of NWT residents was presented in Section 3.4, a number of key observations are restated here to inform the demographic baseline and projections overview discussion.

Integrated Service Delivery Model (ISDM)

The *Integrated Service Delivery Model* (ISDM) report (2004) concluded and established a "*more appropriate and reasonable population cohort*" as *70+* years (in contrast to the Canadian guideline of beds per 1,000 for a population cohort of 75+ years). Additionally, the bed ratio of *110 per 1,000* (75+ years) previously adopted from Manitoba was amended to *120 per 1,000* (70+ years) to more accurately reflect the demographic, health status (i.e., higher incidence of chronic diseases) and programming needs in the NWT. This included provision for 3 beds per 1,000 for dementia care (as a sub-set of the 120 per 1,000 ratio).

The report included an explicit rationale for a higher LTC bed ratio for the NWT: "A comparison of institutionalization bed rates between the NWT and Canada indicated that the NWT bed population ratio for LTC was significantly higher (252 beds/1,000 population 75+ years) than all of the other jurisdictions, and 150% higher than the Canadian average. The higher rate of LTC institutionalization in the NWT can, in part, be explained by a lack of private sector involvement in the provision of LTC facilities, as well as a more aggressive move by the southern provinces towards providing home-support arrangements to their senior's population in order to reduce the dependency on nursing homes and institutional care".

Additionally, the report observed "… given the unique circumstances of NWT, it is considered that a benchmark of 110 beds/1,000 is too low. The NWT population health experience has a demonstrated higher incidence of chronic diseases. As well, issues related to the *lack of available and appropriate housing, along with the necessary supporting community-based infrastructure, all contribute to higher rates of institutionalization in the NWT*, and the need for additional beds, as compared to Canada as a whole. It is therefore proposed that NWT adopt a benchmark of 120 beds/1,000 for residents 70+ years".

7.4.1 Initial Demographic Driven Bed Demand Scenarios, Projections and Variance: NWT

In compliance with the policy guidance from the ISDM and direction from the Steering Committee, there were a total of four (4) bed ratio demand scenarios selected for the initial demographic driven bed demand projection:

Scenario 1:	115 beds per 1,000 population 70+ years at 95% bed occupancy;
Scenario 1A:	115 beds per 1,000 population 70+ years at 100% bed occupancy;
Scenario 2:	120 beds per 1,000 population 70+ years at 95% bed occupancy; and
Scenario 2A:	120 beds per 1,000 population 70+ years at 100% bed occupancy.

While the administrative data over the last decade indicates that most LTC facilities operate at or close to full capacity (i.e., 100%), the logical modeling assumption is that not every bed will be occupied immediately upon becoming vacant. Consequently, the use of a 95% bed occupancy rate allows for the variation in the actual bed occupancy of a given facility.

Initial Projection Results Summary: NWT and Regions

Presented below are the initial bed demand projection results at the NWT and regional level based on the four scenarios for selected reference years. The purpose of the initial demographic driven demand projection is to provide a longer time horizon reference framework, and to illustrate the potential impact of no additional investment in LTC Program resource and facilities.

The projection methodology assumptions include a key variable – that being the TAC Wait List. A decision was made to use the most current available full fiscal year data (FY 2014-15) as a factor in reflecting a more pragmatic bed demand picture by accounting for latent demand.

The administrative data for the Wait List and wait times for the 2010-11 to 2014-15 period indicates a significant range of applicants on the Wait List. The Wait List ranged from a high of 63 in 2010-11 to a low of 34 in 2012-13. The "average" number on the Wait List was 43 for the five year period.

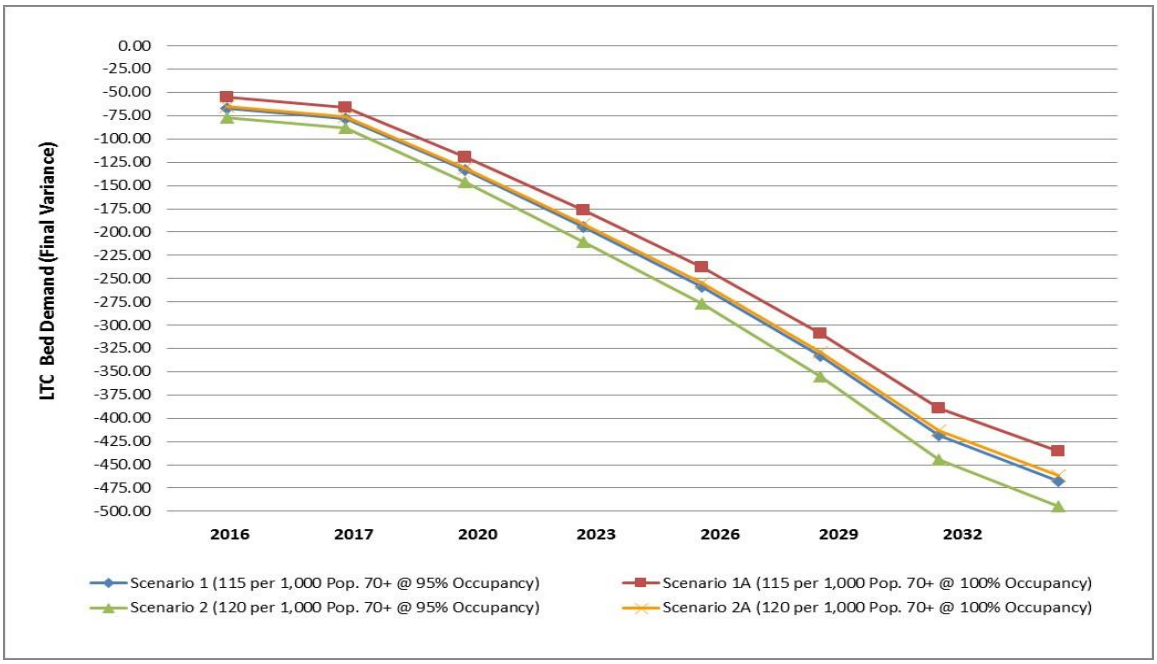
The variation in Wait List numbers, as well as wait times, has not been fully assessed by the LTC Program staff at this time. Accordingly, and given the variation, it was decided for purposes of the demographic projection, to use the last full fiscal year data as the assumed Wait List, which in FY 2014-15 was 38 applicants.

Bed Demand Scenarios: Relationships and Patterns

The following section provides a perspective on the four scenarios, and a summary and key findings of bed demand at the NWT and regional level.

The relationships and patterns among the four scenarios are summarized in Figure 7.6.

Figure 7.6: LTC Bed Demand Projections Based on Final Variance for Demand, NWT, 2016-2034, Scenarios 1, 1A, 2 and 2A



The key observations to draw from Figure 7.6 are:

- The lowest bed demand variance is under Scenario 1A (115 beds per 1,000 population 70+ years at 100% bed occupancy;
- The highest bed demand variance is under Scenario 2 (120 beds per 1,000 population 70+ years at 95% bed occupancy;
- Approximately equal bed demand variance occurs under Scenario 1 (115 at 95%) and Scenario 2A (120 at 100%).

A condensed summary of the overall bed demand (*rounded*) by Scenario and selected projected year is presented below. The detailed tables are contained in Appendix E.

Scenario	2016	2020	2026	2034
Scenario 1 (115 at 95%)	-67	-134	-259	-467
Scenario 1A (115 at 100%)	-56	-119	-237	-436
Scenario 2 (120 at 95%)	-77	-147	-277	-495
Scenario 2A (120 at 100%)	-65	-131	-255	-462

Comparing the *lowest* bed demand under Scenario 1A with the *highest* under Scenario 2, yields the following observations:

- The bed demand in 2016 is -56 and -77, under Scenario 1A and 2, respectively. The difference in bed demand is 21.
- The bed demand in 2020 is -119 and -147, under Scenario 1A and 2, respectively. The difference in bed demand is 28.
- The bed demand in 2026 is -237 and -277, under Scenario 1A and 2, respectively. The difference in bed demand is 40.
- The bed demand in 2034 is -436 and -495, under Scenario 1A and 2, respectively. The difference in bed demand is 59.

Comparing the *mid-range* bed demand under Scenarios 1 and 2A, yields the following observations:

- The bed demand in 2016 is -67 and -65, under Scenario 1 and 2A, respectively. The difference in bed demand is 2.
- The bed demand in 2020 is -134 and -131, under Scenario 1 and 2A, respectively. The difference in bed demand is 3.
- The bed demand in 2026 is -259 and -255, under Scenario 1 and 2A, respectively. The difference in bed demand is 4.
- The bed demand in 2034 is -467 and -462, under Scenario 1 and 2A, respectively. The difference in bed demand is 5.

NWT and Regional Demand Summary

The details at the NWT, followed by the regional bed demand for selected reference years are provided in the following sections. For ease of cross-referencing the detailed tables in Appendix E, the demand numbers are not rounded.

NWT Demand: Scenario 1 (115 at 95%) and Scenario 1A (115 at 100%)

Reference Year 2016: Scenario 1 (115 at 95%) and 1A (115 at 100%)

- Under Scenario 1 and 1A the total NWT variance (bed deficit) will be -67.00 beds and -55.50 beds, respectively.
- Five of the seven regions will experience a negative variance, ranging from -27.43 and -25.21, respectively, for the Beaufort Delta, to a modest surplus in the Sahtu of +0.81 and +1.67, respectively, and +0.63 and +1.40 in the Tlicho.

Reference Year 2020: Scenario 1 (115 at 95%) and 1A (115 at 100%)

- Under Scenario 1 and 1A the total NWT variance (bed deficit) will be -133.70 beds and -118.87 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -53.13 and -47.57, respectively, and the smallest variance in the Tlicho at -0.95 and -0.10, respectively.

Reference Year 2026: Scenario 1 (115 at 95%) and 1A (115 at 100%)

- Under Scenario 1 and 1A the total NWT variance (bed deficit) will be -258.51 beds and -237.43 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -123.09 and -114.04, respectively, and the smallest variance in the Tlicho at -5.06 and -4.01, respectively.

Reference Year 2034: Scenario 1 (115 at 95%) and 1A (115 at 100%)

- Under Scenario 1 and 1A the total NWT variance (bed deficit) will be -467.32 beds and -435.81 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -236.40 and -221.68, respectively, and the smallest variance in the Tlicho at -13.05 and -11.60, respectively.

NWT Demand: Scenario 2 (120 at 95%) and Scenario 2A (120 at 100%)

Reference Year 2016: Scenario 2 (115 at 95%) and 2A (115 at 100%)

- Under Scenario 2 and 2A the total NWT variance (bed deficit) will be -77.00 beds and -65.00 beds, respectively.

- Five of the seven regions will experience a negative variance, ranging from -29.36 and -27.04, respectively, for the Beaufort Delta, to a modest surplus in the Sahtu of +0.06 and +0.96, respectively, and -0.04 and +0.76 in the Tlicho.

Reference Year 2020: Scenario 2 (115 at 95%) and 2A (115 at 100%)

- Under Scenario 2 and 2A the total NWT variance (bed deficit) will be -146.60 beds and -131.12 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -57.96 and -52.16, respectively, and the smallest variance in the Tlicho at -1.68 and -0.80, respectively.

Reference Year 2026: Scenario 2 (115 at 95%) and 2A (115 at 100%)

- Under Scenario 2 and 2A the total NWT variance (bed deficit) will be -276.83 beds and -254.84 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -130.97 and -121.52, respectively, and the smallest variance in the Tlicho at -5.98 and -4.88, respectively.

Reference Year 2034: Scenario 2 (115 at 95%) and 2A (115 at 100%)

- Under Scenario 2 and 2A the total NWT variance (bed deficit) will be -494.73 beds and -461.84 beds, respectively.
- All regions will experience a negative variance, with the largest being in the Yellowknife region at -249.20 and -233.84, respectively, and the smallest variance in the Tlicho at -14.32 and -12.80, respectively.

7.4.2 Optimal Bed Ratio Scenarios: Conclusions

Based on the preponderance of the evidence from the review, (e.g., demographic, health status, utilization patterns and rates, LTC facility administrative data, including residents' socio-demographic characteristics and mortality rates, best practices from other jurisdictions, and the bed inventory for FY 2016-17), the following optimal bed ratios are recommended for two phases. The first phase is FY 2016-17 to 2026-27, and the second for FY 2027-28 to 2033-34.

Phase 1: Bed Ratio of 115 per 1,000 Population 70+ Years for FY 2016-17 to 2026-27:

The DHSS approve and implement a bed ratio of 115 per 1,000 population 70+ years, using a 95% bed occupancy scenario in FY 2016-17 to 2026-27 for completing demand projections and for operationalizing the Model.

Rationale

The recommended ratio is consistent with the vision of the *NWT Continuing Care Framework* (2008), and supports the DHSS strategic objective to optimally align and invest program resources (i.e., capital and operating costs) into LTC facilities only when and where needed based on valid evidence.

- From a more technical perspective, the rationale for the ratio is based on the analysis and results from the initial demographic based demand projection that reflects the following: (i) births, deaths and migration patterns – including in the net out-migration of the seniors' cohort); (ii) actual utilization patterns across the HSS system and regional facilities, specifically the trend of increasing age at admission and shorter LOS post the TAC admission process; (iii)

TAC Wait List; (iv) actual resident flow through the facilities due to mortality rates and patterns; (v) potentially accommodates the bed demand from the existing and emerging health status drivers (e.g., dementia and FASD); and, (vi) directly reflects the fact that the potential demographic driven demand from the 70+ years cohort will peak post 2020 and continue a slow relative decline through to 2026. This slow decline will continue through to 2032, where a slightly accelerated decline will be experienced through to 2034, the limit of the population projection model. The 70+ years cohort population trend can be characterized as '*increasing at a decreasing rate*'.

Phase 2: Bed Ratio of 105 per 1,000 Population 70+ Years for FY 2027-28 to 2033-34:

The DHSS, in collaboration with the NWT Bureau of Statistics, should review and validate the population projections post the 2026 census. Assuming that (i) the current projections and modeling assumptions presented in the review remain reasonably valid (i.e., specifically, the peaking of the growth in the 70+ years cohort and migration patterns); and, (ii) re-assessing the demographic and non-demographic drivers impact on demand and supply in order to validate the projected trends, the bed ratio should be reduced accordingly to 105 per 1,000 population aged 70+ years, using a 95% bed occupancy scenario.

In the event that there is substantive change in demand and supply trends, (e.g., should DHSS invest additional resources in other areas of Continuing Care Services) which may reduce demand for facility based care, the 105 beds ratio could potentially be further reduced to reflect and accommodate the new demand and/or supply trend trajectories. This decision will need to be made in light of the data available leading up to and post FY 2026-27.

Rationale

- The demographic driven demand for the 70+ years cohort is projected to peak post 2020 and continue a slow relative decline through to 2026. This slow decline will continue through to 2032, where a slightly accelerated decline will be experienced through to 2034.
- Assuming that the demographic and bed demand modeling assumptions remain valid, the reduction of the ratio to 105 per 1,000 population aged 70+ years is expected to maintain a reasonable balance between demand and supply, and mitigate the risk of investing in potential over-capacity in LTC facilities.

7.4.3 Regional Bed Demand Scenario Results

Regional Demand Projections by Reference Year

The following is a summary of bed demand under scenarios 1, 1A, 2 and 2A for each region by selected (and grouped) reference years. The regional share of the total NWT bed demand for each projection year is also provided. The changes in regional share overall, as well as over selected reference periods, reflect the variation in population changes over the 2016 to 2034 period, differences in demographic structure (i.e., the 70+ years cohort), the impact of latent bed demand (i.e., Wait List), and the regional LTC bed inventory.

The following tables and figures can be referenced for additional details on regional demand projections in Appendix E, Tables E-1 to E-3.1 and Figures E-1 to E-3.3. The bed demand (variance) is shown with complete calculated numbers (i.e., not rounded) to provide clarity in cross-referencing the supporting tables and figures.

Regional Projections for Bed Demand Scenarios: 1 and 1A

Scenario 1 (*115 bed per 1,000 population 70+ at 95% occupancy*)
Scenario 1A (*115 bed per 1,000 population 70+ at 100% occupancy)*

Region: Beaufort Delta ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be -27.43 and -25.21 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively. This region has the highest proportion of total NWT bed demand under all scenarios in 2016.
- The regional demand for -27.43 beds represents some 41% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand for -25.21 beds represents some 45% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Beaufort Delta ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -33.60 and -31.07 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -33.60 beds represents some 25% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -31.07 beds represents some 26% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Beaufort Delta ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -46.55 and -43.38 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -46.55 beds represents some 18% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -43.38 beds represents some 18% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Beaufort Delta ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -77.91 and -73.16 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -77.91 beds represents some 17% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -73.16 beds represents some 17% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: Sahtu ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be a surplus +0.81 and +1.67 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand surplus of +0.81 beds represents some -1% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand surplus of +1.67 beds represents some -3% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Sahtu ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -2.94 and -1.90 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -2.94 beds represents some 2% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -1.90 beds represents some 2% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Sahtu ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -9.72 and -8.34 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -9.72 beds represents some 4% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -8.34 beds represents some 4% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Sahtu ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -19.28 and -17.42 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -19.28 beds represents some 4% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -17.42 beds represents some 4% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: Dehcho ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be -9.33 and -8.12 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -9.33 beds represents some 14% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand for -8.12 beds represents some 15% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Dehcho ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -16.23 and -14.67 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -16.23 beds represents some 12% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -14.67 beds represents some 12% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Dehcho ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -29.06 and -26.86 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -29.06 beds represents some 11% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -26.86 beds represents some 11% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Dehcho ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -45.53 and -42.50 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -45.53 beds represents some 10% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -42.50 beds represents some 10% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: Tlicho ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be a surplus +0.63 and +1.40 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand surplus of +0.63 beds represents some -1% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand surplus of +1.40 beds represents some -3% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Tlicho ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -0.95 and -0.10 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -0.95 beds represents some 1% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -0.10 beds represents about 0% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Tlicho Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -5.06 and -4.01 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -5.06 beds represents some 2% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -4.01 beds represents some 2% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Tlicho Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -13.05 and -11.60 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -13.05 beds represents some 3% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -11.60 beds represents some 3% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: Yellowknife Reference Year: 2016

- Total projected regional bed demand (*variance*) will be -16.57 and -12.84 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -16.57 beds represents some 25% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand for -12.84 beds represents some 24% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Yellowknife Reference Year: 2020

- Total projected regional bed demand (*variance*) will be -53.13 and -47.57 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively. This region represents the highest proportion of total NWT bed demand under all scenarios post 2016.
- The regional demand for -53.13 beds represents some 40% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -47.57 beds represents less than 40% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Yellowknife Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -123.09 and -114.04 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -123.09 beds represents some 48% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -114.04 beds represents some 48% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Yellowknife ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -236.40 and -221.68 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -236.40 beds represents some 51% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -221.68 beds represents some 51% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: South Slave ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be -11.68 and -10.05 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -11.68 beds represents some 17% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand for -10.05 beds represents some 18% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: South Slave ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -17.13 and -15.23 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -17.13 beds represents some 13% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -15.13 beds represents some 13% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: South Slave ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -30.93 and -28.34 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -30.93 beds represents some 12% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -28.34 beds represents some 12% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: South Slave ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -51.27 and -47.66 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -51.27 beds represents some 11% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -47.66 beds represents some 11% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Region: Fort Smith Reference Year: 2016

- Total projected regional bed demand (*variance*) will be -3.43 and -2.36 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -3.43 beds represents some 5% of the total NWT bed demand (-67.00) for this projection year under Scenario 1.
- The regional demand for -2.36 beds represents some 4% of the total NWT bed demand (-55.50) for this projection year under Scenario 1A.

Region: Fort Smith Reference Year: 2020

- Total projected regional bed demand (*variance*) will be -9.72 and -8.34 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -9.72 beds represents some 7% of the total NWT bed demand (-133.70) for this projection year under Scenario 1.
- The regional demand for -8.34 beds represents some 7% of the total NWT bed demand (-118.87) for this projection year under Scenario 1A.

Region: Fort Smith Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -14.08 and -12.48 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -14.08 beds represents some 5% of the total NWT bed demand (-258.51) for this projection year under Scenario 1.
- The regional demand for -12.48 beds represents some 5% of the total NWT bed demand (-237.43) for this projection year under Scenario 1A.

Region: Fort Smith Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -23.88 and -21.79 under Scenario 1 (at 95%) and Scenario 1A (at 100%), respectively.
- The regional demand for -23.88 beds represents some 5% of the total NWT bed demand (-467.32) for this projection year under Scenario 1.
- The regional demand for -21.79 beds represents some 5% of the total NWT bed demand (-435.81) for this projection year under Scenario 1A.

Bed Demand Scenarios: 2 and 2A

Scenario 2 (*120 bed per 1,000 population 70+ at 95% occupancy*)
Scenario 2A (*120 bed per 1,000 population 70+ at 100% occupancy*)

Region: Beaufort Delta ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be -29.36 and -27.04 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively. This region has the highest proportion of total NWT bed demand under all scenarios in 2016.
- The regional demand for -29.36 beds represents some 38% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional demand for -27.04 beds represents some 42% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Beaufort Delta ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -35.80 and -33.16 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -35.80 beds represents some 24% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -33.16 beds represents some 25% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Beaufort Delta ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -49.32and -46.00 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -49.32 beds represents some 18% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -46.00 beds represents some 18% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Beaufort Delta ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -82.03 and -77.08 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -82.03 beds represents some 17% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -77.08 beds represents some 17% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: Sahtu ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be a surplus of +0.06 and +0.96 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional surplus of +0.06 beds represents some -1% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional surplus of +0.96 beds represents some -1% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Sahtu ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -3.85 and -2.76 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -3.85 beds represents some 3% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -2.76 beds represents some 2% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Sahtu ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -10.93 and -9.48 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -10.93 beds represents some 4% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -9.48 beds represents some 4% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Sahtu ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -20.91 and -18.96 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -20.91 beds represents some 4% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -18.96 beds represents some 4% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: Dehcho ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be -10.39 and -9.12 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -10.39 beds represents some 13% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional demand for -9.12 beds represents some 14% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Dehcho ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -17.59 and -15.96 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -17.59 beds represents some 12% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -15.96 beds represents some 12% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Dehcho ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -30.98 and -28.68 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -30.98 beds represents some 11% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -28.68 beds represents some 11% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Dehcho ***Reference Year: 2034***

- Total projected regional bed demand (*variance*) will be -48.16 and -45.00 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -48.16 beds represents some 10% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -45.00 beds represents some 10% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: Tlicho ***Reference Year: 2016***

- Total projected regional bed demand (*variance*) will be of -0.04 and +0.76 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional surplus of -0.04 beds represents some 0.1% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional surplus of +0.76 beds represents some -1% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Tlicho ***Reference Year: 2020***

- Total projected regional bed demand (*variance*) will be -1.68 and -0.80 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -1.68 beds represents some 1% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -0.80 beds represents some 1% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Tlicho ***Reference Year: 2026***

- Total projected regional bed demand (*variance*) will be -5.98 and -4.88 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -5.98 beds represents some 2% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -4.88 beds represents some 2% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Tlicho Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -14.32 and -12.80 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -14.32 beds represents some 3% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -12.80 beds represents some 3% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: Yellowknife Reference Year: 2016

- Total projected regional bed demand (*variance*) will be -19.81 and -15.92 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -19.81 beds represents some 26% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional demand for -15.92 beds represents some 24% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Yellowknife Reference Year: 2020

- Total projected regional bed demand (*variance*) will be -57.96 and -52.16 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -57.96 beds represents some 40% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -52.16 beds represents some 40% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Yellowknife Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -130.97 and -121.52 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -130.97 beds represents some 47% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -121.52 beds represents some 48% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Yellowknife Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -249.20 and -233.84 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -249.20 beds represents some 50% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -233.84 beds represents some 51% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: South Slave Reference Year: 2016

- Total projected regional bed demand (*variance*) will be -13.11 and -11.40 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -13.11 beds represents some 17% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional demand for -11.40 beds represents some 18% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: South Slave Reference Year: 2020

- Total projected regional bed demand (*variance*) will be -18.79 and -16.80 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -18.79 beds represents some 13% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -16.80 beds represents some 13% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: South Slave Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -33.19 and -30.48 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -33.19 beds represents some 12% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -30.48 beds represents some 12% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: South Slave Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -54.41 and -50.64 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -54.41 beds represents some 11% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -50.64 beds represents some 11% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

Region: Fort Smith Reference Year: 2016

- Total projected regional bed demand (*variance*) will be -4.36 and -3.24 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -4.36 beds represents some 6% of the total NWT bed demand (-77.00) for this projection year under Scenario 2.
- The regional demand for -3.24 beds represents some 5% of the total NWT bed demand (-65.00) for this projection year under Scenario 2A.

Region: Fort Smith Reference Year: 2020

- Total projected regional bed demand (*variance*) will be -10.93 and -9.48 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -10.93 beds represents some 7% of the total NWT bed demand (-146.60) for this projection year under Scenario 2.
- The regional demand for -9.48 beds represents some 7% of the total NWT bed demand (-131.12) for this projection year under Scenario 2A.

Region: Fort Smith Reference Year: 2026

- Total projected regional bed demand (*variance*) will be -15.47 and -13.80 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -15.47 beds represents some 6% of the total NWT bed demand (-276.83) for this projection year under Scenario 2.
- The regional demand for -13.80 beds represents some 5% of the total NWT bed demand (-254.84) for this projection year under Scenario 2A.

Region: Fort Smith Reference Year: 2034

- Total projected regional bed demand (*variance*) will be -25.71 and -23.52 under Scenario 2 (at 95%) and Scenario 2A (at 100%), respectively.
- The regional demand for -25.71 beds represents some 5% of the total NWT bed demand (-494.73) for this projection year under Scenario 2.
- The regional demand for -23.52 beds represents some 5% of the total NWT bed demand (-461.84) for this projection year under Scenario 2A.

7.5 Operationalizing the NWT Long-Term Care Model

Based on the initial demographic driven bed demand projections, the next step in the Model (as presented in Section 7.2) is to review, amend (as necessary) and validate the projections by operationalizing the actual flow of facility residents. The key observations regarding the Model include the following:

- The Model provides the framework to build on the initial demographic driven bed demand projections and to operationalize the LTC Program management of bed demand and supply;

- The Model has the following components: (i) identification of potential new clients based on demographic and non-demographic drivers. This accommodates potential demand related to dementia and FASD; (ii) demand based on the TAC Wait List; (iii) administrative data on the existing clients (i.e., profiles, location etc.); (iv) confirmation of the existing bed inventory; (v) identification of any proposed changes to the bed inventory; and, (vi) assessment of data on potential departing clients based on mortality rates and probabilities;

- The Model integrates the impact of facility mortality rates and patterns (i.e., the flow of residents through facilities) on bed demand projections and potential final bed demand; and

- The Model provides a coherent and pragmatic perspective on the potential balance (or variance) between demand and supply for the subsequent fiscal year. This is completed at both the overall NWT level and each regional facility.

The process and sequence for operationalizing the Model is summarized below and illustrated in Figure 7.7 and Figure 7.8.

- Complete the detailed demographic projections at the NWT and regional level for seniors 70+ years. The projections provided in an Excel spreadsheet, and include the following variable: total population, gender and ethnicity;

- Update and consolidate the LTC Program system resources with respect to existing facilities and beds, including 'in-progress' construction of facilities that are scheduled for completion in FY 2016-17;

- Access and consolidate the administrative data with respect to the following variables for facility residents: number of residents (by admission category; LOC: gender and ethnicity)); number of departures (primarily due to death); LOS; and, age at death. The data are cross-tabulated by gender and ethnicity to inform the calculations in the Model that are completed post the initial demographic driven bed demand projections;

- Set FY 2016-17 as the base reference year in order to provide a more pragmatic and valid perspective on LTC bed demand and supply situation that will exist;

- Set the LTC Program bed ratio scenarios in compliance with the policy and program decisions by DHSS. The scenarios are as follows: *Scenario 1:* 115 beds per 1,000 population 70+ years based on 95% bed occupancy; *Scenario 1A*: 115 beds per 1,000 population 70+ years based on 100% bed occupancy; *Scenario 2:* 120 beds per 1,000 population 70+ years based on 95% bed occupancy; *Scenario 2A*: 120 beds per 1,000 population 70+ years based on 100% bed occupancy;

- Run and amend as necessary the formula driven spreadsheets and summary tables (see Appendix E, Tables E-1 to E-1.7 and E-2 to E-2.7) for the selected scenarios. This includes the following data components: NWT and regional population cohorts for the selected reference years; initial demographic driven bed demand; existing bed inventory (with FY 2016 -17 as the base reference year); TAC Wait List (as current as available allocated to the applicants' home region); consideration of potential OOT repatriation; and, bed variance from initial projected demand at the NWT and regional level;

- Run the selected scenarios for the following reference years (that align with the NWT Bureau of Statistics Population Projection Model): 2016, 2017, 2020, 2023, 2026, 2029, 2032 and 2034. It should be noted that this does not represent the final bed demand, as this occurs at a subsequent stage which factors in other variables, including LOS and resident mortality rates;

- Develop aggregate summary tables and supporting figures for the selected scenarios at the NWT and regional level for each of the selected reference period; and

- Complete the analysis of variance based on the aggregate summary tables and figures.

The operationalization of the Model is illustrated in Figure 7.8. The steps in operationalizing are presented below. The yellow coloured circles represent the associated data and/or calculated value, and are identified in the summarized steps.

Figure 7.7: NWT LTC Capacity, Demand and Supply Model

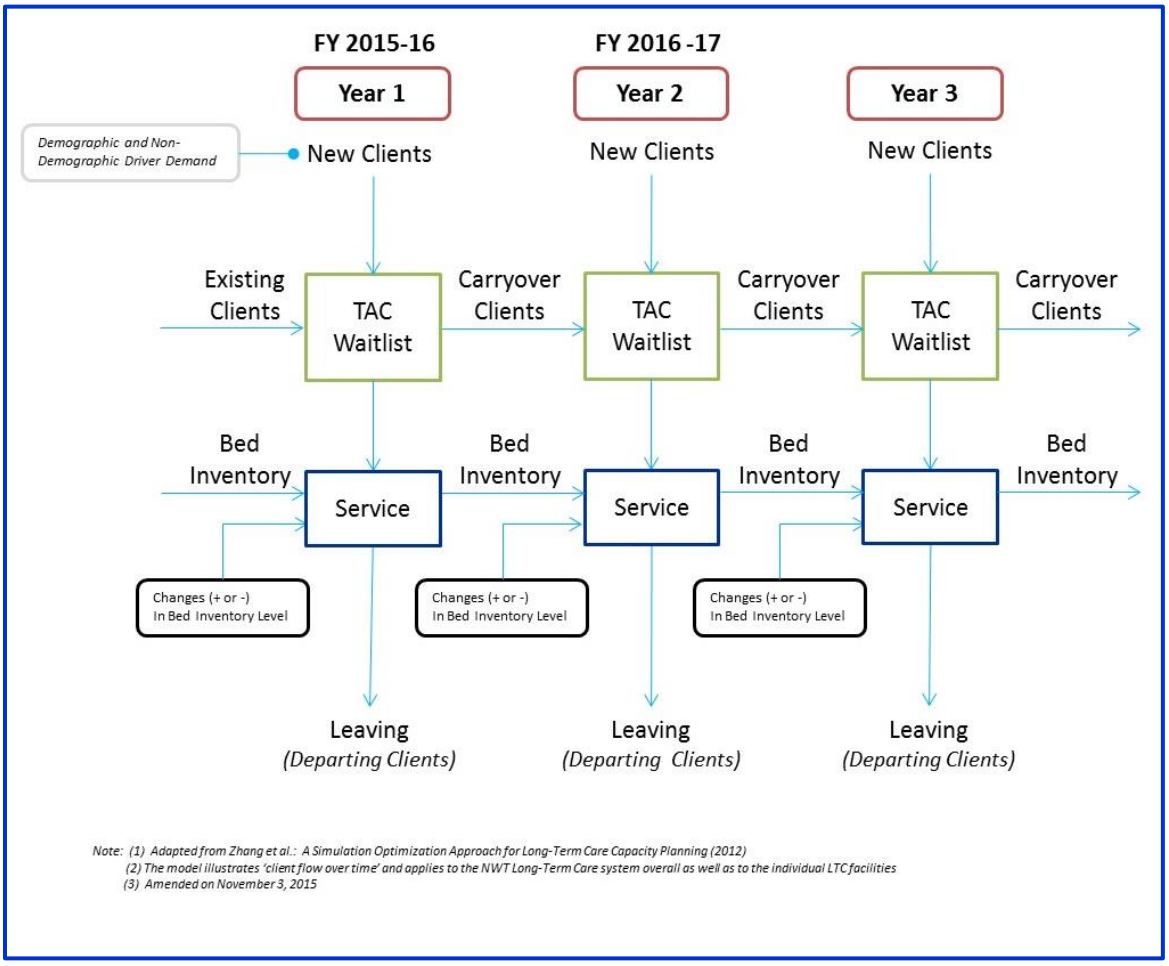
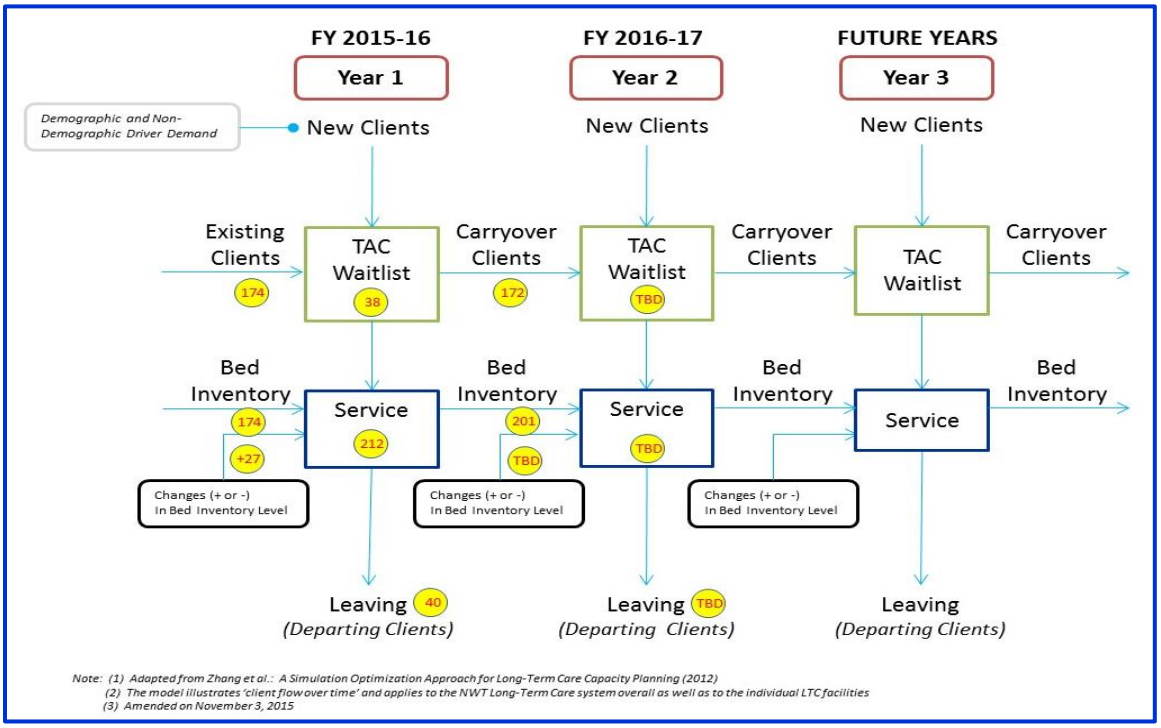


Figure 7.8: NWT LTC Capacity, Demand and Supply Model: Operational Flow for FY 2015-16 to FY 2016-17



Operationalizing Process

- At the end of FY 2015-16 (Year 1), the Program Manager reviews the potential demand from demographic and non-demographic drivers to identify potential new clients. Based on the existing data, *the result indicates:* zero (0) additional demand at this step;
- The existing client and location are confirmed based on program administrative data. *The result indicates:* 174 existing clients;
- The TAC Wait List is confirmed with respect to applicants who were assessed and are eligible for placement. *The result indicates:* 38 eligible applicants on the Wait List at the end of FY 2014-15;
- The combined demand is based on (i) existing clients; (ii) TAC Wait List; and, (iii) other potential demand drivers, and represents 'potential service demand' in FY 2016-17 (Year 2). *The result indicates:* 212 potential facility clients to 'service';
- The potential service demand is then compared with (i) the existing bed inventory; and, (ii) any proposed changes to inventory levels (current and any changes (i.e., increase or decrease) to the inventory. *The result indicates:* 174 existing and 27 scheduled for completion for a total of 201 beds;
- Potential departing clients based on mortality rates and probabilities. *The result indicates:* An average of 40 departures based on mortality data for 2010 to 2015; and
- The final result provides a pragmatic and valid perspective on the balance between demand and supply. This process is completed at the NWT program and individual regional facilities level.

7.6 Long-Term Care Policy Issues and Considerations

7.6.1 Policy Issues and Choices

The cumulative complexity of the non-demographic drivers and supply side drivers (see discussion in Sections 3.2 and 3.3) results in large part from the nature of the associated policy issues and choices, for both consumers and governments. The following section highlights policy issues and choices based on the LTC Program experience, lessons from other jurisdictions, and literature review.

Policy Questions

The unavoidable impact of demographic trends and the arithmetic of aging, have raised key policy questions about the ability to care for the elderly. The key policy questions being addressed in most jurisdictions (e.g., Canada, Europe, and New Zealand) are:

- *How much care will be demanded (and when and where)?*
- *Who will provide the care (residential care facility or family)?*
- *What LOC should be provided in the different arrangements?*
- *What will it cost?*
- *Who will pay?*
- *How can financial strain be mitigated for families (with severely dependent members)?*

The LTC policy discussion is further complicated by the fact that it touches upon numerous areas of public policy and how these may potentially interact and/or create unintended impacts. New Zealand (2012) captured the challenge with absolute clarity in its report: "*While long-term care is generally viewed and organized from a health system perspective, it intersects with aspects of social and welfare policy. Also, it shares characteristics with retirement income policy and can impact intergenerational transfers*."

Policy Options

The literature review identified potential policy options regarding the provision of LTC services in a fiscally sustainable manner. These include changes to existing LTC Program parameters and management and diversification of risk.

Change the parameters of existing programs: The approach stems from considering changes to the parameters of existing programs, and includes: stricter income and asset testing; withdrawing services or subsidies from people 'assessed' as having lower levels of need; increasing price caps (to stimulate competition and increase service quality), which may mean higher contribution from those individuals who can afford it.

The associated policy questions are:

- *What is the extent to which costs of care should be subsidized regardless of ability to pay?*
- *How far to seek to 'pre-fund' the costs associated with an aging population?*

This entails addressing a number of fundamental considerations:

- *To what extent should people be required to meet their own costs of care when they are able to do so?*
- *Whether and to what extent government should subsidize care in order to be fair and equitable and in order to protect individuals' capital and facilitate intergenerational transfers?*

Management and diversification of risk: Fundamentally, this is about the management and diversification of risks and intergenerational transfers (as well as the associated issues of equity and fairness). Among the possible ways to manage and/or mitigate fiscal risk is to consider the following options:

- *Greater reliance on personal savings;*
- *Greater reliance on private insurance;*
- *Compulsory social (i.e., LTC) insurance;*

- *Other forms of 'hypothecated' taxation (i.e., special purpose tax imposed and safeguarded for LTC);*
- *Expand existing national superannuation programs; and*
- *Establish and/or facilitate 'social impact bonds' to incent private and non-profit organizations to provide services.*

7.7 Long-Term Care Funding Models in Other Jurisdictions

The DHSS convened an internal workshop on funding model options on December 4, 2015. The session was developed and led by Lew Voytilla, consultant to the review. While a separate workshop summary report was prepared, the following provides a synopsis of the session process and key findings.
The overall purpose of the workshop was to enable initial consideration of funding model options of potential relevance to the NWT, which would require further research and analysis prior to any decisions being taken by the DHSS. The specific objectives of the workshop were: (i) review best available data on current costs; (ii) identify new LTC delivery/funding models (at a conceptual level) that will facilitate the expansion of LTC beds in as cost-effective a manner as practical without impacting quality of service; (iii) develop options (at a conceptual level) to reform existing LTC delivery/funding approaches to introduce efficiencies and lower per bed construction and operating costs to government without impacting quality of service and ensuring resident safety; and, (iv) discuss the potential of income and/or means testing in the NWT.

The workshop process involved the identification, discussion and evaluation of funding model components, which include: operations; construction; revenues (e.g., accommodation fees) and subsidies; and, licensing, standards and inspections. The following are key observations and findings from the workshop.

7.7.1 Jurisdictional Funding Models

The survey of LTC program delivery in other Canadian jurisdictions revealed a variety of models for funding facilities. The following are selected findings (see Section 7.8 for details from the jurisdictional scan):

- Publicly owned and operated facilities tended to be funded through normal government budgeting processes, but not entirely;
- The operational costs of privately owned and operated facilities were funded through either a negotiation-based model (PEI and Nova Scotia) or a formula-funding model (Alberta and Ontario). Alberta funded both public and private facilities through a single formula-based funding model;
- There was considerable variation in how jurisdictions funded LTC facility construction costs. For publicly owned facilities the government's normal capital planning and approval process was applied. For privately owned facilities, jurisdictions either made provision to address construction costs in the operational funding provided by allowing for mortgage financing to be included in a negotiated operating budget (Nova Scotia) or included a construction cost per diem in the funding formula (Ontario). Alberta addressed construction costs by making a capital grant to the facility owner/operator to offset up to 50% of approved construction costs; and

- Private facility owners/operators were generally expected to provide some level of construction financing from their own resources, recognizing that the source of this private financing would be recovered from operating profits or efficiencies elsewhere in their facility operations.

7.7.2 LTC Cost Components

There are four interrelated cost components of program delivery identified and evaluated: (i) cost of personal care; (ii) cost of residential accommodation; (iii) cost of facility management and administration; and, (iv) cost of facility construction. The components, which are funded through a range of approaches across jurisdictions, are defined as follows:

Cost of Personal Care

The costs to provide the active direct nursing, personal care and therapeutic support required based on the plan of care for the resident (costs increase with the acuity of the condition of the resident). Jurisdictions either funded these costs through line-by-line negotiations under a contribution agreement arrangement (PEI and Nova Scotia) or funded them based on a distribution formula using standard costs adjusted in some instances for average patient acuity (Alberta and Ontario). None of the jurisdictions surveyed recovered personal care costs from the resident.

Cost of Residential Accommodation

This includes such items as building operating costs (e.g., utilities and maintenance), janitorial services, housekeeping and laundry, and meals. There was variation in what jurisdictions considered accommodation costs vs. facility management and administration costs, but most jurisdictions did track a range of specific costs that formed the basis for the accommodation charge applied to residents. Some provinces included this cost component in line-by-line contribution agreement negotiations and then deducted revenues collected from residents in the form of accommodation fees (PEI and Nova Scotia). Those jurisdictions that utilized formula funding approaches either ignored these costs on the basis they would be recovered from residents (Alberta) or built a provision for these costs into the formula and then deducted the expected revenue from accommodation fees from the total (Ontario).

In most cases jurisdictions controlled the amount of any accommodation fee charged to residents and kept the fee standard (for comparable accommodation type – standard vs. private room) across all LTC facilities. The provincial jurisdictions surveyed provided some form of income or means tested subsidy to assist low income residents with the cost of the accommodation fee. There was considerable variation in how such subsidies were structured.

Cost of Facility Management and Administration

These are costs that are related to having the capacity to provide services. They include care supervision and scheduling, recruitment, training, patient assessment, infection control, admissions, insurance, payroll and benefits administration, general accounting, procurement, office supplies and equipment, IT, communications, planning and budgeting, and legal costs. If the jurisdiction utilizes a line-by-line contribution agreement approach these are negotiated costs. Under formula funding approaches they become an element of the formula determined on the basis of standard costs usually multiplied by the number of beds in the facility.

Cost of Facility Construction

The construction cost of a facility includes land acquisition, design, licensing, construction financing, mobilization/de-mobilization, site development, project management, foundation work, structure components and erection (including such items as electrical, communications, plumbing, finishes, HVAC

(heating, ventilation and air conditioning), furniture, fixtures and equipment, and, inspection and commissioning. For private owners, after construction is complete, construction costs are capitalized and amortized over the estimated useful life of the building. Long-term financing is arranged to replace construction financing, usually through a building mortgage. Ongoing annual costs consist of principal repayment and interest.

There is wide variation in how construction costs are addressed by jurisdictions. For publicly owned facilities these costs are budgeted through the government normal capital planning process. Where the facility is to be privately owned there are a number of funding models: (i) a line item for mortgage costs is negotiated as part of the operations contribution agreement negotiations (Nova Scotia); (ii) a per diem adjustment is made to the funding formula (Ontario); (iii) a construction grant is provided to offset all or part of the construction cost (NWT and Alberta); and, (iv) no provision is made for construction costs and owners/operators are expected to fund these costs from efficiencies and/or surpluses (PEI). The most current construction costs for participating jurisdictions shows a significant range which are impacted by facility design standards (see Section 7.8 for additional jurisdictional details). Based on the most current data available, the cost per bed ranged from a low of $200,000 to $300,000 (Nova Scotia), $250,000 to $500,000 (Alberta), and some $800,000 (NWT).

Blended Average per Bed Operating Costs

Operating costs per bed tend to be lower for private vs. public facilities. This reflects, in part, higher wage rates and standards in publicly owned and staffed facilities, and the tendency for public facilities to have residents requiring more complex care. Additionally, this also reflects the variation in economies of scale of facilities and corresponding staffing levels and mix ratios.

Annual Accommodation Charges

There is a wide range in resident accommodation charges across jurisdictions, ranging from an annual fee of zero ($0) (Nunavut) to over $41,000 (New Brunswick). Overall, revenue generated from resident accommodation fees represents less than 10% of annual operating costs. Most jurisdictions offer a subsidy to assist low income residents to pay the accommodation fee. All subsidy programs reviewed allow for the subsidy recipient to retain a minimum amount of monthly income for personal expenses, although there is wide variation in the amount allowed for personal expenses.

7.7.3 Funding Model Options Evaluation

To enable a consistent evaluation of the options for each funding component standard evaluation criteria (not weighted) were used for all the options with some modification to make the criteria relevant to the specific funding component being evaluated. The evaluated program components were: (i) operations; (ii) construction; and, (iii) revenues (e.g., accommodation fees) and subsidies. The evaluation criteria included for example: *How likely is it that the model will lower the cost of constructing new LTC beds?* The following summarize the evaluation results:

Operations: There were three options for funding operations costs.

(1) On a line-by-line basis as a regular department/health authority budget item (e.g., GNWT owned and operated facilities);
(2) Through contribution agreement negotiations with private owners/operators on a line-by-line basis; or
(3) Through a formula-based mechanism using standard costs (which can be either a distribution formula or a needs-based formula).

The operations evaluation results indicated that the three options were very close (i.e., ranging from 51 to 45 points), illustrating that there are certain challenges associated with all the options that must be further addressed before a fully informed choice could be made.

Construction: There were four options for funding construction of LTC beds.

(1) Funding 100% through the government capital planning process;
(2) Funding through an allowance for mortgage costs in the annual operations contribution agreement with private owners/operators;
(3) Funding through a government grant program at less than 100% of construction costs; or
(4) Funding through a per diem adjustment to the standard cost formula used to determine and/or allocate operational funding for LTC facilities.

The construction evaluation results indicated a relatively higher variance than the ratings for operations models with Options 2 and 4 rated highest, likely because financially-based evaluation criteria played a larger role in the evaluation of construction options.

Revenues and Subsidies: There were three revenue options evaluated, with each revenue option being predicated on a companion subsidy program to reduce the impact on low income residents. The accommodation fee in the options was based on:

(1) A flat rate unrelated to cost of service (status quo);
(2) Full recovery of accommodation costs; or
(3) Individual ability to pay with a cap.

The overall ratings favoured Option 1 largely due to the challenges in gaining support for increasing resident charges and in designing and administering an income tested subsidy program. There was a consensus that a subsidy program would be required if the accommodation fee was increased significantly and that income testing was preferred over means testing.

Funding Model Options Conclusions and Recommendations: Flowing from the discussion and evaluation findings, the funding model options workshop made a number of recommendations, both short-term (6 to 12 months) and longer-term (>12 months) addressing the cost components (i.e., operations, construction, revenue and subsidies; and, licensing, standards and inspection). The recommendations and associated rationale are contained in Section 8.0.

7.8 Jurisdictional Scan: Summary of Key Findings

The purpose of the jurisdictional scan was to develop a current perspective on LTC programs in participating jurisdictions across Canada to inform the NWT *Long-Term Care Program Review*. Specifically, the jurisdictional scan, completed through direct interviews and web-based research, examined selected areas of LTC program delivery, including: legislation; policies and standards; current and emerging LTC demand drivers (demographic and non-demographic); resident characteristics (i.e., LOC and LOS); program costs (capital and operations); resident fees; and, funding models.

Presented below is a brief summary of selected key findings. The findings summary should be interpreted through an important limitation of the scan – participation did not involve all jurisdictions. The jurisdictional participation involved: Nunavut, Newfoundland and Labrador, Prince Edward Island, Nova Scotia, Quebec, Ontario, and Alberta. The NWT completed the survey as well to contribute a

broader perspective on LTC programs, challenges and practices. The findings are presented under selected themes of the survey and are cross-referenced to the applicable interview question.

The key findings are presented under themes and are cross-referenced to the applicable interview question. A separate comprehensive report *Jurisdictional Scan: Summary Findings of Provincial and Territorial Responses* was prepared and available from the DHSS Continuing Care and Health System Planning, Territorial Health Services Division.

Legislative and Regulatory Base (Q: A.1)

All eight participating jurisdictions have a legislative and regulatory base for the provision of long-term Care (LTC) services. Four jurisdictions have specific legislation dedicated to LTC. The other jurisdictions work within enabling mandates respecting their ministry or department (i.e., broader acts covering 'health and social services'). Additionally, most jurisdictions have supplementary legislative and regulatory guidance from allied service areas – such as guardianship and trustee legislation.

Policy Base (Q: B.1; G.3)

Each jurisdiction has an extensive framework of policies, standards and directives regarding LTC. The policies range from formal government wide policies, to operational level policies, directives and guidelines. Most jurisdictions have positioned LTC services within their respective strategic and business/service plans.

While all jurisdictions have policy and standards based service levels and placement prioritization, only two jurisdictions (Alberta and PEI) have explicit service levels with regard to 'wait time' for admission to a facility (e.g. the target service level in Alberta is 70% of people waiting for a LTC bed should be placed within 30 days or less).

LTC Eligibility (Q: B.2)

Each jurisdiction has established LTC eligibility criteria, which encompass both general criteria – such as permanent residency in the jurisdiction, valid health care card etc., and program specific requirements to ensure access for those with the greatest demonstrated need (i.e., care level 4 and higher using credible health status assessment tools – such as InterRAI and Quebec's ISO-SMAF system) and to make efficient use of available resources. Notably, age is typically not a limiting factor for eligibility, with a range of age thresholds (i.e., 60 to 65 years and older). Jurisdictions that have an age threshold (e.g., the NWT criteria refers to age 60 years and older) also have a process to waive the admission criteria. This observation reflects the fact that across all jurisdictions, the average age of LTC facility residents is generally over 75 years.

LTC System and Supply (Q: C.1; and, F.1)

Most jurisdictions have one primary focal point (i.e., ministry or department) for LTC, with the actual delivery of services being through some type of regional authority mechanism. There are a range of LTC system models across the participating jurisdictions, encompassing a combination (and varying proportions) of public, private and not-for-profit service providers. The scale of LTC operations ranges from less than 50 beds in Nunavut to over 78,000 beds in Ontario. The range logically reflects the population base in different jurisdictions.

The current LTC facility (or equivalent terminology and definition) supply numbers and ownership was drawn from interviews and CIHI data based on the Statistics Canada *Long-Term Care Facilities Survey* for FY 2013 -14, which indicates that of the 1,334 long-term care facilities in the provinces (excludes the

territories), the ownership was: 425 (31.9%) are public, 410 (30.7%) are non-profit, and 499 (37.4%) are for profit. In Nunavut, there are two 10-bed LTC facilities owned and operated by the territorial government. There are also three 'seniors assisted living' facilities, two of which are operated by a not-for-profit, and one by a private operator. The Government of the NWT (Department of Health and Social Services) funds the operation of 174 LTC beds in nine facilities, including one 28-bed dementia care facility, and one 12-bed Extended Care Unit. There is currently one not-for-profit operator in the system.

Notably, LTC residents with higher acuity and care needs typically reside in public facilities. Not all publically owned and operated facilities are licensed and inspected. There are a range of approaches in jurisdictions regarding the regulation and inspection of private and not-for profit facilities, typically determined by whether the facility receives some type of funding (i.e., grant or contribution).

LTC Operational Factors (Q: C.2)

All jurisdictions identified the following key operational factors driving LTC programs and services: demographics (aging population and increased life expectancy, which are elevating demand); emergent demand resulting from increasingly complex health care needs of residents, particularly associated with dementia; significant capital and operational costs on a per bed basis; User expectations; low revenue generation from user fees; and, increased reporting and public accountability requirements. Most jurisdictions' strategic direction regard 'continuing care' have been (and continue to be) shaped by political commitments in response to an emerging public issue, complicated by the fact that LTC is but one component of broader health and social services system challenges.

Determining Demand for LTC (Q: D.1 (a) and (b); D.2 and D.3)

There is no single age specific definition of 'senior'. The recognized age for a senior ranges from 55 years and older to 75 years and older. A number of jurisdictions use a more common threshold of 65 years and older. The various age thresholds make direct cross-jurisdictional demand projection comparison challenging.

Each jurisdiction uses some type of demographic based (births, deaths and migration) demand projection model or method. Model components include: demographic change (i.e., seniors cohort; projection in five year groups by gender); LTC utilization rates; home care utilization rates and trends; bed ratios; changes in disease prevalence (e.g., dementia); wait list; and, consideration of other non-demographic factors, such as household structure; economic status.

LTC Facility Standard Services (Q: F.2)

There is generally a high degree of shared consistency among the participating jurisdictions regarding the standard services provided in LTC facilities. The standard core services include: client assessment; case management; 24 hour access to RN services; dietary services; access to medical supplies; equipment loan etc. See the details in the *Jurisdictional Scan: Summary Findings of Provincial and Territorial Responses* report regarding standard services and supplementary services (with and without additional cost to residents).

Applicant Assessment, Allocation and Prioritization (Q: H.1, H.2 and H.3)

All jurisdictions have an applicant assessment and allocation process and 'tool'. InterRAI is used as the base in four jurisdictions, while other tools include: Multi-Client Assessment (Quebec); Senior Assessment Screening Tool (PEI); Social Services Care Assessment (Nunavut); and, Continuing Care Assessment Package (NWT). Notwithstanding the variety of tools, every jurisdiction has clear admission

prioritization criteria – the applicant or resident acuity level (or change in level). While applicant 'wait time' is a consideration, it is a secondary consideration in most jurisdictions.

LTC Facility Length of Stay (Q: I.1)

The average Length of Stay (LOS) is in the range of 2 to 3 years. There are only limited data available regarding LOS variables such as age, gender, ethnicity, and level of care.

Facility per Bed Capital Cost (Q: K.4 (a))

Per bed capital costs range widely across jurisdictions. The contributing factors identified through the interviews (where data was available) include: size of the facility; design and security requirements; geographic location; state of the local economy and overall demand on the construction sector; and, the procurement process. The cost per bed ranged from a low of $200 to $300K (Nova Scotia), $250 to $500 K (Alberta) to some $800 K (NWT).

Facility per Bed Operating Cost (Q: K.4 (a))

Per bed *daily* operating costs range widely across jurisdictions, for both public and private facilities. This reflects in part the variation in economies of scale of facilities and corresponding staffing levels and mix ratios. The following are the data available at the time of the interviews for public facilities in selected jurisdictions.

Jurisdiction	Daily Cost per Bed
Northwest Territories	$372
Newfoundland and Labrador	$333
Nova Scotia	$250 to $300
Quebec	$218
Prince Edward Island	$195
Ontario	$164

Resident User Fees (Q: J)

There is a significant range in current facility resident user fees (i.e., co-payment), from annual fee of zero ($0) in Nunavut to over $41,000 in New Brunswick. Based on the findings from the interviews and subsequent search of the respective jurisdictional web sites, the following observations are provided regarding the minimum and maximum (where applicable) annual user fees. It should be noted that all jurisdictions offer income tested subsidies, with the exception of Newfoundland and Labrador that uses an asset test, and Nunavut where no fees are charged. Overall revenue generated from resident user fees represents less than 10% of annual operating costs.

Jurisdiction	Minimum ($)	Maximum ($)
New Brunswick	41,244	41,244
Nova Scotia	40,150	40,150
British Columbia	11,894	37,890
Newfoundland and Labrador	33,600	33,600
Ontario	21,298	30,423
Manitoba	12,593	29,419
Prince Edward Island	28,324	28,324
Saskatchewan	12,732	24,204
Alberta	18,648	22,716
Quebec	13,349	21,478
Yukon	12,775	12,775
Northwest Territories	9,264	9,264
Nunavut	0	0

8.0 RECOMMENDATIONS AND DECISION POINTS

Based on the review analysis and findings, the following recommendations and decision points are provided for consideration and action by the Steering Committee.

Recommendation 1: Approve and Implement the NWT Long-Term Care Model

The DHSS approve and implement the amended *NWT Long-Term Care Model* for capacity assessment, planning and management.

Rationale:

- The NWT LTC Model provides a comprehensive framework and methodology for capacity assessment, planning and management of the LTC Program. The model's six components and methodology (which includes comprehensive supply and demand modeling assumption) encompass and build on earlier models, best practices, and lessons learned (i.e., limitations and risks in forecasting). The model reflects and integrates the operational realities and drivers of demand and supply in the NWT.

Recommendation 2: Review and Validate the Demand and Supply Side Modeling Assumptions Prior to Capital Investment Decisions

The DHSS validate the demand and supply side modeling assumptions in the NWT LTC Model prior to making capital investment decisions.

Rationale

- The demand (demographic and non-demographic) and supply side assumptions are fundamental to the development of the initial demographic projections and the final adjustments through the operationalization of the NWT LTC Model; and
- Changes to the assumptions may potentially result in consequential (or even substantive) changes in demand for and/or supply of LTC services and facilities.

Recommendation 3: Operationalizing the NWT Long-Term Care Model

The DHSS operationalize the NWT LTC Model via the established methodology to confirm and validate the final (i.e., actual) bed demand based on the initial demographically driven demand projections and subsequent demand adjustments. The Model provides the framework to build on the initial demographically driven bed demand projections and to operationalize the management of bed demand and supply.

Rationale

- The Model has the following components: (i) identification of potential new clients based on demographic and non-demographic drivers. This accommodates (subject to the stated limitations) potential demand related to dementia and FASD; (ii) demand based on the TAC Wait List; (iii) administrative data on the existing clients (i.e., profiles, location etc.); (iv) confirmation of the existing bed inventory; (v) identification of any proposed changes to the bed inventory; and, (vi) assessment of data on potential departing clients based on mortality rates and probabilities;
- The Model integrates the impact of facility mortality rates and patterns on bed demand

projections and final bed demand (as discussed in Section 6.7.1); and
- The Model provides a coherent and pragmatic perspective on the potential balance (or variance) between demand and supply for the next FY. This is completed at both the overall NWT level and each regional facility.

Recommendation 4: Implement the InterRAI System of Standardized Needs Assessment Instruments

The DHSS replace the existing Continuing Care Assessment Package (CCAP) and implement the International Residential Assessment Instrument (InterRAI) system for home care and LTC. During the transition period the DHSS should continue to monitor and collect the LOS data by key variables (i.e., residents population overall; LOC; gender; ethnicity; and, admission category).

Rationale

- Aging populations and increasing prevalence of chronic diseases present challenges for policy and program decisions. Populations as well as individuals have different prevalence of conditions related to aging and chronic disease. This is compounded by cultural and institutional differences in care service provision, eligibility criteria and funding models;
- The interRAI system of standardized needs assessment instruments for routine care that generate a range of data that can be scaled and integrated. Data driven algorithms generate outcome scales, care planning support protocols, quality indicators, and a resource use case mix system;
- The Continuing Care Standards for Home and Community Care; LTC; and Supported Living programs, which include standards related to quality, safety and risk management. Quality indicators are used to evaluate how effectively care is being provided within a facility and across facilities. Additionally, this enables direct integration with data from the CIHI Continuing Care Reporting System (CCRS) to enable comparative analysis of demographic, clinical, functional and resource utilization statistics – that inform the monitoring of selected variables in resident mortality rates and patterns, and LOS which further informs the flow of resident through facilities and bed management decisions;
- The comprehensive data that InterRAI can generate will directly inform the development and management of operating funding through a standard cost based formula (which may be either a distribution or a needs based formula). This type of evidence based funding formula is essential in potential scenarios with increased private and/or not-for-profit facility operators; and
- The DHSS had previously put forward proposals (which included benefits and impacts – that encompass, IT and IM systems; training and education; clinical capacity, and workload) to implement InterRAI.

Recommendation 5: Approve the Optimal Bed Ratios for Demand Projections for FY 2016-17 to 2026-27 and FY 2027-28 to 2033-34

Based on the preponderance of evidence (i.e., demographic, health status, utilization patterns and rates, LTC facility administrative data [e.g., residents' socio-demographic characteristics and mortality rates] best practices from other jurisdictions, and the bed inventory for FY 2016-17), the following optimal bed ratios are recommended in two phases.

Phase 1: Bed Ratio of 115 per 1,000 Population 70+ Years for FY 2016-17 to 2026-27:

The DHSS approve and implement a bed ratio of 115 per 1,000 population 70+ years, using a 95% bed occupancy scenario in FY 2016-17 to 2026-27 for completing demand projections and for operationalizing the NWT LTC Model.

Rationale

- The recommended ratio is consistent with the vision of the Continuing Care Framework, and supports the DHSS strategic objective to optimally align and invest program resources (i.e., capital and operating costs) into LTC facilities only when and where needed based on valid evidence; and
- From a more technical perspective, the rationale for the ratio is based on the analysis and results from the initial demographically based demand projection that reflects the following: (i) births, deaths and migration patterns, including in the net out-migration of the seniors' cohort; (ii) actual utilization patterns across the DHSS system and regional facilities, specifically the trend of increasing age at admission and shorter LOS post the TAC admission process; (iii) TAC Wait List; (iv) actual resident 'flow' through the facilities due to mortality rates and patterns; (v) potentially accommodates the bed demand from the existing and emerging health status drivers (e.g., dementia and FASD); and, (vi) directly reflects the fact that the potential demographically driven demand from the 70+ years cohort will peak post 2020 and continue a slow relative decline through to 2026. This slow decline will continue through to 2032, where a slightly accelerated decline will be experienced through to 2034, the limit of the population projection model. The 70+ years cohort population trend can be characterized as '*increasing at a decreasing rate*'.

Phase 2: Bed Ratio of 105 per 1,000 Population 70+ Years for FY 2027-28 to 2033-34:

The DHSS, in collaboration with the NWT Bureau of Statistics, should review and validate the population projections post the 2026 census. Assuming that: (i) the current projections and modeling assumptions presented in this review remain reasonably valid (i.e., specifically, the peaking of the growth in the 70+ years cohort and migration patterns), and (ii) re-assessing the demographic and non-demographic drivers impact on demand and supply in order to validate the projected trends, the bed ratio should be reduced accordingly to 105 per 1,000 population aged 70+ years, using a 95% bed occupancy scenario.

In the event that there is substantive change in demand and supply trends, (e.g., should the DHSS invest additional resources in other areas of Continuing Care Services) which may reduce demand for facility based care, the 105 beds ratio could potentially be further reduced to reflect and accommodate the new demand and/or supply trend trajectories. This decision will need to be made in light of the data available leading up to and post FY 2026-27.

Rationale

- The demographically driven demand for the 70+ years cohort is projected to peak post 2020 and continue a slow relative decline from approximately 2026. This slow decline will continue through to 2032, where a slightly accelerated decline will be experienced through to 2034; and
- Assuming that the demographic and bed demand modeling assumptions remain valid, the reduction of the ratio to 105 per 1,000 population aged 70+ years is expected to maintain a reasonable balance between demand and supply, and mitigate the risk of investing in potential over-capacity in LTC facilities.

Recommendation 6: Funding for Program Operations – Short Term (6 to 12 Months)

In the short term (6 to 12 months,) the DHSS should pursue Funding Option 2 – providing operating funding through contribution agreements negotiated with private owners/operators using a line-by-line approach.

Rationale

- Privately owned and operate facilities achieve lower operating costs on a per bed basis than government owned and operated facilities due to lower compensation costs, more flexible procurement options, and a strong motivation for efficiency and surplus or profit. As a result, private ownership and operation of LTC facilities to meet projected new demand should be pursued where practical;
- If private ownership and operation of LTC facilities is to be pursued, the approach that maximizes the potential and benefits of private sector capabilities is a funding model using a per diem standard cost based formula. Such a formula approach allows the government to design the formula around a high efficiency operational model and provide maximum risk/reward motivation to private operators to achieve efficiencies. Quality of service and resident safety can be assured by regulated standards, facility licensing and a robust inspection program. Such a cost based formula funding approach will take time to more fully research, develop and implement; and
- Until a standard cost based formula is available, many of the cost benefits of private ownership and operations can be achieved by greater utilization of existing private operators (e.g. AVENS). It may also be possible to attract and incent new private owners/operators under the negotiated contribution agreement approach.

Recommendation 7: Funding for Program Operations – Longer Term (12 to 24 Months)

In the longer term (12 to 24 months), the DHSS should pursue Funding Option 3 – providing operating funding through a published cost based formula (with some adjustment for regional cost differentials). This formula could be a distribution formula or a needs based formula. Additionally, consideration should be given in the future (i.e., beyond 24 months) to having elements of the formula responsive to client acuity levels recognizing that this would require the introduction of an assessment tool such as the proposed interRAI and the associated clinical capacity in the LTC system to undertake regular client assessments, as well as an information system (i.e., information technology and information management systems) capable of capturing, processing and integrating the assessment data into program management decisions.

The DHSS should also undertake research and evaluate the potential to convert existing GNWT owned and operated LTC facilities to a more private sector business model recognizing that privatization (which can include a P3 type partnership model) initiatives come with considerable political and labour relations challenges, as well as the need to ensure facility residents and their families of service continuity, safety and quality.

Rationale

- If private ownership and operation of LTC facilities is to be pursued, the approach that maximizes the potential and benefits of private sector capabilities is a funding model using a per

diem standard cost based formula. Such a formula approach allows the government to design the formula around a high efficiency operational model and provide maximum risk/reward motivation and incentive to private operators to achieve efficiencies. Quality of service can be achieved by regulated standards, facility licensing and a robust inspection program. Such a cost based formula funding approach will take time to research, develop, test and implement;

- A standard cost based formula will not be fully equitable nor provide adequate funding if it does not adjust for relative client acuity levels in each LTC facility. Operating costs go up as acuity increases and so should funding. Both Alberta and Ontario have developed funding formulas that adjust variable costs for average patient acuity based on a Case Mix Index (CMI) which is grounded by regular (e.g., every 90 days) interRAI based client assessments. Incorporating CMI based adjustments into funding ensures that individual LTC facility funding tracks average client acuity;
- The adoption and implementation of an interRAI assessment tool has many client care benefits beyond facility funding models but it will take time and resources to acquire the tool, build capacity within the system to apply it, and develop the systems necessary to capture, process and integrate the assessment data in decision processes. For this reason it is seen as a longer-term system improvement; and
- For a formula based funding model to yield maximum benefits it should be applied throughout the LTC system, including to facilities owned and operated by government. However, it would be unrealistic to expect government run facilities to achieve the same cost efficiencies as private facilities due to their higher compensation costs, higher procurement costs and longer design/construction period, and, more involved (i.e., protocol based) decision processes. For this reason, it is useful to determine the challenges that would be encountered in converting government facilities to a more private sector business model.

Recommendation 8: Funding for Facility Construction – Short Term (3 to 12 Months)

In the near short term (3 to 6 months), the DHSS should undertake research into LTC facility design standards used by Alberta, Ontario and Nova Scotia, and develop GNWT LTC design standards reflecting best practices from these jurisdictions. Avoid independently developing LTC design standards that may exceed the design standards used in other jurisdictions (e.g., avoid the tendency to design to the highest standard but ensure resident safety and service quality). Require all private LTC facility owners/operators to adhere to the NWT design standards for all new construction.

In the short term (6 to 12 months), the DHSS should pursue Option 2 – providing for new bed construction through an allowance for mortgage costs in the annual operations contribution agreement with private owners/operators. For existing private operators this has the potential to enable commencement of new bed construction in some locations in less time than a regular project following the standard government capital planning and approval process. Where new private operators need to be attracted, a design/build/finance/operate RFP process should be followed combining both construction and operational components (Alberta does this with its ASLI program and further discussions should be held with Alberta on how they structure the proposal call and subsequent negotiations). Additionally, the recent RFP process used in Newfoundland and Labrador for LTC facility construction provides another reference point.

Rationale

- If greater private sector (i.e., for profit and not-for-profit) ownership of LTC facilities is to be pursued, the government must still maintain reasonable control of the quality of service provided and ensuring resident safety. From a construction standpoint this means establishing and controlling the design standards of facilities. To control design standards the government must have clear publicly available standards and a demonstrated capacity to ensure adherence to by private sector owners. However, per bed construction costs are very sensitive to design standards. The government must have standards that achieve program delivery standards but also reflect an appropriate cost benefit balance. Other jurisdictions have been utilizing private owner/operator delivery models for some time and have developed design standards that, in principle, achieve the required balance. GNWT needs to build on this experience and ensure that although best practices are adhered to, that GNWT design standards do not exceed the norm. The GNWT cannot afford excessive design standards;
- A standard cost based formula for operations is the model most likely to generate optimal efficiency and lowest cost for the LTC program. When coupled with an effective licensing, standards and inspection system cost savings can be achieved without sacrificing quality of service or resident safety. This same rationale applies to LTC facility/bed construction costs. Adjusting the per bed per diem under the formula to encompass construction costs allows the government to establish the construction cost per diem on the basis of high efficiency construction practices. This then motivates and incents the private owner to achieve these efficiencies while still adhering to the government's facility design standards. Developing a formula based construction per diem will take time to research, design and test. In the interim, new bed construction must still commence; and
- Prior to a standard cost based per diem being available, new beds still need to be built. Many of the cost advantages of private construction and ownership can still be realized by working with existing and potential private owners/operators to build new bed capacity to meet projected demand. To implement this approach, the government would need to negotiate with private providers the number of new beds, the bed mix, the bed location and what represents a reasonable construction budget. The government would then negotiate the flow of financing for construction costs as an element of the annual operations contribution agreement negotiations. This funding flow could be based on the mortgage costs the private owner/operator incurred relative to the new construction or the amortization of the facility over its useful life. The government secures the cost savings associated with private construction, maintains control over design standards and spreads the cost of construction out over the mortgage term or the useful life of the facility. As long as opportunity costs are higher than interest rates on a Net Present Value basis this approach carries no significant increase in long term costs.

Recommendation 9: Funding for Facility Construction – Long Term (12 to 24 Months)

In the longer term (12 to 24 months), pursue Option 4 – providing for new bed construction through a construction per diem as an element of the standard cost formula used for operational funding (i.e., Ontario). This would still involve an RFP for the new beds but on a design/build/finance/operate basis.

Rationale

- A standard cost based formula for operations is the model most likely to generate optimal efficiency and lowest cost for the LTC Program. When coupled with an effective licensing, standards and inspection system cost savings can be achieved without sacrificing quality of service. This same rationale applies to LTC facility/bed construction costs. Adjusting the per bed

per diem under the formula to encompass construction costs allows the government to establish the construction per diem on the basis of high efficiency construction practices. This then motivates and incents the private facility owner to achieve these efficiencies while still adhering to the government's facility design standards. Developing a formula based construction per diem will take time to research, design and test.

Recommendation 10: LTC Facility Revenue and Subsidies

In the short term (6 to 12 months), the DHSS should undertake research and develop financial information from all NWT LTC facilities on all standard (fully burdened) elements of LTC accommodation costs (e.g., building operation and maintenance, janitorial, laundry and house-keeping, and, food and meal preparation and serving). Develop a system to keep this cost data current. Calculate an average NWT-wide per diem accommodation fee required to fully recover the cost of accommodation and meals. Consider whether this indicated per diem accommodation fee should be adjusted (i.e., downward) for any system inefficiencies, low economies of scale or high regional operating costs. In other words, the accommodation fee should be reasonable in comparison to the higher tier of provincial accommodation fees (Nova Scotia). Develop an implementation plan to institute the new accommodation fee.

In concert with the preceding recommendation, undertake research and develop an income tested accommodation fee subsidy program to address the impact of the higher accommodation fee on lower income residents of NWT LTC facilities. Research and assess subsidy designs in other jurisdictions to reduce subsidy program design time.

Rationale

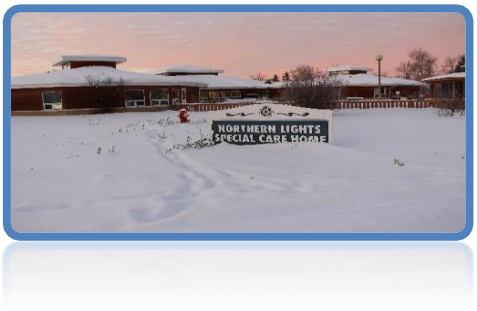
- The government cannot afford to meet projected LTC bed demand using existing delivery and funding models that are highly dependent on government owning and operating facilities;
- The current accommodation fee for NWT facilities is the lowest in Canada, except for Nunavut that charges no fee. The NWT accommodation fee is not based on the actual cost of accommodation. All of the provincial jurisdictions surveyed charge an accommodation fee and base it (at least theoretically) on the actual cost of accommodation;
- The NWT needs to reduce the cost of LTC operations and this can be partially achieved by requiring residents who can afford to pay more of the costs of accommodation to do so;
- To be able to introduce a cost based accommodation fee it is first necessary to establish what those costs are and have a mechanism for tracking and updating costs regularly (e.g. annually). Once actual costs are established, a decision can be made as to whether full recovery of those costs is reasonable and whether the accommodation fee should be consistent across all LTC facilities; and
- With the expectation that a cost based accommodation fee would raise the fee significantly, then the government will also need a mechanism to determine each resident's 'ability to pay' so that lower income residents are not disproportionately burdened. This will require the introduction of income testing and an income tested subsidy for low-income residents. Every provincial jurisdiction surveyed had such a subsidy program and, with the exception of Newfoundland and Labrador that used a means tested subsidy, they utilized an income test model.

Recommendation 11: LTC Facility Licensing, Standards and Inspections

In the short term (6 to 12 months), the DHSS should undertake research and develop legislative and regulatory options for introducing LTC facility licensing, standards setting and inspection by the DHSS with the goal of introducing required legislation within 24 months. Research the legislative and regulatory regimes in other jurisdictions and adopt (with appropriate amendments) approaches and provisions to the extent practical to reduce drafting time.

Rationale

- If greater reliance is to be placed on private owners/operators to meet LTC bed demand the government needs efficient and effective means to ensure that quality of service and resident safety is maintained. This requires a system for licensing private providers, it requires clear standards of service that operators must adhere to, and it requires that the government have a robust capacity to inspect LTC facilities on a regular basis and follow-up aggressively on inspection findings. The time frame is short to develop this system management regime if new bed demand is to be met by private sector providers.



Northwest Territories Long-Term Care Program Review

Appendices

Submitted to:

Continuing Care and Health System Planning
Territorial Health Services
Department of Health and Social Services
Government of the Northwest Territories

December 2015

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Appendix A: Long-Term Care Program Evolution and Chronology

NWT LONG-TERM CARE PROGRAM EVOLUTION AND CHRONOLOGY

Purpose of the Chronology

The DHSS has completed a number of key activities related to NWT Continuing Care Standards (the standards) which build on, and extend, the foundational work of the 2004 (and the 2008 update), of the Department's Integrated Service Delivery Model (ISDM) which renewed the commitment and foundation for continuing care across the NWT to meet the needs of all citizens, communities and regions in affair an sustainable manner. The key initiatives and reports since 2002 are highlighted in Figure 2.4 in Section 2.3. A detailed history and chronology is contained in Appendix A.

The purpose of the more detailed chronology is to provide a broader and historical context for this review through documenting the key events, investment and decisions that were taken to develop and manage the LTC program over the last 40 years. This includes consideration of the demand and supply side aspects - demographics, fiscal resources, the DHSS strategic direction and policies, actual utilization patterns and trends, societal values and expectations regarding LTC in the NWT. Additionally, the chronology reflects the previous needs assessment and analysis by the DHSS and the HSSAs, as well as independent reviews.

Structure of the Chronology

The chronology begins with Part A - a consolidated summary of the territorial LTC facilities, i.e. location, period of investment and current status. This is followed by an overview in Part B of the three independent living facilities that are assets of the NWTHC that have a history of use by the DHSS. The final section, Part C, details the historical initiatives and factors informing analysis and planning for the LTC program.

Part A: LTC Facilities: Location, Period and 2015 Status

Facility	Built	Age	Current State
Joe Greenland Centre, Aklavik	1979	36	Closed 2011
HH Williams LTCU, Hay River	1974	41	Pending closure 2015-16
Jimmy Erasmus Seniors Centre, Behchoko	1986	29	Replacement under construction – 9 beds completed 2014-15; (new 9 bed pod scheduled for 2016)
Aven Manor, Yellowknife	1987	28	Operating 29 beds
Stanton ECU, Yellowknife	1988	27	Operating 10 beds
Woodland Manor, Hay River	1989	26	Operating 15 beds (10 bed addition scheduled 2015-16)
Fort Smith Health Centre LTC Unit	1979	31	7 bed unit closed 2010
Northern Lights Special Care Home, Fort Smith	1992	23	Operating 28 beds since 7 bed pod was completed in 2010-11
Fort Simpson LTC	2000	15	Operating 18 beds
Inuvik LTC	2003	12	Operating 25 beds
Aven Cottages, Territorial	2009	6	Operating 28 beds Opened March 2010

Facility	Built	Age	Current State
Dementia Facility			
New Norman Wells LTC Facility	Under construction	-	18 bed facility approved 2010 as part of 2011-12 GNWT Capital Estimates to be ready for occupancy 2016

May 13, 2015, Source: Historical Briefing Note on file within the DHSS

Part B: Independent Living Seniors Housing

The NWTHC owns a number of facilities across the NWT that are used by the HSSAs to deliver programs, services and/or provide office space for staff. In the past, in some instances, no formal lease or memorandum agreements existed for the use of the facilities (source: historical briefing notes on file within the DHSS).

1. **Joe Greenland Centre (JGC) in Aklavik**

   April 2011, Joe Greenland Centre (JGC) in Aklavik closed operations and TAC removed the 8 beds from the LTC roster. JGC was built in 1977, and was originally designated to provide programming for Level 1-2 care clients, when more than thirty years ago it was customary to admit seniors into care with low level needs. Today, this population is able to receive care in their own home with home support workers providing services as required.

   The JGC building was also past its life expectancy and there were many deficits with the building that put the residents and staff at risk. The NWTHC was unable to renovate the building for independent living because the building was in poor repair and did not warrant the investment needed to extend it another life cycle (twenty years). They also concluded that to meet program requirements for Level 3 and 4 LTC would compound the cost significantly. In short, the building was at the end of its expected life cycle (forty years) and had existing liabilities. NWTHC is presently constructing a replacement Seniors Independent Living complex that will be completed in FY 2015-16.

   Following closure of JGC, the BDHSSA maintained 50% of the $779,000, or $350,000, of former JGC funding for provision of home care and supportive living services in the community of Aklavik. Until its closure in 2011, the BDHSSA had been spending approximately $1.2 million dollars per year to operate the JGC, which had on average 3 residents.

2. **Our Great Elders Facility (OGE) – Fort Resolution**

   Between 2002 and April 1, 2011, YHSSA occupied the Our Great Elders (OGE) facility in Fort Resolution without a lease. YHSSA did not pay any costs to the NWTHC who is the owner of the facility during this time. The Deninu Ku'e have previously raised concerns that the OGE was not being run as a LTC facility, which the Deninu Ku'e perceived it to be when it was run by the Deninu Ku'e Community Health and Social Services Board prior to 2002. In 2006, the YHSSA took over provision of health and social services and determined it was not feasible to operate it as a four bed LTC facility. The decision to re-profile the OGE facility was by the Minister of Health and Social Services that same year. As of 2006, the resident moved out of OGE and YHSSA has focused on its Home Support and Elders Day programming since.

Effective August 31, 2011 YHSSA terminated its lease with Deninu Ku'e First Nation and vacated office space it had been using in the Deninu Ku'e Office Complex to consolidate administration, social programs and Home Support staff in the OGE facility.

3. Deline Wellness Centre

The Deline Seniors Facility was constructed by the NWTHC in 1991. A review of the Deline Elders Residence by A.D. Williams Engineering was completed in May 2006. The review was intended to determine the requirements for conversion of the building into a Wellness Centre with two separate uses – "Social Health" office area and a "Homecare" senior's day home area. The original building design drawings dated December 1991 were reviewed along with the maintenance and program information provided in the Request for Proposal from the NWTHC. Following the review the NWTHC arranged by tender to have the facility renovated to address issues with code violations and to prepare the building for occupancy by the fall of 2007 for office space and elders day programming.

In February 2013, MLA Sahtu, Norman Yakeleya wrote the Minister of Health and Social Services asking for an evaluation of the Wellness Centre to include 2 dedicated LTC beds for elders so they can return to the community to spend their last days in Deline. The Minister responded that the DHSS is working with the HSSAs to review current approaches in palliative care delivery so that communities will be able to improve community-based palliative care. The Community Wellness building would not be suitable to provide the type of care the member has described.

In February 2015, MLA Sahtu, Norman Yakeleya raised the issue of Deline in Hansard, saying the Minister talked about the plans for palliative care beds in Deline. He asked if the planning study was expected to be completed by the end of the Assembly. The Minister responded that the DHSS was planning to have individuals go into the community of Deline in FY 2015-16 to do the needs analysis and identify what kind of needs exist in the community. The information is expected to be ready to share with Standing Committee on Social Programs in FY 2015-16.

Part C: Historical Initiatives and Planning for the LTC Program.

The following details the historical initiatives (referenced to specific fiscal years) and factors informing analysis and planning for the LTC program.

2001-2002

KPMG Report: LTC Needs Assessment

In 2002, the DHSS contracted KPMG Consulting to review current LTC services and provide projections on future LTC bed needs within the NWT.

KPMG provided a projection model that indicated the need for the development of alternative housing options, community support services, and restrictive admission policies, which would substantially reduce the projected LTC bed needs. They qualified their projections for LTC as dependent upon the enhancement of community supports, such as homecare services and supportive living options for clients within the communities. At the time, there were 153 LTC beds in the NWT. KPMG concluded based on their model projections that by 2020, there will be a need for an additional 85 LTC beds across the NWT, bringing the total to 220 LTC beds. They also stated that Yellowknife would require a minimum of 72 of the 85 beds by 2020 unless there were enhancements in community support and home care

services (column 4). This would require construction of approximately 3 new LTC facilities and/or additions to current facilities in order to provide adequate services across the NWT.

The following priorities were identified for additional LTC beds. See also the following summary table from the report.

Additional Beds Needed: Yellowknife, Sahtu and Tlicho Regions
By 2012, these combined areas will require 21 additional beds. Taking into consideration the time it takes to plan and build a facility, this should be a priority for Yellowknife and the surrounding communities.

Additional Beds Needed Across the NWT by 2020
An additional 85 (Model A) to 158 (Model B) beds will be needed by 2020 across the NWT. The regional needs are:

- Hay River will require 2 to 10 beds;
- Beaufort Delta will require between 11 and 26 beds;
- Yellowknife, Sahtu and Tlicho will require 72 to 122 additional beds.

KPMG Report Projections for LTC Beds

Region	2006	2020			
	Current LTC Beds	*Total Beds Required for LTC*	*Total Beds: Required if Community Support/Home Care are not Enhanced*	Additional LTC Beds Required	*Additional Beds Required: If Community Support/Home Care Services are not Enhanced*
Dehcho (Area 4)	20	14	19	--	--
Hay River (Area 5)	23	25	33	2	10
Beaufort Delta (Area 1/2)	33	44	59	11	26
Fort Smith (Area 6)	28	16	21	--	--
Yellowknife (Area 3/7/8)*	49	121	163	72	122
Total	**153**	**220**	**295**	**85****	**158**

LTC beds/facilities are allocated regionally, to ensure optimal aging-in-place as much as possible in a geographically dense and population-sparse area.
**Yellowknife area also includes the Sahtu and Tlicho regions.*
***A 24-bed dementia facility was also recommended within the report and a contribution for the design and development phase was awarded to the Yellowknife Association of Concerned Citizens for Seniors in 2006-07.*
-- indicates that future beds are not needed for these regions.

2004-2006

Integrated Service Delivery Model (ISDM)

The DHSS and the HSSAs undertook the development of an Integrated Service Delivery Model (ISDM) in 2004. The results of the initiative were presented in the *ISDM-Reforming Facility & Medical Services in The NWT: A New Direction* (June 2005). The report provided a detailed view of the NWT's health delivery system and offered alternative models of care that can efficiently and effectively meet current and future needs. The report proposed a new health centre classification system and established institutional care benchmarks and planning guidelines – including those for LTC.

The report established a "*more appropriate and reasonable population cohort*" as 70+ years of age (in contrast to the Canadian guideline of beds per 1,000 for a population cohort of 75+ years). Additionally, the bed ratio of *110 per 1,000* (75+) previously adopted from Manitoba was amended to *120 per 1,000* (70+ years) to more accurately reflect the demographic, health status (i.e., higher incidence of chronic diseases) and programming needs in the NWT. This included provision for 3 beds per 1,000 for dementia care (as a sub-set of the 120 per 1,000 ratio). The report also recommended adopting a single point of entry process for admitting residents to LTC facilities.

2008-2009

Ministerial Directive

There was a Ministerial Directive to improve the coordination and use of LTC beds including revising the model in place for admission to LTC facilities. The DHSS established a Working Group with diverse representation.

NWT Continuing Care Framework

FY 2008-09 saw the development and implementation of the NWT Continuing Care Framework.

2009-2010

Territorial Admissions Committee (TAC)

The DHSS established a TAC in response to a Ministerial Directive (March 2008) that the DHSS improve the coordination and use of LTC beds in the NWT, in part, by revising the model in place for admission to LTC facilities. The DHSS established a Working Group with representation of all of the HSSAs to do the work of developing a streamline application process to support a single point of entry for admission to LTC in the NWT. In March 2009, the Deputy Minister approved the TAC LTC Application for Admission Policy and terms of reference to establish a TAC. Additionally, the TAC replaced six regional LTC admissions committees and streamlined the application process. Prior to the TAC there was no territorial Wait List for LTC. In October 2009, the TAC began operations.

PSAV LTC Planning Study

In July 2009, PW&S engaged PSAV Architects to undertake a planning study for LTC facilities in NWT. The DHSS Finance Capital Planning and Health Systems Planning staff participated in the Working Group. The purpose of the planning study was to:

1. Complete a detailed needs analysis of existing LTC facilities and program needs;
2. Develop Operational, Functional Plans and a Schematic Design that can be reused for future infrastructure and operational development;
3. Identify development priorities for LTC.

PSAV Report: NWT LTC Facility Bed Capacity			
Region	**Community**	**Facility**	**No. of Beds**
1	Inuvik	Inuvik Regional Hospital	25
	Aklavik	Joe Greenland Seniors Home	8
3	Fort Simpson	Fort Simpson LTC Facility	21
4	Behchoko	Jimmy Erasmus Seniors Home	8
5/6	Yellowknife	Aven Manor	29
7	Hay River	H.H. Williams Memorial Hospital LTC Unit	10
		Woodland Manor LTC	15
8	Fort Smith	Fort Smith Health Centre LTC Unit	7
		Northern Lights Special Care Home	21
	Total		**144**

PSAV completed an analysis of need for LTC beds to existing capacity including projected opening and closing of LTC beds, respite and palliative care beds to identify the new or replacement beds required. They followed recommendations 6-2 and 6-3 of the 2005 ISDM Reforming Facilities and Services Report that the NWT adopt a 70+ years age cohort for determining LTC bed needs and that the ratio used in calculating LTC needs is 120 beds per 1,000 target population 70+ years. Their methodology included:

- Development of detailed population projections by community and region for population age 70+ years based on 2006 census and for every 5 years to 2026;
- Analysis of current bed utilization and application of the bed guideline of 115 beds per 1,000 aged 70+ years to the population projections to 2026;
- Adoption of best practice model for LTC, including dementia care, using small household configuration to be built in pairs to share support space and staff;
- Through a detailed bed demand analysis the study identified the distribution of LTC beds is not aligned with population across NWT; and that residents of some regions need to travel great distances to access LTC beds;
- They also found overall for the NWT, LTC beds were occupied close to 95%, with few vacancies during the year;
- They also identified that it is possible that some individuals who would otherwise seek placement have not applied either because they would have to go too far away from their family and community or because they perceive there are no beds available so there is no point in applying. Therefore, once beds become more available there could be increased demand;

- Finally, the Planning Study demographic analysis determined a projected demand for LTC beds by 2026 to be 162 beds at 95% occupancy (Table 3.1) with a recommendation to build two new LTC facilities and for the DHSS to review the needs for additional LTC beds within 5 years (see the table below). The demand numbers excluded respite/palliative care beds and extended care beds.

PSAV Report: Projected Number of LTC Beds (Levels 3 and 4) by Region				
Region		**2006 Census (70+ Years)**	**Projected Population 2026 (70+ Years)**	**Beds Required at 95% Occupancy by 2026**
1	Beaufort Delta	250	262	29
2	Sahtu	95	118	13
3	Dehcho	150	181	21
4	Tlicho	95	116	12
5/6	Yellowknife	305	430	47
7	Hay River	201	240	26
8	Fort Smith	149	125	14
	Total	**1,245**	**1,472**	**162**

The following is a summary of some of the key characteristics of the residents of NWT LTC facilities as of November 2009. It is important to note that the single entry system with the TAC was just being implemented at that time and in the past there was no standardized classification system. Therefore, some of the data is subjective.

- Although the NWT admission criteria are that a person must be 60 years of age or older, the average age of admission is much older. For all admissions between 2005 and 2009, the average age at admission was 76.5 years;
- 47% of residents have some level of cognitive impairment;
- 72% of residents were classified as Level 3-5; the remainder being Level 1 and 2;
- Most LTC facilities accommodated residents only from their local region. The exceptions were as follows:
  - Fort Simpson had 1 resident from Nunavut;
  - Aven Manor in Yellowknife had 1 resident from Sahtu (Deline);
  - Fort Smith had 5 residents from Nunavut and 1 from Alberta; and
  - Hay River had 1 resident from Sahtu (Deline).

2010-2011

Aven Cottages, Territorial Dementia Facility (TDF)

In March 2010, Aven Cottages, Territorial Dementia Facility (TDF) with 24 full time beds and 4 respite beds began operations. Aven Cottages TDF is the only specialized dementia facility in the NWT designed specifically to care for residents with moderate to severe dementia, Alzheimer's disease and other age related dementias. TDF provides dementia care for 28 residents, with a staffing level of 3.7 hours of direct care per resident per day. All LTC facilities and even home care in many regions are caring for clients with varying levels of dementia. Population growth in people 60+ years across the NWT from FY 2001-12 is 82.5%. With this growth has come an increasing incidence of all dementias. The PSAV Planning Study (2010) found that some 47% of LTC residents had some level of cognitive impairment. When a resident's needs exceed the capacity of LTC the facility applies to the TAC for transfer of the resident.

2011-2012

Auditor General of Canada Report 2011: NWT Health Programs and Services

The Auditor General completed an audit of NWT Health Programs and Services in 2011. The audit included a review of certain aspects of LTC as of September 30, 2010. Among the key findings were:

- The DHSS does not adequately support and monitor diabetes programming, home care and *LTC programs*, and medical travel. The DHSS has insufficient information to determine whether health outcomes of patients with diabetes are improving. *Current standards for home care and LTC programs are too broad to serve as a basis for monitoring and to ensure equitable access to the programs*.

More specifically, the audit concluded the following:

- *Processes for assessing home and LTC clients are not yet standardized and monitoring delivery of care is limited.*

The Auditors made the following specific observations (the numbers link to the report paragraph numbering).

40. Within the Department, home and community care and long-term care are part of a continuum of services, generally referred to as the standards. These standards, based on client need, are intended to maintain or improve the physical, social, and psychological health of individuals who, for a variety of reasons, may not be able to fully care for themselves. The goal of the standards are to improve independence and quality of life for these individuals and their families.

41. The Home and Community Care Program provides a broad range of services to individuals. These include, for example, respite care, palliative care, foot care, medications management, home management, meals on wheels, and transportation assistance. Services are provided by physicians, nurses, and other health professionals. Departmental statistics show that in 2009-10, about 1,800 clients received home care services through the Home and Community Care Program. Funding for the program comes from the Department and the federal government. In 2008-09, the Department spent about $9.1 million on home care, which included $3.8 million from the federal government.

42. Long-term care provides the opportunity for clients to live fulltime in a facility that provides a level of service greater than what can be provided by the Home and Community Care Program. Long-term care facilities provide services for individuals whose needs cannot be safely met in a home setting. These individuals may have chronic and/or complex care needs, including multiple and severe disabilities or health issues resulting in reduced function. Department documentation indicates there are 136 long-term beds across the Northwest Territories, with an occupancy rate of close to 95 percent. Program expenditures amounted to about $13 million in the 2008-09 fiscal year.

43. Program support. To determine whether a patient is eligible for home care services or long-term care, the Authorities currently assess an applicant's service and care needs. However, department documents indicate that the current assessment process does not adequately address specific client groups, such as persons with disabilities; allow for categorization of clients into distinct levels of care, which would be of significant benefit for program planning, delivery, and administration; or facilitate access to information needed by care providers, as well as by management and governing bodies.

44. In 2009, the Department made a commitment to ensure that clients who need continuing care enter into care through a coordinated referral and assessment process. This was intended to provide consistent and high-quality care to clients across the Northwest Territories. We found that the Department is working on acquiring a standardized and automated instrument for assessing care needed, planning care, and managing the care of clients within home care and long-term care. The Department expects that the instrument will improve patient safety and quality of care and reduce costs.

45. The Department also made a commitment to establish a territorial admission committee to develop and manage access to long-term care and to standardize models of care, direct care hours, and staffing so that they are consistent across the territory. The Department has taken action in this area. Clients seeking placement in long-term care facilities must now apply to the newly created Territorial Admissions Committee. This committee, which began accepting applications in October 2009, replaced six regional long-term care admission committees, thereby streamlining the admission process with one coordinated and prioritized placement list. The committee determines the placement of patients after a review of their application. Once clients have been admitted to long-term care, services are provided by the Authorities or by non-governmental organizations contracted by the Authorities. The Department has developed a management model, which includes an operational plan, functional programming, design standards, and prototype design, and is intended to provide the basis for developing appropriate long-term facilities.

46. Monitoring of program delivery. The Department adopted program standards for home care and long-term care in 2000. However, it does not monitor the Authorities' compliance with these standards, as it considers them to be too broad to be useful for monitoring purposes. We found that while the Authorities applied some common standards and policies (for example, all Authorities prepare individualized care plans for each client), they also applied others that varied across Authorities (for example, a physician referral is required for access to home services in only some Authorities). We noted that services provided varied in the three Authorities we visited, depending on the community and the availability of qualified staff to provide the service. The Department has been working with the Authorities to update standards and expects the revised standards to provide a basis for monitoring and evaluating services.

47. The Department carries out limited monitoring of the Authorities' home care activities. For example, it receives data from the Authorities on staff hours spent on each home care activity. With this information, the Department can observe variances in intensity of work performed by each Authority and ask for an explanation of these variances. However, the Department has difficulty assessing and comparing the performance of home care in each Authority because the Authorities have not defined service limits (for example, number of hours per day or per week per client for a given service such as meal preparation).

48. Non-standardized assessments and care management for home care and long-term care clients may result in inequitable access to services and inconsistent quality in the services delivered. As well, the lack of monitoring (against program standards) may result in the quality of services being inconsistent or below standard.

49. *Recommendation*. The Department of Health and Social Services, in consultation with Health and Social Services Authorities, should undertake the following:
    - Implement a standardized process for assessing the service and care needs of all home care and long-term care clients;
    - Complete the revision of program standards for home care and long-term care programs; and
    - Develop and implement a plan to monitor these programs, including specifying the data to be collected by the Authorities and reported to the Department.

The DHSS Response: The DHSS agreed with the findings and recommendations. Standardization of the delivery of the standards across the NWT is currently identified as a key action contained in *A Foundation for Change*, the DHSS system action plan for FY 2009-12. Program and staffing standards are to be updated in FY 2011-12 for inclusion in the FY 2012-13 business planning process.

AVENS - A Community for Seniors In-Facility Respite Services

In FY 2011-12, AVENS – A Community for Seniors began offering in-facility respite service with 4 beds at the Aven Cottages TDF. In FY 2014-15, the DHSS approved AVENS' request to operate 3 respite beds at Aven Cottages TDF; and 1 respite bed in the Aven LTC facility. AVENS Elders Circle (adult day program) began operation in January 2011. Hours of service are Monday to Friday from 8:15 am to 5:30 pm. The AVENS Elders Circle offers daytime respite and support for seniors in a secure, homelike environment. The program offers an alternate form of care for seniors who wish to continue living independently in the community while providing support to family caregivers. The cost is $10.00/day.

Northern Lights Special Care Home (NLSCH) in Fort Smith Renovation Project

Planning for expansion of the NLSCH Home in Fort Smith began in FY 2007-08 with signing of the project brief for a 7 bed pod on June 11, 2007, approving an increase in beds from 21 to 28. The additional 7 beds for NLSCH were not to increase the total number of LTC beds for Fort Smith; but to replace 7 LTC beds, which were scheduled to be closed in the Fort Smith Health Centre. The scope of construction and renovations to NLSCH included: expansion of the kitchen within NLSCH to provide meals for the health centre; renovations to the tub room; and, renovations to the 2 existing pods.

At the time of construction, the recommendation was to add a "dementia" pod to segregate dementia residents from the rest of the population. This has not been feasible or cost effective in such a small facility due to high staffing costs and the fact that with aging-in-place all residents will have some level

of dementia. The current practice approach in LTC is flexibility and adaptability to meet changing needs of residents. LTC facilities are designed for residents who are cognitively intact and cognitively impaired as well as residents with most levels of physical challenges. Dementia residents are not segregated from the non-dementia population. As residents age in place, the number of residents with some level of dementia will also increase. This will make it difficult, if not impossible, to separate mild to moderate dementia and non-dementia residents. It is more feasible to secure all external exit doors in a facility for the safety of all residents. Moreover, the new pod was not configured to the standard required to house patients with severe dementia.

The DHSS prepared a proposal for funding in the FY 2010-11 Business Plan under "new or incremental investment" for increased costs associated with operation and maintenance of the NLSCH in Fort Smith. Completion of renovations was delayed until the end of FY 2011-12.

2012-2013

NWT Continuing Care Standards Review

The DHSS identified a need to be ready to respond to the growing demand for the standards and following a request for proposal in April 2013, contracted the successful proponent MNP_{LLP} (MNP) to review the delivery of the standards across the NWT.

The overall objective of the project was to review the standards and provide evidence to support the development of an updated continuing care strategy that will ensure services meet the needs of Elders and individuals with disabilities who require support to achieve their desired quality of life. The review is intended to provide a description of the current state of services in the NWT, including strengths and gaps in HCC, LTC, palliative care and community capacity and includes the following elements:

- Recommendations for strengthening HCC services at the community level;
- Updating the projected demand for LTC beds in the NWT based on the population projection for those aged 70+ years and projecting the need for services such as in facility respite, palliative care, geriatric assessment and consult service, and restorative care;
- Reviewing and proposing any required revisions to the DHSS current philosophical approach to treating LTC beds as a territorial resource;
- Reviewing the requirements for Extended Care beds now and into the future within the NWT.

MNP provided a total projected need of LTC beds for the NWT below. Based on a LTC bed base of 201, they projected a surplus for the territory in 2016 and projected deficits for the remainder of the projection period to 2031. By 2031, the deficit for the territory is projected to be a total of 200 LTC beds.

MNP Report: Total Projected Need for LTC Beds in the NWT					
HSSA	**2011**	**2016**	**2021**	**2026**	**2031**
Beaufort Delta	33	37	45	52	56
Dehcho	15	20	24	30	35
Fort Smith	16	17	22	26	27
Hay River	21	25	31	38	46
Sahtu	12	12	15	21	25
Tlicho	12	12	13	16	17
Yellowknife	44	64	105	154	195
NWT Total	**153**	**187**	**255**	**337**	**401**
Surplus/Gap	**13**	**14**	**-54**	**-136**	**-200**

Territorial Dementia Beds

Included in the bed base for the Yellowknife HSSA are the 28 beds at Aven Cottages TDF with 25 full time and 3 respite beds. These specialized beds are typically occupied by residents who come from communities and other LTC facilities located throughout the NWT, not just Yellowknife.

MNP projected the need for dementia care beds based on TAC assessment data. Of 175 clients assessed by the TAC from FY 2009-10 to FY 2012-13, 37 (21%) required dementia care. This ratio was applied to the total projected LTC bed requirements for the territory to determine the projected need for dementia care from 2011 to 2031. Based on the TAC assessment, the projected need for dementia beds in the NWT in 2011 was 32 resulting in a deficit of 8 beds. By the year 2031, the projected need for dementia beds will increase by 2.6 times to 84 of the 401 LTC beds projected for the territory resulting in a deficit of 60 dementia beds. This is similar to the projections made by the Alzheimer Society in their 2010 report *Rising Tide: The Impact of Dementia on Canadian Society*, which projected a 2.3 times increase in the number of Canadians with dementia by the year 2038.

MNP Report: Projected Need for Dementia Beds in the NWT			
Year	**Projected Need for Total LTC Beds in NWT (A)**	**Projected Need for Dementia Care (A * 0.21)**	**Gap**
2011	153	32	-8
2016	187	39	-15
2021	255	54	-30
2026	337	71	-47
2031	401	84	-60

Extended Care Beds

Similar to dementia beds, extended care beds are specialized and occupied by residents across the NWT. There are currently 12 beds in the ECU including 10 that are designated for extended care and 2 for respite/palliative care. Although there was no data available as to the exact medical needs of extended care patients, the Continuing Care Framework does define extended care patients as requiring Level 5 care and as persons with complex conditions requiring 24-hour nursing care, support from other health professionals and medical supervision. Using the TAC Wait List data as a proxy, shows that 4% (7 of a total of 175) of applicants assessed by the TAC required Level 5 care. This ratio was applied to the total projected LTC bed requirements for the territory to determine the projected need for extended care from 2011 to 2031. It is assumed that the total number of extended care beds will remain at 12 throughout the projection period. The projected need for extended care beds in 2011 was 6 resulting in a surplus of 6 beds. By the year 2031, the projected need for extended care beds will be 16, resulting in a deficit of 4 extended care beds.

MNP Report: Projected Need for Extended Care Beds in the NWT			
Year	**Projected Need for Total LTC Beds in NWT (A)**	**Projected Need for Extended Care (A * 0.04)**	**Gap**
2011	153	6	+6
2016	187	8	+4
2021	255	10	+2
2026	337	14	-2
2031	401	16	-4

2013-2014

Forced Growth Submission LTC Staffing

The DHSS undertook a review to analyze the staffing in LTC facilities against best practice and inter-jurisdictional research to determine the optimal staffing complement required to implement a proposed staffing model based on hours of direct patient care per day. The DHSS originally considered 3.2 hours but concluded it would not provide sufficient resources to meet the complex needs of LTC residents. The DHSS determined that 3.6 hours of direct care per resident per day provided for a more adequate quality of care and minimized potential risk management issues. The LTC staffing includes Registered Nurses (RN) and or Licensed Practical Nurses (LPN); and Resident Care Aides (RCA). An optimal staffing ratio is 20% RN/LPN and 80% RCA.

The DHSS put forward a forced growth funding submission for the FY 2013-14 Business Plan requesting approval of the proposed LTC staffing model; and additional resources for three LTC facilities operating under the recommended standard of 3.6 hours: Aven Manor, Fort Simpson and Fort Smith. Aven Manor had been operating at 2.5 hours; Fort Simpson at 2.8 hours and Fort Smith at 3.2 hours (due to staff transferring from the LTC unit in the health centre). The increase in staffing in total was $1,120,000.00 for 2 RN positions; 7 RCA positions; and 2 part time RCAs.

However, Fort Smith continued to have concerns about their approved LTC staffing complement. This was resolved in FY 2013-14; and NLSCH began to function to full capacity (28 LTC beds) April 1, 2014, with dementia residents integrated throughout the facility.

AVENS Pavilion Project Proposal
The initial AVENS Pavilion Project proposal to the DHSS (June 2013) included a proposal to expand the number of LTC beds by 60 at an estimated cost of $26.5 million. This included a request for multi-year funding which would require changes to the existing *Hospital Insurance Regulations* regarding co-payment levels. The AVENS Pavilion Project Steering Committee was established to undertake the necessary analysis (including review of the demographic bed demand projections) to inform discussion regarding the proposal.

2014-2015

LTC Strategic Framework Northwest – Our Elders: Our Communities (May 2014)
The DHSS released a LTC framework *Our Elders: Our Communities* in May 2014. The framework sets out the approach to providing LTC that is based on a commitment to *aging-in-place* by "ensuring Elders and Seniors can remain in their homes and home community".

A goal of the DHSS is to enhance the continuum of care to ensure seniors remain independent and in their own homes and their own communities for as long as possible. By providing home and community care services for seniors the demand for LTC and acute care is reduced and helps seniors maintain their quality of life. We all benefit when our Elders are able to remain active and independent members of community life.

After an extensive review of the standards in the NWT, which helped identify, needs, best practices and system gaps, the framework outlines the broad principles to guide how to design and deliver programs and services in the future. The framework document outlines seven priorities for healthy and active aging. These priorities include:

- Ensuring that we continue to deliver home and community care services that meet the needs of Elders and communities;
- Making sure that services are integrated and coordinated;
- Recognizing that we need to support caregivers;
- Working with our communities to ensure that they are responsive to the needs of their Elders and seniors;
- Providing accessible and current information to seniors and their families; and
- Continuing to explore and implement sustainable best practices.

The aging-in-place approach includes implementing strategies and new models of care aimed at keeping elders out of hospitals and LTC facilities and in their own homes is a cost-effective strategy.

NWT Continuing Care Standards (February 2015)
The DHSS implemented new standards in February 2015. The standards established operational benchmarks for program and service providers; the DHSS; HSSAs; Agencies, non-government organizations (NGO); and individual service providers. They provide the means to evaluate programs,

service delivery, and organizational systems against best practice and accountability established by the Minister of Health and Social Services.

These standards in no way supersede any existing or upcoming statutes and attendant regulations. The standards replace the following GNWT documents: Home Care Standards (2000), Long-Term Care Standards (2001), Service Standards for People in Supportive Living Homes (2004), and Service Guidelines for People in Supportive Living Homes (2004). Compliance with the standards is mandatory.

The new standards, Section 2.3, cover the LTC program.
Purpose: Long-Term Care provides 24 hour personal care and access to nursing support to clients who have complex medical conditions and/or cognitive care needs.

Standard 2.3.1 LTC includes the following essential services:
Client assessment; case management; 24 hour access to services of Registered Nurses; support for Activities of Daily Living (ADL) and Activities of Daily Living (ADL); respite care; medication supervision and/or administration; preventive health services; palliative/end-of-life care; informal caregiver support; access to medical supplies and equipment loan; social and recreation services; dietary services; housekeeping services; and, laundry/linen services. Section 2.3.2 to 2.3.5 set out additional standards:

- 2.3.2 Long-Term Care clients have access to therapeutic and medical services.
- 2.3.3 Clients/families are informed of: their rights; changes to programs or service delivery; the concerns resolution process; and the costs they are responsible for and payment options.
- 2.3.4 Long-Term Care follows the Supportive Pathways Philosophy of Care.
- 2.3.5 Long-Term Care programs will acquire and maintain recognized accreditation.

Hollander Analytics Services Report: Facility Bed Utilization Review (FY 2014-15)
AVENS – A Community for Seniors, undertook an external review of LTC bed requirements. AVENS contracted Marcus J. Hollander, PhD. of Hollander Analytical Services to conduct another review of the need for LTC beds using a comparative bed to population model. The Hollander methodology included: a review of the literature; consultation with key thought leaders, in the area of LTC utilization rates; comparison of the different planning and resource allocation approaches to determining bed utilization; and reviewing population projects used by MNP in their forecasting bed requirements.

Hollander found the following variables frequently cited in the literature as being predictive of the need for the standards:

- Population Size: Generally, the larger the population, the greater the need for services;
- Age: Older people are more likely to use LTC services;
- Gender: Women are more likely to use services than men;
- Living Arrangements: Those who live alone are more likely to need services;
- Degree of Impairment: The greater the degree of impairment in the Activities of Daily Living (ADL) the greater the need for service;
- Marital Status: Unmarried persons are more likely to need services;
- Socio-Economic Status: Poor people are more in need of services but rich people have more skills and resources to access services;
- Mental Status: The greater the degree of mental impairment the greater the need for services.

The Hollander report cautioned that while the above eight factors can be used to predict the need for future services; the literature indicates that they do not provide a highly accurate basis for predicting actual service utilization. Hollander also identified a considerable variability across jurisdictions in projecting the need for LTC beds.

Age and Gender-Specific Per Capital Method - age and gender groups may increase their populations at different rates (BC planning, MB Health Policy). Inherent in the projections is the premise that respite beds will be converted to permanent as home care services are increased. Within the standards, planning for service delivery will focus on: home care, facility-based LTC, palliative care, and supported living.

The following table provides a comparative analysis by Sue Cullen, ADM, Operations of the bed projections in the MNP report – *GNWT DHSS Continuing Care Review* (November 2013) and Hollander Analytical Services (February 2015).

PROJECTIONS BY MARCUS HOLLANDER PhD - FEBRUARY 2015							
Age and Gender-Specific Per Capital Method - age and gender groups may increase their populations at different rates (BC planning, MB Health Policy)							
Inherent in the projections is the premise that respite beds will be converted to permanent as home care services are increased							
		2014	**2021**	**2026**	**2031**		
		Hollander					
	Yellowknife	67	110	169	229		
	Rest of NWT	130	126	157	191		
	TOTAL	197	236	326	420		
PROJECTIONS BY MNP - NOVEMBER 2014 MNP has included all beds (including respite) in their totals							
		2016	**2021**	**2026**	**2031**		
	MODEL ONE 110/1000 over 70						
	Yellowknife	67	116	181	241		
	Rest of NWT	130	165	207	245		
	MODEL 1 TOTAL	197	281	388	486		
	MODEL TWO 110/1000 over 70 with increase to home care (using a 0.59% ratio)						
	Yellowknife	65	110	165	214		
	Rest of NWT	126	155	191	218		
	MODEL 2 TOTAL	191	265	356	432		
	MODEL THREE 110/1000 over 70 with increase to home care (using a 1.06% ratio)						
	Yellowknife	64	105	154	195		
	Rest of NWT	122	148	177	199		
	MODEL 3 TOTAL	186	253	331	394		
	2016 VARIANCE ANALYSIS USING HOLLANDER REPORT AND MNP MODEL 2 AS COMPARATORS						
			2016		**2016 Variance**	System Variance	
		Current State (2)	Hollander	MNP MODEL 2		Hollander	MNP MODEL 2
	Yellowknife	**69**	67	65	-2	2	4

2015-2016

Amendments to the Hollander Analytical Services Report (FY 2015-16)

Subsequent dialogue between the DHSS and Dr. Hollander (Hollander Analytical Services) focused on the appropriate allocation of the 13 Extended Care Beds (which reflects a total of 173 LTC beds rather than 160) and the impact on original LTC bed projections in the February 2015 report. The discussion resulted in a number of amendments to the original February 2015 bed projections. The key observations of the dialogue are summarized below (May 14, 2015 email communication to Sue Cullen, ADM – Operations from Dr. Hollander):

As you can see, if the 13 respite beds are incorporated into the bed counts we come out with a lower projection for 2021, a very similar projection for 2026, and a higher projection for 2031. As I have said, there is no ultimately correct number. You will need to decide what you think is best for the NWT. Having said that, given your overall bed utilization ratios, I am quite comfortable with the numbers using the initial base of 173 rather than 160. The reduction of 13 beds was premised on essentially an iron clad guarantee of equivalent enhancements in home care. It may be that this may be difficult to achieve. Thus, combining long term care beds and respite beds may be a reasonable option. It also provides estimates that are quite consistent with the model 2 estimates from the MNP report.

My intuitive sense is that areas such as the NWT that are relatively sparsely populated can legitimately have bed ratios somewhat higher than more densely populated areas such as the Canadian provinces. My best estimate of a reasonable bed requirement is somewhere in the order of the mid-50s or a bit higher. Thus, the overall estimate of 57 beds/1,000 for the projection based on 173 beds seems quite reasonable to me. In conclusion, it is really up to you to determine what is best for the NWT and what resources can be dedicated to long term care beds. If bed reductions are necessary, then I would go with our initial estimates based on 160 beds in 2014 with a significant enhancement to the home care program. If this may be problematic, as it often is in other jurisdictions, I would be quite comfortable with the projections that we have provided on the base of 173 [Note: this is actually 174 beds] *beds in 2014."*

The existing DHSS bed inventory, by facility is summarized below.

LTC Bed Status: FY 2015-16

Region	Community	Facility	No. of Beds
1	Inuvik	Inuvik Regional Hospital	25
3	Fort Simpson	Fort Simpson LTC Facility	18
4	Behchoko	Jimmy Erasmus Seniors Home	9
5/6	Yellowknife	Aven Manor	29
		Aven Cottages TDF	28
		Stanton Territorial Hospital – Extended Care Unit	12
7	Hay River	H.H. Williams Memorial Hospital LTC Unit	10
		Woodland Manor LTC	15
8	Fort Smith	Northern Lights Special Care Home*	28
	Total		**174***

*Includes 13 respite beds

DHSS LTC Program Review (FY 2015-16)

The DHSS initiated the *Long-Term Care Program Review* (this review) in FY 2015-16. The purpose of this review is to inform options and decisions, based on the best and most current data and information available, by the DHSS regarding optimal allocation of scarce LTC resources (including respite beds LTC beds given the complementary function in the standards) and future program investments across the NWT.

NWT Continuing Care Services Delivery Action Plan (FY 2015-16)

The DHSS initiated a process to develop a NWT Continuing Care Service Delivery Action Plan. The overall purpose is to develop a detailed five-year action plan for all regions in the NWT in the three key areas of continuing care: home and community care; LTC; and, palliative care.

Appendix B: NWT and Regional Demographics: Historical Context

Table B-1: Population Estimates by Age, Ethnicity and Gender, NWT, 1996 to 2014

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
All Ages																			
Northwest Territories	41,741	41,625	40,802	40,638	40,480	40,845	41,694	42,595	43,305	43,401	43,178	43,374	43,350	43,149	43,278	43,501	43,639	43,841	43,623
Non-Aboriginal	21,623	21,420	20,537	20,177	20,032	19,942	20,553	21,332	21,926	21,908	21,563	21,624	21,502	21,243	21,202	21,242	21,278	21,377	21,198
Aboriginal	20,118	20,205	20,265	20,461	20,448	20,903	21,141	21,263	21,379	21,493	21,615	21,750	21,848	21,906	22,076	22,259	22,361	22,464	22,425
Males	21,731	21,677	21,190	21,049	20,951	21,138	21,611	22,100	22,460	22,567	22,464	22,505	22,409	22,238	22,249	22,337	22,364	22,421	22,208
Females	20,010	19,948	19,612	19,589	19,529	19,707	20,083	20,495	20,845	20,834	20,714	20,869	20,941	20,911	21,029	21,164	21,275	21,420	21,415
0 to 59 Years																			
Northwest Territories	39,472	39,274	38,426	38,209	37,993	38,310	39,022	39,816	40,368	40,314	39,930	39,961	39,743	39,407	39,364	39,361	39,332	39,265	38,816
Non-Aboriginal	20,796	20,530	19,655	19,268	19,084	18,992	19,525	20,227	20,746	20,649	20,223	20,152	19,891	19,483	19,330	19,210	19,171	19,106	18,782
Aboriginal	18,676	18,744	18,771	18,941	18,909	19,318	19,497	19,589	19,622	19,665	19,707	19,809	19,852	19,924	20,034	20,151	20,161	20,159	20,034
Males	20,527	20,422	19,942	19,768	19,633	19,803	20,213	20,641	20,905	20,934	20,743	20,694	20,479	20,254	20,198	20,184	20,132	20,059	19,752
Females	18,945	18,852	18,484	18,441	18,360	18,507	18,809	19,175	19,463	19,380	19,187	19,267	19,264	19,153	19,166	19,177	19,200	19,206	19,064
60 Years and Older																			
Northwest Territories	2,269	2,351	2,376	2,429	2,487	2,535	2,672	2,779	2,937	3,087	3,248	3,413	3,607	3,742	3,914	4,140	4,307	4,576	4,807
Non-Aboriginal	827	890	882	909	948	950	1,028	1,105	1,180	1,259	1,340	1,472	1,611	1,760	1,872	2,032	2,107	2,271	2,416
Aboriginal	1,442	1,461	1,494	1,520	1,539	1,585	1,644	1,674	1,757	1,828	1,908	1,941	1,996	1,982	2,042	2,108	2,200	2,305	2,391
Males	1,204	1,255	1,248	1,281	1,318	1,335	1,398	1,459	1,555	1,633	1,721	1,811	1,930	1,984	2,051	2,153	2,232	2,362	2,456
Females	1,065	1,096	1,128	1,148	1,169	1,200	1,274	1,320	1,382	1,454	1,527	1,602	1,677	1,758	1,863	1,987	2,075	2,214	2,351
65 Years and Older																			
Northwest Territories	1,464	1,530	1,577	1,603	1,662	1,679	1,748	1,781	1,844	1,949	1,973	2,061	2,159	2,236	2,302	2,426	2,546	2,714	2,879
Non-Aboriginal	449	495	501	540	579	581	599	615	644	691	700	754	822	899	950	1,033	1,093	1,204	1,286
Aboriginal	1,015	1,035	1,076	1,063	1,083	1,098	1,149	1,166	1,200	1,258	1,273	1,307	1,337	1,337	1,352	1,393	1,453	1,510	1,593
Males	758	796	814	832	864	873	905	920	947	984	971	1,020	1,067	1,109	1,137	1,211	1,277	1,370	1,427
Females	706	734	763	771	798	806	843	861	897	965	1,002	1,041	1,092	1,127	1,165	1,215	1,269	1,344	1,452
70 Years and Older																			
Northwest Territories	903	937	972	991	1,023	1,037	1,091	1,113	1,150	1,232	1,259	1,302	1,328	1,356	1,402	1,432	1,507	1,582	1,687
Non-Aboriginal	252	274	281	319	331	348	365	367	360	391	400	434	457	497	525	543	594	636	678
Aboriginal	651	663	691	672	692	689	726	746	790	841	859	868	871	859	877	889	913	946	1,009
Males	459	471	483	500	521	518	542	552	579	609	608	631	645	639	649	652	688	726	781
Females	444	466	489	491	502	519	549	561	571	623	651	671	683	717	753	780	819	856	906

Notes:

1. Source: Statistics Canada and NWT Bureau of Statistics

Table B-2: Population Estimates by Age, Ethnicity and Gender, NWT and Health Authority, 1996 to 2014

	0 to 59 Years of Age					60+ Years of Age					65+ Years of Age					70+ Years of Age				
	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female
1996																				
Northwest Territory	**39,472**	**20,796**	**18,676**	**20,527**	**18,945**	**2,269**	**827**	**1,442**	**1,204**	**1,065**	**1,464**	**449**	**1,015**	**758**	**706**	**903**	**252**	**651**	**459**	**444**
Beaufort Delta HSSA	6,716	1,677	5,039	3,468	3,248	444	73	371	231	213	277	36	241	143	134	169	18	151	83	86
Dehcho HSSA	2,730	569	2,161	1,419	1,311	264	25	239	156	108	193	12	181	106	87	143	x	136	77	66
Fort Smith HSSA	2,321	964	1,357	1,195	1,126	239	85	154	130	109	158	44	114	86	72	85	22	63	40	45
Hay River HSSA	3,869	2,237	1,632	2,023	1,846	277	171	106	157	120	168	96	72	93	75	96	54	42	52	44
Sahtu HSSA	2,593	766	1,827	1,372	1,221	148	22	126	55	93	101	14	87	35	66	67	x	59	25	42
Tłı̨chǫ Community Services Agency	2,394	193	2,201	1,286	1,108	213	17	196	114	99	159	14	145	88	71	107	x	99	64	43
Yellowknife HSSA	18,849	14,390	4,459	9,764	9,085	684	434	250	361	323	408	233	175	207	201	236	135	101	118	118
1997																				
Northwest Territory	**39,274**	**20,530**	**18,744**	**20,422**	**18,852**	**2,351**	**890**	**1,461**	**1,255**	**1,096**	**1,530**	**495**	**1,035**	**796**	**734**	**937**	**274**	**663**	**471**	**466**
Beaufort Delta HSSA	6,737	1,715	5,022	3,501	3,236	476	91	385	254	222	312	53	259	164	148	182	27	155	94	88
Dehcho HSSA	2,768	588	2,180	1,459	1,309	271	29	242	162	109	193	16	177	105	88	149	x	139	77	72
Fort Smith HSSA	2,299	940	1,359	1,184	1,115	250	95	155	142	108	157	43	114	88	69	95	24	71	48	47
Hay River HSSA	3,838	2,170	1,668	1,973	1,865	292	184	108	163	129	191	114	77	109	82	102	62	40	55	47
Sahtu HSSA	2,550	739	1,811	1,349	1,201	155	23	132	65	90	104	12	92	43	61	69	x	63	29	40
Tłı̨chǫ Community Services Agency	2,397	202	2,195	1,292	1,105	200	16	184	109	91	147	13	134	80	67	98	x	91	59	39
Yellowknife HSSA	18,685	14,176	4,509	9,664	9,021	707	452	255	360	347	426	244	182	207	219	242	138	104	109	133
1998																				
Northwest Territory	**38,426**	**19,655**	**18,771**	**19,942**	**18,484**	**2,376**	**882**	**1,494**	**1,248**	**1,128**	**1,577**	**501**	**1,076**	**814**	**763**	**972**	**281**	**691**	**483**	**489**
Beaufort Delta HSSA	6,667	1,686	4,981	3,440	3,227	487	94	393	256	231	324	55	269	166	158	185	26	159	93	92
Dehcho HSSA	2,758	576	2,182	1,465	1,293	264	32	232	157	107	194	19	175	109	85	147	12	135	80	67
Fort Smith HSSA	2,186	882	1,304	1,137	1,049	244	90	154	136	108	153	38	115	87	66	90	22	68	47	43
Hay River HSSA	3,816	2,103	1,713	1,955	1,861	302	180	122	172	130	203	112	91	114	89	111	61	50	56	55
Sahtu HSSA	2,514	759	1,755	1,326	1,188	171	31	140	77	94	121	20	101	56	65	81	12	69	38	43
Tłı̨chǫ Community Services Agency	2,420	192	2,228	1,327	1,093	215	21	194	110	105	159	15	144	79	80	105	x	98	56	49
Yellowknife HSSA	18,065	13,457	4,608	9,292	8,773	693	434	259	340	353	423	242	181	203	220	253	141	112	113	140
1999																				
Northwest Territory	**38,209**	**19,268**	**18,941**	**19,768**	**18,441**	**2,429**	**909**	**1,520**	**1,281**	**1,148**	**1,603**	**540**	**1,063**	**832**	**771**	**991**	**319**	**672**	**500**	**491**
Beaufort Delta HSSA	6,641	1,682	4,959	3,424	3,217	503	114	389	267	236	317	67	250	162	155	177	29	148	89	88
Dehcho HSSA	2,805	575	2,230	1,487	1,318	277	38	239	146	131	196	27	169	96	100	142	16	126	68	74
Fort Smith HSSA	2,204	902	1,302	1,136	1,068	249	90	159	136	113	161	38	123	90	71	99	20	79	52	47
Hay River HSSA	3,845	2,105	1,740	1,949	1,896	288	169	119	161	127	183	106	77	106	77	104	67	37	59	45
Sahtu HSSA	2,413	679	1,734	1,274	1,139	180	26	154	93	87	133	17	116	70	63	84	x	76	41	43
Tłı̨chǫ Community Services Agency	2,416	194	2,222	1,320	1,096	227	26	201	113	114	171	23	148	85	86	115	16	99	56	59
Yellowknife HSSA	17,885	13,131	4,754	9,178	8,707	705	446	259	365	340	442	262	180	223	219	270	163	107	135	135
2000																				
Northwest Territory	**37,993**	**19,084**	**18,909**	**19,633**	**18,360**	**2,487**	**948**	**1,539**	**1,318**	**1,169**	**1,662**	**579**	**1,083**	**864**	**798**	**1,023**	**331**	**692**	**521**	**502**
Beaufort Delta HSSA	6,607	1,726	4,881	3,372	3,235	499	107	392	269	230	318	62	256	169	149	180	25	155	90	90
Dehcho HSSA	2,813	597	2,216	1,506	1,307	278	45	233	143	135	197	26	171	98	99	134	15	119	68	66
Fort Smith HSSA	2,174	886	1,288	1,130	1,044	254	98	156	135	119	175	54	121	94	81	103	24	79	53	50
Hay River HSSA	3,808	1,993	1,815	1,941	1,867	297	163	134	163	134	192	102	90	103	89	115	63	52	60	55
Sahtu HSSA	2,348	681	1,667	1,236	1,112	189	27	162	107	82	139	22	117	81	58	88	15	73	52	36
Tłı̨chǫ Community Services Agency	2,443	212	2,231	1,336	1,107	230	27	203	106	124	173	23	150	83	90	119	15	104	54	65
Yellowknife HSSA	17,800	12,989	4,811	9,112	8,688	740	481	259	395	345	468	290	178	236	232	284	174	110	144	140
2001																				
Northwest Territory	**38,310**	**18,992**	**19,318**	**19,803**	**18,507**	**2,535**	**950**	**1,585**	**1,335**	**1,200**	**1,679**	**581**	**1,098**	**873**	**806**	**1,037**	**348**	**689**	**518**	**519**
Beaufort Delta HSSA	6,465	1,485	4,980	3,304	3,161	507	103	404	275	232	332	55	277	178	154	196	37	159	103	93
Dehcho HSSA	2,893	499	2,394	1,569	1,324	268	x	259	132	136	189	x	180	87	102	128	x	119	55	73
Fort Smith HSSA	2,085	839	1,246	1,073	1,012	243	99	144	130	113	173	70	103	98	75	101	41	60	55	46
Hay River HSSA	3,776	1,907	1,869	1,937	1,839	310	167	143	174	136	198	103	95	108	90	115	53	62	61	54
Sahtu HSSA	2,339	615	1,724	1,238	1,101	188	29	159	110	78	129	24	105	79	50	86	17	69	50	36
Tłı̨chǫ Community Services Agency	2,462	136	2,326	1,344	1,118	243	x	241	108	135	175	x	174	75	100	124	x	123	51	73
Yellowknife HSSA	18,290	13,511	4,779	9,338	8,952	776	541	235	406	370	483	319	164	248	235	287	190	97	143	144

	0 to 59 Years of Age					60+ Years of Age					65+ Years of Age					70+ Years of Age				
	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female
2002																				
Northwest Territory	**39,022**	**19,525**	**19,497**	**20,213**	**18,809**	**2,672**	**1,028**	**1,644**	**1,398**	**1,274**	**1,748**	**599**	**1,149**	**905**	**843**	**1,091**	**365**	**726**	**542**	**549**
Beaufort Delta HSSA	6,554	1,603	4,951	3,343	3,211	533	105	428	291	242	350	51	299	193	157	212	35	177	112	100
Dehcho HSSA	2,867	489	2,378	1,547	1,320	285	24	261	150	135	192	14	178	95	97	128	14	114	58	70
Fort Smith HSSA	2,117	836	1,281	1,068	1,049	252	101	151	129	123	181	71	110	98	83	104	41	63	54	50
Hay River HSSA	3,728	1,891	1,837	1,922	1,806	327	182	145	187	140	202	105	97	115	87	125	61	64	68	57
Sahtu HSSA	2,334	592	1,742	1,255	1,079	188	31	157	110	78	130	20	110	77	53	91	15	76	54	37
Tłı̨chǫ Community Services Agency	2,487	142	2,345	1,348	1,139	252	x	250	111	141	176	x	175	74	102	124	x	123	49	75
Yellowknife HSSA	18,935	13,972	4,963	9,730	9,205	835	583	252	420	415	517	337	180	253	264	307	198	109	147	160
2003																				
Northwest Territory	**39,816**	**20,227**	**19,589**	**20,641**	**19,175**	**2,779**	**1,105**	**1,674**	**1,459**	**1,320**	**1,781**	**615**	**1,166**	**920**	**861**	**1,113**	**367**	**746**	**552**	**561**
Beaufort Delta HSSA	6,525	1,629	4,896	3,331	3,194	552	107	445	288	264	356	46	310	190	166	215	30	185	112	103
Dehcho HSSA	2,831	475	2,356	1,533	1,298	290	27	263	154	136	196	14	182	96	100	135	13	122	61	74
Fort Smith HSSA	2,181	884	1,297	1,108	1,073	257	107	150	134	123	192	75	117	100	92	108	43	65	56	52
Hay River HSSA	3,703	1,844	1,859	1,914	1,789	345	193	152	191	154	216	118	98	124	92	130	69	61	71	59
Sahtu HSSA	2,349	618	1,731	1,258	1,091	200	27	173	116	84	134	18	116	80	54	97	13	84	59	38
Tłı̨chǫ Community Services Agency	2,551	158	2,393	1,384	1,167	251	x	246	114	137	179	x	176	80	99	129	x	126	54	75
Yellowknife HSSA	19,676	14,619	5,057	10,113	9,563	884	639	245	462	422	508	341	167	250	258	299	196	103	139	160
2004																				
Northwest Territory	**40,368**	**20,746**	**19,622**	**20,905**	**19,463**	**2,937**	**1,180**	**1,757**	**1,555**	**1,382**	**1,844**	**644**	**1,200**	**947**	**897**	**1,150**	**360**	**790**	**579**	**571**
Beaufort Delta HSSA	6,499	1,720	4,779	3,324	3,175	560	91	469	298	262	357	45	312	184	173	212	23	189	109	103
Dehcho HSSA	2,792	492	2,300	1,503	1,289	309	17	292	169	140	209	x	206	111	98	147	x	145	74	73
Fort Smith HSSA	2,234	896	1,338	1,133	1,101	253	108	145	132	121	179	71	108	90	89	102	38	64	52	50
Hay River HSSA	3,855	1,941	1,914	2,017	1,838	362	224	138	198	164	226	136	90	127	99	129	77	52	73	56
Sahtu HSSA	2,359	617	1,742	1,264	1,095	217	31	186	113	104	140	14	126	74	66	107	12	95	59	48
Tłı̨chǫ Community Services Agency	2,556	165	2,391	1,378	1,178	242	x	239	107	135	171	x	170	76	95	121	x	121	55	66
Yellowknife HSSA	20,073	14,915	5,158	10,286	9,787	994	706	288	538	456	562	374	188	285	277	332	208	124	157	175
2005																				
Northwest Territory	**40,314**	**20,649**	**19,665**	**20,934**	**19,380**	**3,087**	**1,259**	**1,828**	**1,633**	**1,454**	**1,949**	**691**	**1,258**	**984**	**965**	**1,232**	**391**	**841**	**609**	**623**
Beaufort Delta HSSA	6,488	1,687	4,801	3,308	3,180	597	99	498	309	288	378	39	339	191	187	242	20	222	128	114
Dehcho HSSA	2,770	505	2,265	1,470	1,300	333	18	315	188	145	230	x	225	122	108	161	x	159	84	77
Fort Smith HSSA	2,187	826	1,361	1,105	1,082	257	109	148	132	125	187	76	111	90	97	113	46	67	53	60
Hay River HSSA	3,854	1,964	1,890	2,026	1,828	391	248	143	210	181	242	153	89	132	110	146	92	54	75	71
Sahtu HSSA	2,351	596	1,755	1,282	1,069	231	25	206	113	118	164	12	152	80	84	107	x	101	53	54
Tłı̨chǫ Community Services Agency	2,624	181	2,443	1,396	1,228	235	x	232	113	122	168	x	167	75	93	118	x	117	57	61
Yellowknife HSSA	20,040	14,890	5,150	10,347	9,693	1,043	757	286	568	475	580	405	175	294	286	345	224	121	159	186
2006																				
Northwest Territory	**39,930**	**20,223**	**19,707**	**20,743**	**19,187**	**3,248**	**1,340**	**1,908**	**1,721**	**1,527**	**1,973**	**700**	**1,273**	**971**	**1,002**	**1,259**	**400**	**859**	**608**	**651**
Beaufort Delta HSSA	6,369	1,620	4,749	3,279	3,090	627	93	534	332	295	395	38	357	197	198	253	15	238	130	123
Dehcho HSSA	2,749	491	2,258	1,444	1,305	345	13	332	189	156	232	x	230	122	110	166	x	166	86	80
Fort Smith HSSA	2,179	781	1,398	1,088	1,091	282	126	156	143	139	198	84	114	92	106	122	52	70	57	65
Hay River HSSA	3,770	1,894	1,876	1,977	1,793	418	264	154	218	200	258	160	98	134	124	163	99	64	80	83
Sahtu HSSA	2,346	579	1,767	1,280	1,066	236	26	210	112	124	157	x	149	66	91	97	x	94	41	56
Tłı̨chǫ Community Services Agency	2,658	172	2,486	1,418	1,240	226	x	222	108	118	163	x	162	74	89	110	x	109	51	59
Yellowknife HSSA	19,859	14,686	5,173	10,257	9,602	1,114	814	300	619	495	570	407	163	286	284	348	230	118	163	185
2007																				
Northwest Territory	**39,961**	**20,152**	**19,809**	**20,694**	**19,267**	**3,413**	**1,472**	**1,941**	**1,811**	**1,602**	**2,061**	**754**	**1,307**	**1,020**	**1,041**	**1,302**	**434**	**868**	**631**	**671**
Beaufort Delta HSSA	6,327	1,584	4,743	3,260	3,067	642	100	542	335	307	399	39	360	199	200	253	14	239	127	126
Dehcho HSSA	2,674	463	2,211	1,416	1,258	354	21	333	186	168	236	x	234	119	117	160	x	160	78	82
Fort Smith HSSA	2,208	798	1,410	1,093	1,115	298	137	161	147	151	201	87	114	97	104	139	61	78	71	68
Hay River HSSA	3,811	1,921	1,890	2,016	1,795	434	273	161	229	205	263	165	98	139	124	165	103	62	84	81
Sahtu HSSA	2,347	592	1,755	1,269	1,078	236	31	205	119	117	167	12	155	74	93	102	x	98	45	57
Tłı̨chǫ Community Services Agency	2,679	170	2,509	1,417	1,262	226	xx	220	110	116	168	x	165	76	92	109	x	107	49	60
Yellowknife HSSA	19,915	14,624	5,291	10,223	9,692	1,223	904	319	685	538	627	446	181	316	311	374	250	124	177	197

	0 to 59 Years of Age					60+ Years of Age					65+ Years of Age					70+ Years of Age				
	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female	Total	Non-Aboriginal	Aboriginal	Male	Female
2008																				
Northwest Territory	**39,743**	**19,891**	**19,852**	**20,479**	**19,264**	**3,607**	**1,611**	**1,996**	**1,930**	**1,677**	**2,159**	**822**	**1,337**	**1,067**	**1,092**	**1,328**	**457**	**871**	**645**	**683**
Beaufort Delta HSSA	6,289	1,498	4,791	3,244	3,045	668	116	552	346	322	427	54	373	208	219	268	22	246	132	136
Dehcho HSSA	2,657	449	2,208	1,394	1,263	360	35	325	191	169	237	x	228	119	118	160	x	156	78	82
Fort Smith HSSA	2,149	775	1,374	1,054	1,095	314	141	173	160	154	204	85	119	103	101	148	61	87	76	72
Hay River HSSA	3,719	1,865	1,854	1,941	1,778	463	282	181	243	220	272	163	109	138	134	162	98	64	89	73
Sahtu HSSA	2,306	591	1,715	1,247	1,059	236	38	198	122	114	165	17	148	79	86	97	x	92	44	53
Tłı̨chǫ Community Services Agency	2,670	150	2,520	1,394	1,276	229	x	225	116	113	164	x	163	73	91	108	x	107	49	59
Yellowknife HSSA	19,953	14,563	5,390	10,205	9,748	1,337	995	342	752	585	690	493	197	347	343	385	266	119	177	208
2009																				
Northwest Territory	**39,407**	**19,483**	**19,924**	**20,254**	**19,153**	**3,742**	**1,760**	**1,982**	**1,984**	**1,758**	**2,236**	**899**	**1,337**	**1,109**	**1,127**	**1,356**	**497**	**859**	**639**	**717**
Beaufort Delta HSSA	6,263	1,459	4,804	3,238	3,025	690	133	557	354	336	451	53	398	226	225	273	23	250	129	144
Dehcho HSSA	2,710	465	2,245	1,428	1,282	347	51	296	187	160	229	24	205	121	108	148	x	139	77	71
Fort Smith HSSA	2,170	789	1,381	1,065	1,105	328	156	172	166	162	210	96	114	105	105	149	65	84	75	74
Hay River HSSA	3,627	1,791	1,836	1,911	1,716	474	287	187	239	235	298	177	121	142	156	181	108	73	86	95
Sahtu HSSA	2,268	567	1,701	1,207	1,061	255	53	202	134	121	169	26	143	82	87	104	12	92	47	57
Tłı̨chǫ Community Services Agency	2,652	147	2,505	1,369	1,283	229	14	215	120	109	164	x	156	79	85	101	x	100	46	55
Yellowknife HSSA	19,717	14,265	5,452	10,036	9,681	1,419	1,066	353	784	635	715	515	200	354	361	400	279	121	179	221
2010																				
Northwest Territory	**39,364**	**19,330**	**20,034**	**20,198**	**19,166**	**3,914**	**1,872**	**2,042**	**2,051**	**1,863**	**2,302**	**950**	**1,352**	**1,137**	**1,165**	**1,402**	**525**	**877**	**649**	**753**
Beaufort Delta HSSA	6,266	1,360	4,906	3,216	3,050	730	157	573	368	362	471	71	400	223	248	285	25	260	127	158
Dehcho HSSA	2,684	440	2,244	1,418	1,266	365	66	299	190	175	235	30	205	119	116	152	13	139	72	80
Fort Smith HSSA	2,130	778	1,352	1,038	1,092	343	165	178	172	171	213	98	115	110	103	144	64	80	73	71
Hay River HSSA	3,703	1,858	1,845	1,957	1,746	485	280	205	240	245	320	184	136	154	166	192	109	83	94	98
Sahtu HSSA	2,236	563	1,673	1,169	1,067	256	55	201	137	119	171	29	142	86	85	112	15	97	54	58
Tłı̨chǫ Community Services Agency	2,652	136	2,516	1,363	1,289	230	14	216	115	115	156	x	149	74	82	102	x	100	42	60
Yellowknife HSSA	19,693	14,195	5,498	10,037	9,656	1,505	1,135	370	829	676	736	531	205	371	365	415	297	118	187	228
2011																				
Northwest Territory	**39,361**	**19,210**	**20,151**	**20,184**	**19,177**	**4,140**	**2,032**	**2,108**	**2,153**	**1,987**	**2,426**	**1,033**	**1,393**	**1,211**	**1,215**	**1,432**	**543**	**889**	**652**	**780**
Beaufort Delta HSSA	6,199	1,260	4,939	3,175	3,024	750	160	590	382	368	485	70	415	239	246	287	21	266	130	157
Dehcho HSSA	2,703	445	2,258	1,414	1,289	367	63	304	194	173	232	29	203	120	112	137	12	125	66	71
Fort Smith HSSA	2,197	839	1,358	1,093	1,104	378	186	192	188	190	236	113	123	119	117	152	71	81	76	76
Hay River HSSA	3,624	1,780	1,844	1,918	1,706	528	304	224	265	263	348	199	149	172	176	212	115	97	103	109
Sahtu HSSA	2,176	552	1,624	1,131	1,045	251	65	186	136	115	159	32	127	86	73	96	13	83	47	49
Tłı̨chǫ Community Services Agency	2,684	138	2,546	1,377	1,307	235	16	219	110	125	162	x	154	73	89	111	x	110	42	69
Yellowknife HSSA	19,778	14,196	5,582	10,076	9,702	1,631	1,238	393	878	753	804	582	222	402	402	437	310	127	188	249
2012																				
Northwest Territory	**39,332**	**19,171**	**20,161**	**20,132**	**19,200**	**4,307**	**2,107**	**2,200**	**2,232**	**2,075**	**2,546**	**1,093**	**1,453**	**1,277**	**1,269**	**1,507**	**594**	**913**	**688**	**819**
Beaufort Delta HSSA	6,170	1,263	4,907	3,121	3,049	772	161	611	399	373	510	82	428	257	253	306	33	273	142	164
Dehcho HSSA	2,717	438	2,279	1,419	1,298	381	65	316	199	182	249	31	218	126	123	148	14	134	71	77
Fort Smith HSSA	2,186	819	1,367	1,091	1,095	388	192	196	199	189	245	120	125	122	123	151	73	78	73	78
Hay River HSSA	3,628	1,778	1,850	1,903	1,725	541	310	231	270	271	367	211	156	179	188	220	122	98	104	116
Sahtu HSSA	2,205	559	1,646	1,136	1,069	274	71	203	149	125	168	33	135	94	74	102	15	87	52	50
Tłı̨chǫ Community Services Agency	2,703	137	2,566	1,389	1,314	240	16	224	112	128	161	x	152	70	91	111	x	108	39	72
Yellowknife HSSA	19,723	14,177	5,546	10,073	9,650	1,711	1,292	419	904	807	846	607	239	429	417	469	334	135	207	262
2013																				
Northwest Territory	**39,265**	**19,106**	**20,159**	**20,059**	**19,206**	**4,576**	**2,271**	**2,305**	**2,362**	**2,214**	**2,714**	**1,204**	**1,510**	**1,370**	**1,344**	**1,582**	**636**	**946**	**726**	**856**
Beaufort Delta HSSA	6,154	1,256	4,898	3,118	3,036	774	154	620	395	379	515	90	425	260	255	316	41	275	147	169
Dehcho HSSA	2,716	421	2,295	1,412	1,304	399	77	322	210	189	258	36	222	132	126	152	17	135	77	75
Fort Smith HSSA	2,182	827	1,355	1,090	1,092	392	192	200	200	192	260	129	131	134	126	153	73	80	77	76
Hay River HSSA	3,597	1,757	1,840	1,855	1,742	584	336	248	290	294	378	214	164	177	201	225	123	102	97	128
Sahtu HSSA	2,232	572	1,660	1,161	1,071	298	78	220	162	136	186	38	148	102	84	119	20	99	60	59
Tłı̨chǫ Community Services Agency	2,697	135	2,562	1,383	1,314	254	18	236	124	130	174	11	163	86	88	116	x	110	46	70
Yellowknife HSSA	19,687	14,138	5,549	10,040	9,647	1,875	1,416	459	981	894	943	686	257	479	464	501	356	145	222	279
2014																				
Northwest Territory	**38,816**	**18,782**	**20,034**	**19,752**	**19,064**	**4,807**	**2,416**	**2,391**	**2,456**	**2,351**	**2,879**	**1,286**	**1,593**	**1,427**	**1,452**	**1,687**	**678**	**1,009**	**781**	**906**
Beaufort Delta HSSA	6,110	1,219	4,891	3,084	3,026	788	158	630	388	400	532	88	444	263	269	326	38	288	151	175
Dehcho HSSA	2,742	460	2,282	1,437	1,305	420	84	336	213	207	266	36	230	130	136	160	16	144	79	81
Fort Smith HSSA	2,149	836	1,313	1,097	1,052	387	191	196	195	192	267	132	135	132	135	159	78	81	80	79
Hay River HSSA	3,495	1,714	1,781	1,808	1,687	637	365	272	327	310	400	226	174	188	212	245	132	113	106	139
Sahtu HSSA	2,258	567	1,691	1,177	1,081	302	74	228	163	139	195	40	155	109	86	126	20	106	65	61
Tłı̨chǫ Community Services Agency	2,708	147	2,561	1,381	1,327	266	19	247	130	136	182	13	169	88	94	128	x	119	53	75
Yellowknife HSSA	19,354	13,839	5,515	9,768	9,586	2,007	1,525	482	1,040	967	1,037	751	286	517	520	543	385	158	247	296

Notes:

1. Source: NWT Bureau of Statistics
2. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
3. Fort Smith HSSA includes Fort Smith
4. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise
5. Deh Cho HSSA includes Fort Liard, Fort Providence, Fort Simpson, Jean Marie River, Kakisa, Trout Lake, Nahanni Butte, Wrigley & Region 4 Unorganized
6. Tlicho HSSA includes Behchoko, Wha Ti, Wekweti & Gameti
7. Beaufort-Delta HSSA includes Aklavik, Fort McPherson, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, Tsiigehtchic & Region 1 Unorganized
8. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita
9. Cells with values of 10 or less are suppressed, but the information is included in the totals

Appendix C: NWT and Regional Demographic Projections: 2014 to 2034

Table C-1: Population Projections by Health Region, Ethnicity and Age Group, NWT, 2014-2034

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal
Northwest Territories																														
Total Ages	**43,623**	**22,425**	**21,198**	**43,687**	**22,482**	**21,205**	**43,760**	**22,555**	**21,205**	**43,830**	**22,619**	**21,211**	**44,005**	**22,787**	**21,218**	**44,156**	**22,908**	**21,248**	**44,294**	**22,975**	**21,319**	**44,450**	**22,978**	**21,472**	**44,729**	**22,934**	**21,795**	**45,012**	**22,877**	**22,135**
0- to 59-year-olds	38,816	20,034	18,782	38,599	19,985	18,614	38,417	19,939	18,478	38,212	19,892	18,320	37,372	19,628	17,744	36,495	19,263	17,232	35,927	18,952	16,975	35,745	18,648	17,097	35,680	18,396	17,284	35,803	18,260	17,543
60-year-olds and older	**4,807**	**2,391**	**2,416**	**5,088**	**2,497**	**2,591**	**5,343**	**2,616**	**2,727**	**5,618**	**2,727**	**2,891**	**6,633**	**3,159**	**3,474**	**7,661**	**3,645**	**4,016**	**8,367**	**4,023**	**4,344**	**8,705**	**4,330**	**4,375**	**9,049**	**4,538**	**4,511**	**9,209**	**4,617**	**4,592**
60- to 64-year-olds	1,928	798	1,130	2,024	835	1,189	2,050	867	1,183	2,177	927	1,250	2,554	1,105	1,449	2,851	1,273	1,578	2,666	1,256	1,410	2,234	1,199	1,035	2,135	1,134	1,001	2,099	1,053	1,046
65-year-olds and older	**2,879**	**1,593**	**1,286**	**3,064**	**1,662**	**1,402**	**3,293**	**1,749**	**1,544**	**3,441**	**1,800**	**1,641**	**4,079**	**2,054**	**2,025**	**4,810**	**2,372**	**2,438**	**5,701**	**2,767**	**2,934**	**6,471**	**3,131**	**3,340**	**6,914**	**3,404**	**3,510**	**7,110**	**3,564**	**3,546**
65- to 69-year-olds	1,192	584	608	1,288	624	664	1,393	660	733	1,450	685	765	1,628	749	879	1,854	876	978	2,219	1,069	1,150	2,370	1,185	1,185	2,109	1,143	966	1,903	1,108	795
70-year-olds and older	**1,687**	**1,009**	**678**	**1,776**	**1,038**	**738**	**1,900**	**1,089**	**811**	**1,991**	**1,115**	**876**	**2,451**	**1,305**	**1,146**	**2,956**	**1,496**	**1,460**	**3,482**	**1,698**	**1,784**	**4,101**	**1,946**	**2,155**	**4,805**	**2,261**	**2,544**	**5,207**	**2,456**	**2,751**
70- to 74-year-olds	705	414	291	733	412	321	811	450	361	852	463	389	1,072	540	532	1,278	609	669	1,398	677	721	1,655	815	840	1,949	968	981	1,996	1,016	980
75- to 79-year-olds	469	278	191	493	295	198	518	310	208	520	294	226	620	336	284	814	411	403	1,011	464	547	1,165	528	637	1,303	598	705	1,437	668	769
80- to 84-year-olds	290	179	111	309	184	125	305	170	135	326	189	137	387	221	166	435	246	189	557	289	268	671	312	359	815	363	452	913	407	506
85- to 89-year-olds	140	86	54	148	90	58	164	99	65	176	100	76	219	122	97	229	124	105	279	149	130	321	164	157	394	186	208	460	194	266
90- to 94-year-olds	62	42	20	69	45	24	76	48	28	87	52	35	98	56	42	116	66	50	134	68	66	154	66	88	168	72	96	200	92	108
95-year-olds and older	21	x	11	24	12	12	26	12	14	30	17	13	55	30	25	84	40	44	103	51	52	135	61	74	176	74	102	201	79	122
Beaufort Delta Health & Social Services Authority																														
Total Ages	**6,898**	**5,521**	**1,377**	**6,914**	**5,535**	**1,379**	**6,925**	**5,547**	**1,378**	**6,938**	**5,558**	**1,380**	**6,949**	**5,584**	**1,365**	**6,948**	**5,597**	**1,351**	**6,934**	**5,594**	**1,340**	**6,900**	**5,570**	**1,330**	**6,879**	**5,538**	**1,341**	**6,872**	**5,519**	**1,353**
0- to 59-year-olds	6,110	4,891	1,219	6,081	4,880	1,201	6,073	4,877	1,196	6,062	4,871	1,191	5,944	4,802	1,142	5,788	4,696	1,092	5,654	4,597	1,057	5,576	4,529	1,047	5,521	4,463	1,058	5,487	4,430	1,057
60-year-olds and older	**788**	**630**	**158**	**833**	**655**	**178**	**852**	**670**	**182**	**876**	**687**	**189**	**1,005**	**782**	**223**	**1,160**	**901**	**259**	**1,280**	**997**	**283**	**1,324**	**1,041**	**283**	**1,358**	**1,075**	**283**	**1,385**	**1,089**	**296**
60- to 64-year-olds	256	186	70	286	197	89	278	199	79	292	209	83	349	266	83	420	318	102	421	331	90	335	269	66	287	236	51	299	227	72
65-year-olds and older	**532**	**444**	**88**	**547**	**458**	**89**	**574**	**471**	**103**	**584**	**478**	**106**	**656**	**516**	**140**	**740**	**583**	**157**	**859**	**666**	**193**	**989**	**772**	**217**	**1,071**	**839**	**232**	**1,086**	**862**	**224**
65- to 69-year-olds	206	156	50	210	165	45	207	162	45	215	168	47	238	170	68	270	206	64	334	260	74	379	300	79	359	287	72	302	253	49
70-year-olds and older	**326**	**288**	**38**	**337**	**293**	**44**	**367**	**309**	**58**	**369**	**310**	**59**	**418**	**346**	**72**	**470**	**377**	**93**	**525**	**406**	**119**	**610**	**472**	**138**	**712**	**552**	**160**	**784**	**609**	**175**
70- to 74-year-olds	145	119	26	143	117	26	167	130	37	161	129	32	173	134	39	173	137	36	194	147	47	243	193	50	297	240	57	320	257	63
75- to 79-year-olds	91	82	x	99	86	13	106	92	14	106	86	20	113	94	19	139	106	33	137	103	34	154	114	40	178	132	46	209	165	44
80- to 84-year-olds	46	44	x	53	49	x	48	42	x	53	48	x	69	59	x	84	68	16	107	79	28	113	80	33	110	82	28	113	81	32
85- to 89-year-olds	25	25	x	20	20	x	25	25	x	26	25	x	35	32	x	45	40	x	51	43	x	58	47	11	70	50	20	77	53	24
90- to 94-year-olds	17	16	x	19	18	x	17	16	x	16	15	x	14	14	x	15	13	x	21	20	x	19	17	x	29	24	x	38	29	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	14	13	x	14	13	x	15	14	x	23	21	x	28	24	x	27	24	x
Dehcho Health & Social Services Authority																														
Total Ages	**3,483**	**2,939**	**544**	**3,482**	**2,939**	**543**	**3,486**	**2,947**	**539**	**3,490**	**2,953**	**537**	**3,502**	**2,973**	**529**	**3,494**	**2,977**	**517**	**3,490**	**2,980**	**510**	**3,481**	**2,976**	**505**	**3,463**	**2,959**	**504**	**3,452**	**2,938**	**514**
0- to 59-year-olds	3,014	2,554	460	2,987	2,539	448	2,964	2,524	440	2,939	2,510	429	2,877	2,481	396	2,797	2,428	369	2,721	2,368	353	2,635	2,295	340	2,569	2,232	337	2,548	2,196	352
60-year-olds and older	**469**	**385**	**84**	**495**	**400**	**95**	**522**	**423**	**99**	**551**	**443**	**108**	**625**	**492**	**133**	**697**	**549**	**148**	**769**	**612**	**157**	**846**	**681**	**165**	**894**	**727**	**167**	**904**	**742**	**162**
60- to 64-year-olds	171	123	48	186	133	53	192	137	55	213	154	59	204	150	54	216	163	53	234	188	46	237	211	26	231	198	33	194	172	22
65-year-olds and older	**298**	**262**	**36**	**309**	**267**	**42**	**330**	**286**	**44**	**338**	**289**	**49**	**421**	**342**	**79**	**481**	**386**	**95**	**535**	**424**	**111**	**609**	**470**	**139**	**663**	**529**	**134**	**710**	**570**	**140**
65- to 69-year-olds	118	98	20	123	100	23	129	106	23	126	101	25	163	119	44	185	141	44	171	136	35	203	159	44	197	174	23	210	187	23
70-year-olds and older	**180**	**164**	**16**	**186**	**167**	**19**	**201**	**180**	**21**	**212**	**188**	**24**	**258**	**223**	**35**	**296**	**245**	**51**	**364**	**288**	**76**	**406**	**311**	**95**	**466**	**355**	**111**	**500**	**383**	**117**
70- to 74-year-olds	75	68	x	70	63	x	85	76	x	95	83	12	107	89	18	120	90	30	152	109	43	156	123	33	164	125	39	175	140	35
75- to 79-year-olds	39	36	x	51	46	x	51	46	x	48	44	x	63	55	x	81	70	11	91	72	19	116	80	36	143	106	37	134	102	32
80- to 84-year-olds	39	37	x	34	32	x	27	25	x	30	28	x	44	40	x	51	45	x	63	56	x	66	51	15	77	60	17	94	68	26
85- to 89-year-olds	17	16	x	22	20	x	25	23	x	26	23	x	24	23	x	18	17	x	32	27	x	39	32	x	44	33	11	50	36	14
90- to 94-year-olds	x	x	x	x	x	x	13	x	x	11	x	x	15	14	x	19	19	x	x	x	x	12	x	x	18	15	x	24	18	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17	15	x	17	15	x	20	16	x	23	19	x

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal
Fort Smith Health & Social Services Authority																														
Total Ages	**2,536**	**1,509**	**1,027**	**2,537**	**1,518**	**1,019**	**2,538**	**1,528**	**1,010**	**2,538**	**1,536**	**1,002**	**2,544**	**1,557**	**987**	**2,554**	**1,571**	**983**	**2,562**	**1,582**	**980**	**2,581**	**1,590**	**991**	**2,585**	**1,583**	**1,002**	**2,598**	**1,582**	**1,016**
0- to 59-year-olds	2,149	1,313	836	2,138	1,315	823	2,128	1,318	810	2,108	1,314	794	2,061	1,303	758	2,020	1,282	738	2,006	1,275	731	1,996	1,250	746	1,988	1,227	761	2,011	1,224	787
60-year-olds and older	**387**	**196**	**191**	**399**	**203**	**196**	**410**	**210**	**200**	**430**	**222**	**208**	**483**	**254**	**229**	**534**	**289**	**245**	**556**	**307**	**249**	**585**	**340**	**245**	**597**	**356**	**241**	**587**	**358**	**229**
60- to 64-year-olds	120	61	59	108	59	49	110	57	53	120	61	59	156	81	75	168	95	73	148	87	61	143	93	50	124	82	42	117	80	37
65-year-olds and older	**267**	**135**	**132**	**291**	**144**	**147**	**300**	**153**	**147**	**310**	**161**	**149**	**327**	**173**	**154**	**366**	**194**	**172**	**408**	**220**	**188**	**442**	**247**	**195**	**473**	**274**	**199**	**470**	**278**	**192**
65- to 69-year-olds	108	54	54	121	58	63	123	65	58	124	70	54	98	58	40	118	68	50	143	83	60	148	91	57	149	97	52	124	88	36
70-year-olds and older	**159**	**81**	**78**	**170**	**86**	**84**	**177**	**88**	**89**	**186**	**91**	**95**	**229**	**115**	**114**	**248**	**126**	**122**	**265**	**137**	**128**	**294**	**156**	**138**	**324**	**177**	**147**	**346**	**190**	**156**
70- to 74-year-olds	54	27	27	61	32	29	70	37	33	77	38	39	98	50	48	92	55	37	81	49	32	108	66	42	123	76	47	129	79	50
75- to 79-year-olds	54	28	26	49	23	26	40	18	22	39	18	21	57	29	28	79	35	44	93	47	46	80	47	33	74	42	32	88	50	38
80- to 84-year-olds	28	11	17	36	16	20	41	21	20	46	25	21	34	16	18	30	17	13	43	22	21	58	27	31	67	38	29	59	34	25
85- to 89-year-olds	20	13	x	19	11	x	21	x	12	15	x	12	28	12	16	27	11	16	24	12	12	22	x	12	33	13	20	41	17	24
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	13	x	x	17	x	13	16	x	13	12	x	x	13	x	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15	x	x	16	x	11
Hay River Health & Social Services Authority																														
Total Ages	**3,879**	**1,755**	**2,124**	**3,861**	**1,752**	**2,109**	**3,850**	**1,753**	**2,097**	**3,840**	**1,755**	**2,085**	**3,809**	**1,758**	**2,051**	**3,790**	**1,764**	**2,026**	**3,763**	**1,758**	**2,005**	**3,734**	**1,737**	**1,997**	**3,741**	**1,725**	**2,016**	**3,753**	**1,709**	**2,044**
0- to 59-year-olds	3,271	1,529	1,742	3,221	1,513	1,708	3,195	1,504	1,691	3,138	1,490	1,648	3,022	1,464	1,558	2,897	1,422	1,475	2,811	1,386	1,425	2,773	1,345	1,428	2,788	1,323	1,465	2,797	1,301	1,496
60-year-olds and older	**608**	**226**	**382**	**640**	**239**	**401**	**655**	**249**	**406**	**702**	**265**	**437**	**787**	**294**	**493**	**893**	**342**	**551**	**952**	**372**	**580**	**961**	**392**	**569**	**953**	**402**	**551**	**956**	**408**	**548**
60- to 64-year-olds	227	81	146	247	88	159	234	88	146	276	102	174	282	103	179	301	111	190	274	108	166	216	101	115	171	91	80	169	89	80
65-year-olds and older	**381**	**145**	**236**	**393**	**151**	**242**	**421**	**161**	**260**	**426**	**163**	**263**	**505**	**191**	**314**	**592**	**231**	**361**	**678**	**264**	**414**	**745**	**291**	**454**	**782**	**311**	**471**	**787**	**319**	**468**
65- to 69-year-olds	149	51	98	145	50	95	151	53	98	139	54	85	190	76	114	220	93	127	249	102	147	250	106	144	214	98	116	190	98	92
70-year-olds and older	**232**	**94**	**138**	**248**	**101**	**147**	**270**	**108**	**162**	**287**	**109**	**178**	**315**	**115**	**200**	**372**	**138**	**234**	**429**	**162**	**267**	**495**	**185**	**310**	**568**	**213**	**355**	**597**	**221**	**376**
70- to 74-year-olds	95	43	52	105	46	59	117	49	68	127	49	78	119	41	78	141	57	84	163	73	90	185	78	107	218	91	127	209	88	121
75- to 79-year-olds	60	21	39	62	25	37	71	30	41	71	29	42	88	38	50	113	41	72	111	37	74	133	55	78	162	62	100	164	63	101
80- to 84-year-olds	42	16	26	47	16	31	45	14	31	44	14	30	53	19	34	61	25	36	79	31	48	89	29	60	83	33	50	109	41	68
85- to 89-year-olds	17	x	x	14	x	x	14	x	x	23	x	15	34	x	25	26	x	20	38	12	26	41	15	26	55	17	38	57	17	40
90- to 94-year-olds	12	x	x	13	x	x	15	x	x	15	x	x	x	x	x	14	x	x	22	x	16	22	x	18	23	x	16	24	x	16
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	12	x	x	17	x	13	16	x	13	25	x	21	27	x	24	34	x	30
Sahtu Health & Social Services Authority																														
Total Ages	**2,560**	**1,919**	**641**	**2,560**	**1,920**	**640**	**2,565**	**1,926**	**639**	**2,564**	**1,928**	**636**	**2,564**	**1,935**	**629**	**2,557**	**1,942**	**615**	**2,550**	**1,941**	**609**	**2,550**	**1,943**	**607**	**2,552**	**1,939**	**613**	**2,560**	**1,939**	**621**
0- to 59-year-olds	2,258	1,691	567	2,251	1,691	560	2,227	1,680	547	2,221	1,681	540	2,173	1,663	510	2,096	1,624	472	2,074	1,610	464	2,066	1,603	463	2,045	1,594	451	2,039	1,580	459
60-year-olds and older	**302**	**228**	**74**	**309**	**229**	**80**	**338**	**246**	**92**	**343**	**247**	**96**	**391**	**272**	**119**	**461**	**318**	**143**	**476**	**331**	**145**	**484**	**340**	**144**	**507**	**345**	**162**	**521**	**359**	**162**
60- to 64-year-olds	107	73	34	105	68	37	110	75	35	102	68	34	136	82	54	168	108	60	132	90	42	101	77	24	119	83	36	120	85	35
65-year-olds and older	**195**	**155**	**40**	**204**	**161**	**43**	**228**	**171**	**57**	**241**	**179**	**62**	**255**	**190**	**65**	**293**	**210**	**83**	**344**	**241**	**103**	**383**	**263**	**120**	**388**	**262**	**126**	**401**	**274**	**127**
65- to 69-year-olds	69	49	20	71	51	20	86	56	30	94	62	32	82	59	23	90	61	29	115	75	40	135	90	45	100	70	30	93	69	24
70-year-olds and older	**126**	**106**	**20**	**133**	**110**	**23**	**142**	**115**	**27**	**147**	**117**	**30**	**173**	**131**	**42**	**203**	**149**	**54**	**229**	**166**	**63**	**248**	**173**	**75**	**288**	**192**	**96**	**308**	**205**	**103**
70- to 74-year-olds	50	41	x	55	43	12	59	43	16	56	42	14	66	48	18	77	54	23	79	59	20	90	59	31	117	76	41	117	76	41
75- to 79-year-olds	40	35	x	42	38	x	42	41	x	41	37	x	47	35	12	52	38	14	69	47	22	75	52	23	67	45	22	75	46	29
80- to 84-year-olds	23	20	x	24	20	x	25	18	x	29	22	x	33	28	x	33	28	x	41	27	14	36	26	x	58	38	20	67	49	18
85- to 89-year-olds	x	x	x	x	x	x	x	x	x	12	11	x	17	14	x	21	16	x	21	21	x	24	19	x	24	19	x	23	15	x
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	11	x	x	12	x	x	15	12	x	x	x	x	11	x	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	14	x	x	15	x	x

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal	Total	Aboriginal	Non-aboriginal
Tłı̨chǫ Community Services Agency																														
Total Ages	**2,974**	**2,808**	**166**	**2,978**	**2,814**	**164**	**2,983**	**2,818**	**165**	**2,987**	**2,821**	**166**	**3,004**	**2,838**	**166**	**3,024**	**2,859**	**165**	**3,041**	**2,878**	**163**	**3,056**	**2,893**	**163**	**3,074**	**2,908**	**166**	**3,084**	**2,913**	**171**
0- to 59-year-olds	2,708	2,561	147	2,705	2,560	145	2,700	2,556	144	2,691	2,547	144	2,668	2,534	134	2,649	2,519	130	2,640	2,511	129	2,630	2,497	133	2,613	2,477	136	2,598	2,463	135
60-year-olds and older	**266**	**247**	**19**	**273**	**254**	**19**	**283**	**262**	**21**	**296**	**274**	**22**	**336**	**304**	**32**	**375**	**340**	**35**	**401**	**367**	**34**	**426**	**396**	**30**	**461**	**431**	**30**	**486**	**450**	**36**
60- to 64-year-olds	84	78	x	89	83	x	96	89	x	106	97	x	119	103	16	134	121	13	113	109	x	116	113	x	139	136	x	136	130	x
65-year-olds and older	**182**	**169**	**13**	**184**	**171**	**13**	**187**	**173**	**14**	**190**	**177**	**13**	**217**	**201**	**16**	**241**	**219**	**22**	**288**	**258**	**30**	**310**	**283**	**27**	**322**	**295**	**27**	**350**	**320**	**30**
65- to 69-year-olds	54	50	x	60	56	x	60	56	x	64	61	x	77	73	x	85	79	x	114	102	12	119	112	x	93	90	x	110	106	x
70-year-olds and older	**128**	**119**	**x**	**124**	**115**	**x**	**127**	**117**	**x**	**126**	**116**	**x**	**140**	**128**	**12**	**156**	**140**	**16**	**174**	**156**	**18**	**191**	**171**	**20**	**229**	**205**	**24**	**240**	**214**	**26**
70- to 74-year-olds	53	46	x	44	38	x	45	38	x	43	37	x	55	53	x	61	57	x	66	63	x	74	67	x	97	90	x	100	94	x
75- to 79-year-olds	31	31	x	36	35	x	39	38	x	34	32	x	36	29	x	44	38	x	48	45	x	52	51	x	64	59	x	59	51	x
80- to 84-year-olds	25	24	x	22	21	x	21	20	x	26	25	x	25	24	x	28	24	x	31	22	x	26	25	x	30	28	x	40	39	x
85- to 89-year-olds	x	x	x	12	11	x	12	12	x	12	12	x	12	11	x	x	x	x	16	15	x	24	15	x	21	14	x	14	13	x
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	19	11	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Yellowknife Health & Social Services Authority																														
Total Ages	**21,293**	**5,974**	**15,319**	**21,355**	**6,004**	**15,351**	**21,413**	**6,036**	**15,377**	**21,473**	**6,068**	**15,405**	**21,633**	**6,142**	**15,491**	**21,789**	**6,198**	**15,591**	**21,954**	**6,242**	**15,712**	**22,148**	**6,269**	**15,879**	**22,435**	**6,282**	**16,153**	**22,693**	**6,277**	**16,416**
0- to 59-year-olds	19,306	5,495	13,811	19,216	5,487	13,729	19,130	5,480	13,650	19,053	5,479	13,574	18,627	5,381	13,246	18,248	5,292	12,956	18,021	5,205	12,816	18,069	5,129	12,940	18,156	5,080	13,076	18,323	5,066	13,257
60-year-olds and older	**1,987**	**479**	**1,508**	**2,139**	**517**	**1,622**	**2,283**	**556**	**1,727**	**2,420**	**589**	**1,831**	**3,006**	**761**	**2,245**	**3,541**	**906**	**2,635**	**3,933**	**1,037**	**2,896**	**4,079**	**1,140**	**2,939**	**4,279**	**1,202**	**3,077**	**4,370**	**1,211**	**3,159**
60- to 64-year-olds	963	196	767	1,003	207	796	1,030	222	808	1,068	236	832	1,308	320	988	1,444	357	1,087	1,344	343	1,001	1,086	335	751	1,064	308	756	1,064	270	794
65-year-olds and older	**1,024**	**283**	**741**	**1,136**	**310**	**826**	**1,253**	**334**	**919**	**1,352**	**353**	**999**	**1,698**	**441**	**1,257**	**2,097**	**549**	**1,548**	**2,589**	**694**	**1,895**	**2,993**	**805**	**2,188**	**3,215**	**894**	**2,321**	**3,306**	**941**	**2,365**
65- to 69-year-olds	488	126	362	558	144	414	637	162	475	688	169	519	780	194	586	886	228	658	1,093	311	782	1,136	327	809	997	327	670	874	307	567
70-year-olds and older	**536**	**157**	**379**	**578**	**166**	**412**	**616**	**172**	**444**	**664**	**184**	**480**	**918**	**247**	**671**	**1,211**	**321**	**890**	**1,496**	**383**	**1,113**	**1,857**	**478**	**1,379**	**2,218**	**567**	**1,651**	**2,432**	**634**	**1,798**
70- to 74-year-olds	233	70	163	255	73	182	268	77	191	293	85	208	454	125	329	614	159	455	663	177	486	799	229	570	933	270	663	946	282	664
75- to 79-year-olds	154	45	109	154	42	112	169	45	124	181	48	133	216	56	160	306	83	223	462	113	349	555	129	426	615	152	463	708	191	517
80- to 84-year-olds	87	27	60	93	30	63	98	30	68	98	27	71	129	35	94	148	39	109	193	52	141	283	74	209	390	84	306	431	95	336
85- to 89-year-olds	46	11	35	55	16	39	57	15	42	62	18	44	69	21	48	82	25	57	97	19	78	113	26	87	147	40	107	198	43	155
90- to 94-year-olds	11	x	x	16	x	12	18	x	14	24	x	19	38	x	30	36	x	27	46	15	31	64	14	50	71	x	61	71	11	60
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	12	x	x	25	x	19	35	x	28	43	x	37	62	11	51	78	12	66

Notes:

1. Source: NWT Bureau of Statistics
2. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
3. Fort Smith HSSA includes Fort Smith
4. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise and Region 5 Unorganized
5. Deh Cho HSSA includes Fort Liard, Fort Providence, Fort Simpson, Jean Marie River, Kakisa, Trout Lake, Nahanni Butte, Wrigley & Region 4 Unorganized
6. Tlicho HSSA includes Behchoko, Wha Ti, Wekweti & Gameti
7. Beaufort-Delta HSSA includes Aklavik, Fort McPherson, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, Tsiigehtchic & Region 1 Unorganized
8. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita
9. Cells with values of 10 or less are suppressed, but the information is included in the totals
10. * Population estimates

Table C-2: Population Projections by Health Region, Sex and Age Group, NWT, 2014-2034

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Northwest Territories																														
Total Ages	**43,623**	**22,208**	**21,415**	**43,687**	**22,204**	**21,483**	**43,760**	**22,214**	**21,546**	**43,830**	**22,222**	**21,608**	**44,005**	**22,217**	**21,788**	**44,156**	**22,242**	**21,914**	**44,294**	**22,240**	**22,054**	**44,450**	**22,271**	**22,179**	**44,729**	**22,344**	**22,385**	**45,012**	**22,424**	**22,588**
0- to 59-year-olds	38,816	19,752	19,064	38,599	19,601	18,998	38,417	19,469	18,948	38,212	19,335	18,877	37,372	18,839	18,533	36,495	18,390	18,105	35,927	18,108	17,819	35,745	18,057	17,688	35,680	17,987	17,693	35,803	18,053	17,750
60-year-olds and older	**4,807**	**2,456**	**2,351**	**5,088**	**2,603**	**2,485**	**5,343**	**2,745**	**2,598**	**5,618**	**2,887**	**2,731**	**6,633**	**3,378**	**3,255**	**7,661**	**3,852**	**3,809**	**8,367**	**4,132**	**4,235**	**8,705**	**4,214**	**4,491**	**9,049**	**4,357**	**4,692**	**9,209**	**4,371**	**4,838**
60- to 64-year-olds	1,928	1,029	899	2,024	1,100	924	2,050	1,125	925	2,177	1,201	976	2,554	1,371	1,183	2,851	1,465	1,386	2,666	1,331	1,335	2,234	1,102	1,132	2,135	1,091	1,044	2,099	1,047	1,052
65-year-olds and older	**2,879**	**1,427**	**1,452**	**3,064**	**1,503**	**1,561**	**3,293**	**1,620**	**1,673**	**3,441**	**1,686**	**1,755**	**4,079**	**2,007**	**2,072**	**4,810**	**2,387**	**2,423**	**5,701**	**2,801**	**2,900**	**6,471**	**3,112**	**3,359**	**6,914**	**3,266**	**3,648**	**7,110**	**3,324**	**3,786**
65- to 69-year-olds	1,192	646	546	1,288	668	620	1,393	706	687	1,450	734	716	1,628	865	763	1,854	993	861	2,219	1,156	1,063	2,370	1,178	1,192	2,109	1,025	1,084	1,903	924	979
70-year-olds and older	**1,687**	**781**	**906**	**1,776**	**835**	**941**	**1,900**	**914**	**986**	**1,991**	**952**	**1,039**	**2,451**	**1,142**	**1,309**	**2,956**	**1,394**	**1,562**	**3,482**	**1,645**	**1,837**	**4,101**	**1,934**	**2,167**	**4,805**	**2,241**	**2,564**	**5,207**	**2,400**	**2,807**
70- to 74-year-olds	705	352	353	733	380	353	811	439	372	852	461	391	1,072	530	542	1,278	619	659	1,398	713	685	1,655	836	819	1,949	946	1,003	1,996	944	1,052
75- to 79-year-olds	469	211	258	493	224	269	518	236	282	520	232	288	620	307	313	814	431	383	1,011	469	542	1,165	543	622	1,303	635	668	1,437	681	756
80- to 84-year-olds	290	139	151	309	143	166	305	138	167	326	143	183	387	166	221	435	183	252	557	277	280	671	324	347	815	361	454	913	425	488
85- to 89-year-olds	140	49	91	148	58	90	164	65	99	176	73	103	219	90	129	229	93	136	279	106	173	321	131	190	394	185	209	460	207	253
90- to 94-year-olds	62	23	39	69	24	45	76	27	49	87	33	54	98	29	69	116	44	72	134	49	85	154	57	97	168	60	108	200	78	122
95-year-olds and older	21	x	14	24	x	18	26	x	17	30	x	20	55	20	35	84	24	60	103	31	72	135	43	92	176	54	122	201	65	136
Beaufort Delta Health & Social Services Authority																														
Total Ages	**6,898**	**3,472**	**3,426**	**6,914**	**3,473**	**3,441**	**6,925**	**3,475**	**3,450**	**6,938**	**3,477**	**3,461**	**6,949**	**3,454**	**3,495**	**6,948**	**3,444**	**3,504**	**6,934**	**3,426**	**3,508**	**6,900**	**3,390**	**3,510**	**6,879**	**3,365**	**3,514**	**6,872**	**3,355**	**3,517**
0- to 59-year-olds	6,110	3,084	3,026	6,081	3,060	3,021	6,073	3,054	3,019	6,062	3,052	3,010	5,944	2,962	2,982	5,788	2,876	2,912	5,654	2,805	2,849	5,576	2,752	2,824	5,521	2,719	2,802	5,487	2,704	2,783
60-year-olds and older	**788**	**388**	**400**	**833**	**413**	**420**	**852**	**421**	**431**	**876**	**425**	**451**	**1,005**	**492**	**513**	**1,160**	**568**	**592**	**1,280**	**621**	**659**	**1,324**	**638**	**686**	**1,358**	**646**	**712**	**1,385**	**651**	**734**
60- to 64-year-olds	256	125	131	286	148	138	278	142	136	292	141	151	349	180	169	420	224	196	421	214	207	335	175	160	287	141	146	299	151	148
65-year-olds and older	**532**	**263**	**269**	**547**	**265**	**282**	**574**	**279**	**295**	**584**	**284**	**300**	**656**	**312**	**344**	**740**	**344**	**396**	**859**	**407**	**452**	**989**	**463**	**526**	**1,071**	**505**	**566**	**1,086**	**500**	**586**
65- to 69-year-olds	206	112	94	210	110	100	207	102	105	215	105	110	238	125	113	270	131	139	334	171	163	379	188	191	359	186	173	302	152	150
70-year-olds and older	**326**	**151**	**175**	**337**	**155**	**182**	**367**	**177**	**190**	**369**	**179**	**190**	**418**	**187**	**231**	**470**	**213**	**257**	**525**	**236**	**289**	**610**	**275**	**335**	**712**	**319**	**393**	**784**	**348**	**436**
70- to 74-year-olds	145	74	71	143	71	72	167	90	77	161	88	73	173	82	91	173	78	95	194	90	104	243	113	130	297	144	153	320	154	166
75- to 79-year-olds	91	43	48	99	45	54	106	47	59	106	46	60	113	51	62	139	75	64	137	62	75	154	66	88	178	69	109	209	84	125
80- to 84-year-olds	46	18	28	53	24	29	48	23	25	53	28	25	69	30	39	84	35	49	107	52	55	113	56	57	110	46	64	113	48	65
85- to 89-year-olds	25	x	17	20	x	13	25	x	16	26	x	17	35	15	20	45	14	31	51	18	33	58	25	33	70	40	30	77	39	38
90- to 94-year-olds	17	x	x	19	x	12	17	x	11	16	x	11	14	x	x	15	x	x	21	x	13	19	x	11	29	12	17	38	14	24
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	14	x	x	14	x	x	15	x	x	23	x	16	28	x	20	27	x	18
Dehcho Health & Social Services Authority																														
Total Ages	**3,483**	**1,812**	**1,671**	**3,482**	**1,811**	**1,671**	**3,486**	**1,812**	**1,674**	**3,490**	**1,813**	**1,677**	**3,502**	**1,812**	**1,690**	**3,494**	**1,801**	**1,693**	**3,490**	**1,792**	**1,698**	**3,481**	**1,777**	**1,704**	**3,463**	**1,754**	**1,709**	**3,452**	**1,734**	**1,718**
0- to 59-year-olds	3,014	1,578	1,436	2,987	1,564	1,423	2,964	1,546	1,418	2,939	1,528	1,411	2,877	1,496	1,381	2,797	1,447	1,350	2,721	1,410	1,311	2,635	1,353	1,282	2,569	1,307	1,262	2,548	1,290	1,258
60-year-olds and older	**469**	**234**	**235**	**495**	**247**	**248**	**522**	**266**	**256**	**551**	**285**	**266**	**625**	**316**	**309**	**697**	**354**	**343**	**769**	**382**	**387**	**846**	**424**	**422**	**894**	**447**	**447**	**904**	**444**	**460**
60- to 64-year-olds	171	91	80	186	95	91	192	101	91	213	117	96	204	109	95	216	113	103	234	118	116	237	119	118	231	120	111	194	90	104
65-year-olds and older	**298**	**143**	**155**	**309**	**152**	**157**	**330**	**165**	**165**	**338**	**168**	**170**	**421**	**207**	**214**	**481**	**241**	**240**	**535**	**264**	**271**	**609**	**305**	**304**	**663**	**327**	**336**	**710**	**354**	**356**
65- to 69-year-olds	118	56	62	123	63	60	129	65	64	126	62	64	163	83	80	185	96	89	171	90	81	203	115	88	197	99	98	210	107	103
70-year-olds and older	**180**	**87**	**93**	**186**	**89**	**97**	**201**	**100**	**101**	**212**	**106**	**106**	**258**	**124**	**134**	**296**	**145**	**151**	**364**	**174**	**190**	**406**	**190**	**216**	**466**	**228**	**238**	**500**	**247**	**253**
70- to 74-year-olds	75	38	37	70	35	35	85	45	40	95	53	42	107	52	55	120	61	59	152	75	77	156	78	78	164	86	78	175	93	82
75- to 79-year-olds	39	23	16	51	26	25	51	28	23	48	26	22	63	32	31	81	40	41	91	41	50	116	55	61	143	74	69	134	68	66
80- to 84-year-olds	39	17	22	34	17	17	27	13	14	30	12	18	44	22	22	51	26	25	63	31	32	66	27	39	77	35	42	94	46	48
85- to 89-year-olds	17	x	14	22	x	16	25	x	17	26	x	17	24	x	14	18	x	x	32	17	15	39	17	22	44	16	28	50	19	31
90- to 94-year-olds	x	x	x	x	x	x	13	x	x	11	x	x	15	x	11	19	x	14	x	x	x	12	x	x	18	x	x	24	x	14
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	17	x	11	17	x	12	20	x	12	23	11	12

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Fort Smith Health & Social Services Authority																														
Total Ages	**2,536**	**1,292**	**1,244**	**2,537**	**1,286**	**1,251**	**2,538**	**1,291**	**1,247**	**2,538**	**1,287**	**1,251**	**2,544**	**1,279**	**1,265**	**2,554**	**1,282**	**1,272**	**2,562**	**1,289**	**1,273**	**2,581**	**1,299**	**1,282**	**2,585**	**1,301**	**1,284**	**2,598**	**1,304**	**1,294**
0- to 59-year-olds	2,149	1,097	1,052	2,138	1,088	1,050	2,128	1,085	1,043	2,108	1,076	1,032	2,061	1,038	1,023	2,020	1,023	997	2,006	1,026	980	1,996	1,023	973	1,988	1,023	965	2,011	1,034	977
60-year-olds and older	**387**	**195**	**192**	**399**	**198**	**201**	**410**	**206**	**204**	**430**	**211**	**219**	**483**	**241**	**242**	**534**	**259**	**275**	**556**	**263**	**293**	**585**	**276**	**309**	**597**	**278**	**319**	**587**	**270**	**317**
60- to 64-year-olds	120	63	57	108	59	49	110	67	43	120	69	51	156	87	69	168	78	90	148	70	78	143	75	68	124	60	64	117	55	62
65-year-olds and older	**267**	**132**	**135**	**291**	**139**	**152**	**300**	**139**	**161**	**310**	**142**	**168**	**327**	**154**	**173**	**366**	**181**	**185**	**408**	**193**	**215**	**442**	**201**	**241**	**473**	**218**	**255**	**470**	**215**	**255**
65- to 69-year-olds	108	52	56	121	52	69	123	52	71	124	56	68	98	52	46	118	71	47	143	73	70	148	67	81	149	73	76	124	64	60
70-year-olds and older	**159**	**80**	**79**	**170**	**87**	**83**	**177**	**87**	**90**	**186**	**86**	**100**	**229**	**102**	**127**	**248**	**110**	**138**	**265**	**120**	**145**	**294**	**134**	**160**	**324**	**145**	**179**	**346**	**151**	**195**
70- to 74-year-olds	54	24	30	61	31	30	70	34	36	77	36	41	98	38	60	92	34	58	81	46	35	108	60	48	123	59	64	129	57	72
75- to 79-year-olds	54	28	26	49	26	23	40	18	22	39	16	23	57	28	29	79	38	41	93	34	59	80	31	49	74	38	36	88	41	47
80- to 84-year-olds	28	17	11	36	18	18	41	20	21	46	20	26	34	18	16	30	14	16	43	20	23	58	24	34	67	24	43	59	26	33
85- to 89-year-olds	20	x	x	19	x	x	21	12	x	15	x	x	28	13	15	27	14	13	24	x	14	22	x	14	33	13	20	41	16	25
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	13	x	x	17	x	x	16	x	x	12	x	x	13	x	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	15	x	x	16	x	x
Hay River Health & Social Services Authority																														
Total Ages	**3,879**	**2,009**	**1,870**	**3,861**	**1,996**	**1,865**	**3,850**	**1,987**	**1,863**	**3,840**	**1,981**	**1,859**	**3,809**	**1,948**	**1,861**	**3,790**	**1,930**	**1,860**	**3,763**	**1,916**	**1,847**	**3,734**	**1,897**	**1,837**	**3,741**	**1,888**	**1,853**	**3,753**	**1,886**	**1,867**
0- to 59-year-olds	3,271	1,692	1,579	3,221	1,662	1,559	3,195	1,652	1,543	3,138	1,620	1,518	3,022	1,552	1,470	2,897	1,483	1,414	2,811	1,460	1,351	2,773	1,451	1,322	2,788	1,453	1,335	2,797	1,453	1,344
60-year-olds and older	**608**	**317**	**291**	**640**	**334**	**306**	**655**	**335**	**320**	**702**	**361**	**341**	**787**	**396**	**391**	**893**	**447**	**446**	**952**	**456**	**496**	**961**	**446**	**515**	**953**	**435**	**518**	**956**	**433**	**523**
60- to 64-year-olds	227	135	92	247	147	100	234	133	101	276	155	121	282	148	134	301	160	141	274	127	147	216	93	123	171	79	92	169	85	84
65-year-olds and older	**381**	**182**	**199**	**393**	**187**	**206**	**421**	**202**	**219**	**426**	**206**	**220**	**505**	**248**	**257**	**592**	**287**	**305**	**678**	**329**	**349**	**745**	**353**	**392**	**782**	**356**	**426**	**787**	**348**	**439**
65- to 69-year-olds	149	82	67	145	79	66	151	81	70	139	76	63	190	105	85	220	116	104	249	131	118	250	118	132	214	91	123	190	78	112
70-year-olds and older	**232**	**100**	**132**	**248**	**108**	**140**	**270**	**121**	**149**	**287**	**130**	**157**	**315**	**143**	**172**	**372**	**171**	**201**	**429**	**198**	**231**	**495**	**235**	**260**	**568**	**265**	**303**	**597**	**270**	**327**
70- to 74-year-olds	95	36	59	105	42	63	117	52	65	127	60	67	119	63	56	141	74	67	163	82	81	185	93	92	218	105	113	209	89	120
75- to 79-year-olds	60	26	34	62	30	32	71	35	36	71	30	41	88	34	54	113	58	55	111	57	54	133	70	63	162	81	81	164	79	85
80- to 84-year-olds	42	24	18	47	23	24	45	20	25	44	22	22	53	27	26	61	18	43	79	34	45	89	46	43	83	39	44	109	59	50
85- to 89-year-olds	17	x	x	14	x	x	14	x	x	23	11	12	34	13	21	26	15	11	38	14	24	41	x	32	55	24	31	57	25	32
90- to 94-year-olds	12	x	x	13	x	11	15	x	x	15	x	x	x	x	x	14	x	x	22	x	15	22	x	13	23	x	17	24	x	17
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	12	x	x	17	x	15	16	x	12	25	x	17	27	x	17	34	11	23
Sahtu Health & Social Services Authority																														
Total Ages	**2,560**	**1,340**	**1,220**	**2,560**	**1,341**	**1,219**	**2,565**	**1,339**	**1,226**	**2,564**	**1,332**	**1,232**	**2,564**	**1,330**	**1,234**	**2,557**	**1,324**	**1,233**	**2,550**	**1,309**	**1,241**	**2,550**	**1,299**	**1,251**	**2,552**	**1,291**	**1,261**	**2,560**	**1,285**	**1,275**
0- to 59-year-olds	2,258	1,177	1,081	2,251	1,174	1,077	2,227	1,157	1,070	2,221	1,154	1,067	2,173	1,130	1,043	2,096	1,084	1,012	2,074	1,070	1,004	2,066	1,065	1,001	2,045	1,042	1,003	2,039	1,043	996
60-year-olds and older	**302**	**163**	**139**	**309**	**167**	**142**	**338**	**182**	**156**	**343**	**178**	**165**	**391**	**200**	**191**	**461**	**240**	**221**	**476**	**239**	**237**	**484**	**234**	**250**	**507**	**249**	**258**	**521**	**242**	**279**
60- to 64-year-olds	107	54	53	105	50	55	110	56	54	102	51	51	136	68	68	168	90	78	132	67	65	101	51	50	119	72	47	120	61	59
65-year-olds and older	**195**	**109**	**86**	**204**	**117**	**87**	**228**	**126**	**102**	**241**	**127**	**114**	**255**	**132**	**123**	**293**	**150**	**143**	**344**	**172**	**172**	**383**	**183**	**200**	**388**	**177**	**211**	**401**	**181**	**220**
65- to 69-year-olds	69	44	25	71	45	26	86	48	38	94	48	46	82	39	43	90	46	44	115	60	55	135	67	68	100	43	57	93	44	49
70-year-olds and older	**126**	**65**	**61**	**133**	**72**	**61**	**142**	**78**	**64**	**147**	**79**	**68**	**173**	**93**	**80**	**203**	**104**	**99**	**229**	**112**	**117**	**248**	**116**	**132**	**288**	**134**	**154**	**308**	**137**	**171**
70- to 74-year-olds	50	27	23	55	30	25	59	32	27	56	31	25	66	41	25	77	38	39	79	39	40	90	44	46	117	60	57	117	54	63
75- to 79-year-olds	40	21	19	42	23	19	42	25	17	41	23	18	47	24	23	52	31	21	69	37	32	75	32	43	67	28	39	75	32	43
80- to 84-year-olds	23	15	x	24	17	x	25	16	x	29	17	12	33	16	17	33	17	16	41	19	22	36	20	16	58	28	30	67	32	35
85- to 89-year-olds	x	x	x	x	x	x	x	x	x	12	x	x	17	12	x	21	11	x	21	x	11	24	x	14	24	11	13	23	x	13
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	11	x	x	12	x	x	15	x	x	x	x	x	11	x	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	14	x	x	15	x	x

	2014*			2015			2016			2017			2020			2023			2026			2029			2032			2034		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
Tłı̨chǫ Community Services Agency																														
Total Ages	**2,974**	**1,511**	**1,463**	**2,978**	**1,516**	**1,462**	**2,983**	**1,517**	**1,466**	**2,987**	**1,519**	**1,468**	**3,004**	**1,524**	**1,480**	**3,024**	**1,537**	**1,487**	**3,041**	**1,547**	**1,494**	**3,056**	**1,547**	**1,509**	**3,074**	**1,547**	**1,527**	**3,084**	**1,543**	**1,541**
0- to 59-year-olds	2,708	1,381	1,327	2,705	1,380	1,325	2,700	1,372	1,328	2,691	1,365	1,326	2,668	1,351	1,317	2,649	1,342	1,307	2,640	1,336	1,304	2,630	1,342	1,288	2,613	1,315	1,298	2,598	1,295	1,303
60-year-olds and older	**266**	**130**	**136**	**273**	**136**	**137**	**283**	**145**	**138**	**296**	**154**	**142**	**336**	**173**	**163**	**375**	**195**	**180**	**401**	**211**	**190**	**426**	**205**	**221**	**461**	**232**	**229**	**486**	**248**	**238**
60- to 64-year-olds	84	42	42	89	49	40	96	57	39	106	63	43	119	66	53	134	69	65	113	65	48	116	58	58	139	76	63	136	80	56
65-year-olds and older	**182**	**88**	**94**	**184**	**87**	**97**	**187**	**88**	**99**	**190**	**91**	**99**	**217**	**107**	**110**	**241**	**126**	**115**	**288**	**146**	**142**	**310**	**147**	**163**	**322**	**156**	**166**	**350**	**168**	**182**
65- to 69-year-olds	54	35	19	60	34	26	60	32	28	64	34	30	77	42	35	85	52	33	114	62	52	119	63	56	93	48	45	110	57	53
70-year-olds and older	**128**	**53**	**75**	**124**	**53**	**71**	**127**	**56**	**71**	**126**	**57**	**69**	**140**	**65**	**75**	**156**	**74**	**82**	**174**	**84**	**90**	**191**	**84**	**107**	**229**	**108**	**121**	**240**	**111**	**129**
70- to 74-year-olds	53	26	27	44	25	19	45	25	20	43	27	16	55	30	25	61	25	36	66	36	30	74	35	39	97	48	49	100	50	50
75- to 79-year-olds	31	11	20	36	12	24	39	16	23	34	13	21	36	20	16	44	30	14	48	22	26	52	22	30	64	31	33	59	28	31
80- to 84-year-olds	25	x	15	22	x	13	21	x	12	26	11	15	25	x	19	28	11	17	31	18	13	26	15	11	30	12	18	40	16	24
85- to 89-year-olds	x	x	x	12	x	x	12	x	x	12	x	x	12	x	x	x	x	x	16	x	12	24	x	14	21	13	x	14	x	x
90- to 94-year-olds	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	19	x	x
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Yellowknife Health & Social Services Authority																														
Total Ages	**21,293**	**10,772**	**10,521**	**21,355**	**10,781**	**10,574**	**21,413**	**10,793**	**10,620**	**21,473**	**10,813**	**10,660**	**21,633**	**10,870**	**10,763**	**21,789**	**10,924**	**10,865**	**21,954**	**10,961**	**10,993**	**22,148**	**11,062**	**11,086**	**22,435**	**11,198**	**11,237**	**22,693**	**11,317**	**11,376**
0- to 59-year-olds	19,306	9,743	9,563	19,216	9,673	9,543	19,130	9,603	9,527	19,053	9,540	9,513	18,627	9,310	9,317	18,248	9,135	9,113	18,021	9,001	9,020	18,069	9,071	8,998	18,156	9,128	9,028	18,323	9,234	9,089
60-year-olds and older	**1,987**	**1,029**	**958**	**2,139**	**1,108**	**1,031**	**2,283**	**1,190**	**1,093**	**2,420**	**1,273**	**1,147**	**3,006**	**1,560**	**1,446**	**3,541**	**1,789**	**1,752**	**3,933**	**1,960**	**1,973**	**4,079**	**1,991**	**2,088**	**4,279**	**2,070**	**2,209**	**4,370**	**2,083**	**2,287**
60- to 64-year-olds	963	519	444	1,003	552	451	1,030	569	461	1,068	605	463	1,308	713	595	1,444	731	713	1,344	670	674	1,086	531	555	1,064	543	521	1,064	525	539
65-year-olds and older	**1,024**	**510**	**514**	**1,136**	**556**	**580**	**1,253**	**621**	**632**	**1,352**	**668**	**684**	**1,698**	**847**	**851**	**2,097**	**1,058**	**1,039**	**2,589**	**1,290**	**1,299**	**2,993**	**1,460**	**1,533**	**3,215**	**1,527**	**1,688**	**3,306**	**1,558**	**1,748**
65- to 69-year-olds	488	265	223	558	285	273	637	326	311	688	353	335	780	419	361	886	481	405	1,093	569	524	1,136	560	576	997	485	512	874	422	452
70-year-olds and older	**536**	**245**	**291**	**578**	**271**	**307**	**616**	**295**	**321**	**664**	**315**	**349**	**918**	**428**	**490**	**1,211**	**577**	**634**	**1,496**	**721**	**775**	**1,857**	**900**	**957**	**2,218**	**1,042**	**1,176**	**2,432**	**1,136**	**1,296**
70- to 74-year-olds	233	127	106	255	146	109	268	161	107	293	166	127	454	224	230	614	309	305	663	345	318	799	413	386	933	444	489	946	447	499
75- to 79-year-olds	154	59	95	154	62	92	169	67	102	181	78	103	216	118	98	306	159	147	462	216	246	555	267	288	615	314	301	708	349	359
80- to 84-year-olds	87	38	49	93	35	58	98	37	61	98	33	65	129	47	82	148	62	86	193	103	90	283	136	147	390	177	213	431	198	233
85- to 89-year-olds	46	16	30	55	22	33	57	23	34	62	25	37	69	22	47	82	26	56	97	33	64	113	52	61	147	68	79	198	92	106
90- to 94-year-olds	11	x	x	16	x	12	18	x	14	24	x	14	38	12	26	36	13	23	46	13	33	64	18	46	71	23	48	71	29	42
95-year-olds and older	x	x	x	x	x	x	x	x	x	x	x	x	12	x	x	25	x	17	35	11	24	43	14	29	62	16	46	78	21	57

Notes:

1. Source: NWT Bureau of Statistics
2. Yellowknife HSSA includes Yellowknife, Detah, N'dilo, Lutselk'e, Fort Resolution, Region 6 Unorganized
3. Fort Smith HSSA includes Fort Smith
4. Hay River HSSA includes Hay River, Hay River Reserve & Enterprise and Region 5 Unorganized
5. Deh Cho HSSA includes Fort Liard, Fort Providence, Fort Simpson, Jean Marie River, Kakisa, Trout Lake, Nahanni Butte, Wrigley & Region 4 Unorganized
6. Tlicho HSSA includes Behchoko, Wha Ti, Wekweti & Gameti
7. Beaufort-Delta HSSA includes Aklavik, Fort McPherson, Ulukhaktok, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk, Tsiigehtchic & Region 1 Unorganized
8. Sahtu HSSA includes Colville Lake, Deline, Fort Good Hope, Norman Wells & Tulita
9. Cells with values of 10 or less are suppressed, but the information is included in the totals
10. * Population estimates

Appendix D: Population Projections and Analysis of Change, Yellowknife Total Population, 2014 to 2034

Table D-1: Population Projections and Analysis of Change, Yellowknife Total Population, 2014-2017 and 2017-2020

Population Cohort	2014		2017		Change Over Period 2014-2017		2020		Change Over Period 2017-2020	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	21,293	100.00	21,473	100.00	180	0.85	21,633	100.00	160	0.75
60 Years+	1,987	9.33	2,420	11.27	433	21.79	3,006	13.90	586	24.21
60 to 64	963	4.52	1,068	4.97	105	10.90	1,308	6.05	240	22.47
65 Years+	1,024	4.81	1,352	6.30	328	32.03	1,698	7.85	346	25.59
65 to 69	488	2.29	688	3.20	200	40.98	780	3.61	92	13.37
70 Years+	536	2.52	664	3.09	128	23.88	918	4.24	254	38.25
70 to 74	233	1.09	293	1.36	60	25.75	454	2.10	161	54.95
75 to 79	154	0.72	181	0.84	27	17.53	216	1.00	35	19.34
80 to 84	87	0.41	98	0.46	11	12.64	129	0.60	31	31.63
85 to 89	46	0.22	62	0.29	16	34.78	69	0.32	7	11.29
90 to 94	11	0.05	24	0.11	13	118.18	38	0.18	14	58.33
95+	0	0.00	0	0.00	0	0.00	12	0.06	12	0.00

Table D-2: Population Projections and Analysis of Change, Yellowknife Total Population, 2020-2023 and 2023-2026

Population Cohort	2020		2023		Change Over Period 2020-2023		2026		Change Over Period 2023-2026	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	21,633	100.00	21,789	100.00	156	0.72	21,954	100.00	165	0.76
60 Years+	3,006	13.90	3,541	16.25	535	17.80	3,933	17.91	392	11.07
60 to 64	1,308	6.05	1,444	6.63	136	10.40	1,344	6.12	-100	-6.93
65 Years+	1,698	7.85	2,097	9.62	399	23.50	2,589	11.79	492	23.46
65 to 69	780	3.61	886	4.07	106	13.59	1,093	4.98	207	23.36
70 Years+	918	4.24	1,211	5.56	293	31.92	1,496	6.81	285	23.53
70 to 74	454	2.10	614	2.82	160	35.24	663	3.02	49	7.98
75 to 79	216	1.00	306	1.40	90	41.67	462	2.10	156	50.98
80 to 84	129	0.60	148	0.68	19	14.73	193	0.88	45	30.41
85 to 89	69	0.32	82	0.38	13	18.84	97	0.44	15	18.29
90 to 94	38	0.18	36	0.17	-2	-5.26	46	0.21	10	27.78
95+	12	0.06	25	0.11	13	108.33	35	0.16	10	40.00

Table D-3: Population Projections and Analysis of Change, Yellowknife Total Population, 2026-2029 and 2029-2032

Population Cohort	2026		2029		Change Over Period 2026-2029		2032		Change Over Period 2029-2032	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	21,954	100.00	22,148	100.00	194	0.88	22,435	100.00	287	1.30
60 Years+	3,933	17.91	4,079	18.42	146	3.71	4,279	19.07	200	4.90
60 to 64	1,344	6.12	1,086	4.90	-258	-19.20	1,064	4.74	-22	-2.03
65 Years+	2,589	11.79	2,993	13.51	404	15.60	3,215	14.33	222	7.42
65 to 69	1,093	4.98	1,136	5.13	43	3.93	997	4.44	-139	-12.24
70 Years+	1,496	6.81	1,857	8.38	361	24.13	2,218	9.89	361	19.44
70 to 74	663	3.02	799	3.61	136	20.51	933	4.16	134	16.77
75 to 79	462	2.10	555	2.51	93	20.13	615	2.74	60	10.81
80 to 84	193	0.88	283	1.28	90	46.63	390	1.74	107	37.81
85 to 89	97	0.44	113	0.51	16	16.49	147	0.66	34	30.09
90 to 94	46	0.21	64	0.29	18	39.13	71	0.32	7	10.94
95+	35	0.16	43	0.19	8	22.86	62	0.28	19	44.19

Table D-4: Population Projections and Analysis of Change, Yellowknife Total Population, 2032-2034

Population Cohort	2032		2034		Change Over Period 2032-2034	
	Number	%	Number	%	Number	%
Total Population	22,435	100.00	22,693	100.00	258	1.15
60 Years+	4,279	19.07	4,370	19.26	91	2.13
60 to 64	1,064	4.74	1,064	4.69	0	0.00
65 Years+	3,215	14.33	3,306	14.57	91	2.83
65 to 69	997	4.44	874	3.85	-123	-12.34
70 Years+	2,218	9.89	2,432	10.72	214	9.65
70 to 74	933	4.16	946	4.17	13	1.39
75 to 79	615	2.74	708	3.12	93	15.12
80 to 84	390	1.74	431	1.90	41	10.51
85 to 89	147	0.66	198	0.87	51	34.69
90 to 94	71	0.32	71	0.31	0	0.00
95+	62	0.28	78	0.34	16	25.81

Table D-5: Population Projections and Analysis of Change, Yellowknife Total Population, 2014-2023 and 2014-2034

Population Cohort	2014		2023		Change Over Period 2014-2023		2034		Change Over Period 2014-2034	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	21,293	100.00	21,789	100.00	496	2.33	22,693	100.00	1,400	6.57
60 Years+	1,987	9.33	3,541	16.25	1,554	78.21	4,370	19.26	2,383	119.93
60 to 64	963	4.52	1,444	6.63	481	49.95	1,064	4.69	101	10.49
65 Years+	1,024	4.81	2,097	9.62	1,073	104.79	3,306	14.57	2,282	222.85
65 to 69	488	2.29	886	4.07	398	81.56	874	3.85	386	79.10
70 Years+	536	2.52	1,211	5.56	675	125.93	2,432	10.72	1,896	353.73
70 to 74	233	1.09	614	2.82	381	163.52	946	4.17	713	306.01
75 to 79	154	0.72	306	1.40	152	98.70	708	3.12	554	359.74
80 to 84	87	0.41	148	0.68	61	70.11	431	1.90	344	395.40
85 to 89	46	0.22	82	0.38	36	78.26	198	0.87	152	330.43
90 to 94	11	0.05	36	0.17	25	227.27	71	0.31	60	545.45
95+	0	0.00	25	0.11	25	0.00	78	0.34	78	0.00

Table D-6: Population Projections and Analysis of Change, Absolute Numbers and Percent, Yellowknife Total Population, 2014-2034

Population Cohort	Change Over Period													
	2014-2017		2017-2020		2020-2023		2023-2026		2026-2029		2029-2032		2032-2034	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Total Population	180	0.85	160	0.75	156	0.72	165	0.76	194	0.88	287	1.30	258	1.15
60 Years+	433	21.79	586	24.21	535	17.80	392	11.07	146	3.71	200	4.90	91	2.13
60 to 64	105	10.90	240	22.47	136	10.40	-100	-6.93	-258	-19.20	-22	-2.03	0	0.00
65 Years+	328	32.03	346	25.59	399	23.50	492	23.46	404	15.60	222	7.42	91	2.83
65 to 69	200	40.98	92	13.37	106	13.59	207	23.36	43	3.93	-139	-12.24	-123	-12.34
70 Years+	128	23.88	254	38.25	293	31.92	285	23.53	361	24.13	361	19.44	214	9.65
70 to 74	60	25.75	161	54.95	160	35.24	49	7.98	136	20.51	134	16.77	13	1.39
75 to 79	27	17.53	35	19.34	90	41.67	156	50.98	93	20.13	60	10.81	93	15.12
80 to 84	11	12.64	31	31.63	19	14.73	45	30.41	90	46.63	107	37.81	41	10.51
85 to 89	16	34.78	7	11.29	13	18.84	15	18.29	16	16.49	34	30.09	51	34.69
90 to 94	13	118.18	14	58.33	-2	-5.26	10	27.78	18	39.13	7	10.94	0	0.00
95+	0	0.00	12	0.00	13	108.33	10	40.00	8	22.86	19	44.19	16	25.81

Figure D-1.1: Population Projections and Analysis of Change – Absolute Change, Yellowknife Total Population, 2014-2017 and 2017-2020

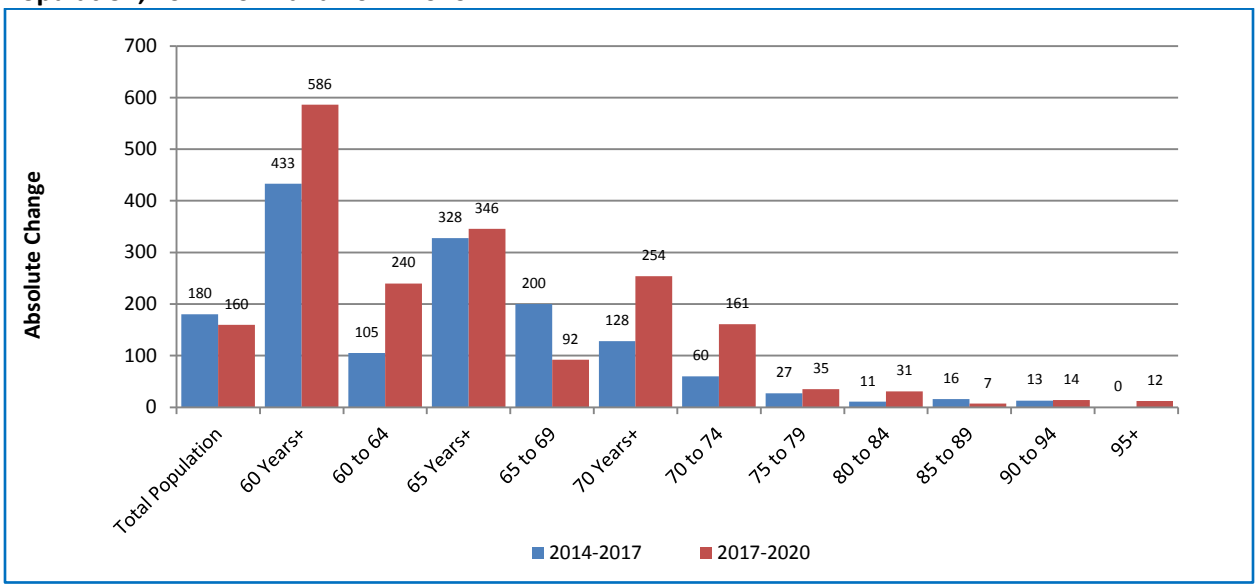


Figure D-1.2: Population Projections and Analysis of Change – Percentage Change, Yellowknife Total Population, 2014-2017 and 2017-2020

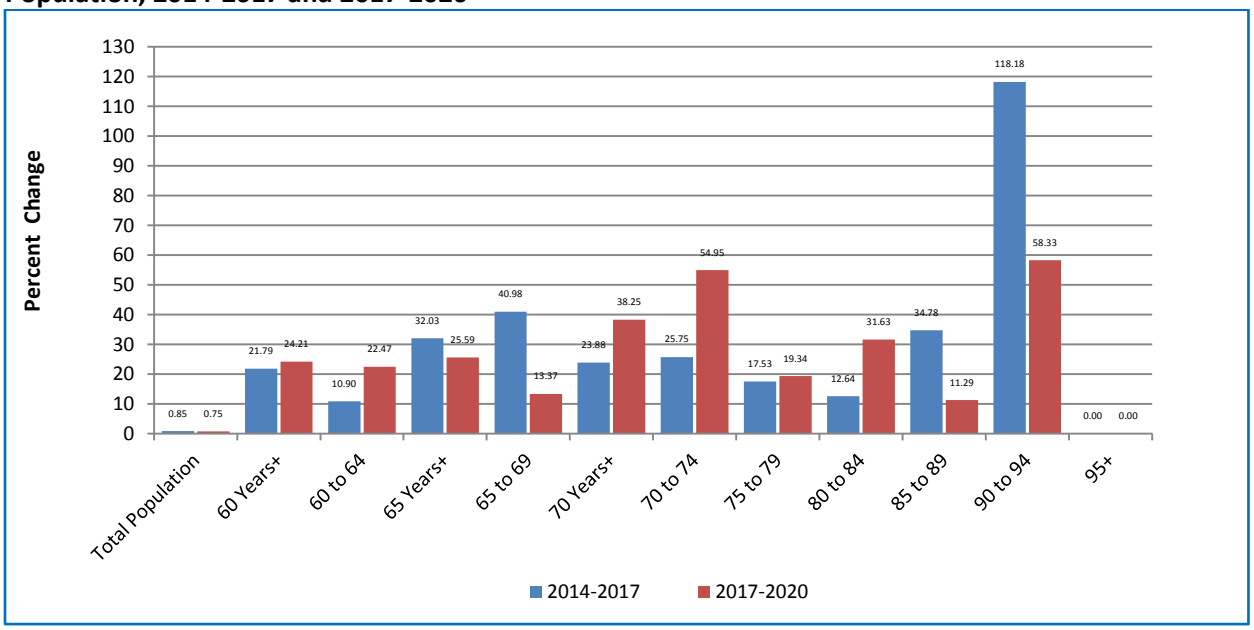


Figure D-2.1: Population Projections and Analysis of Change – Absolute Change, Yellowknife Total Population, 2020-2023 and 2023-2026

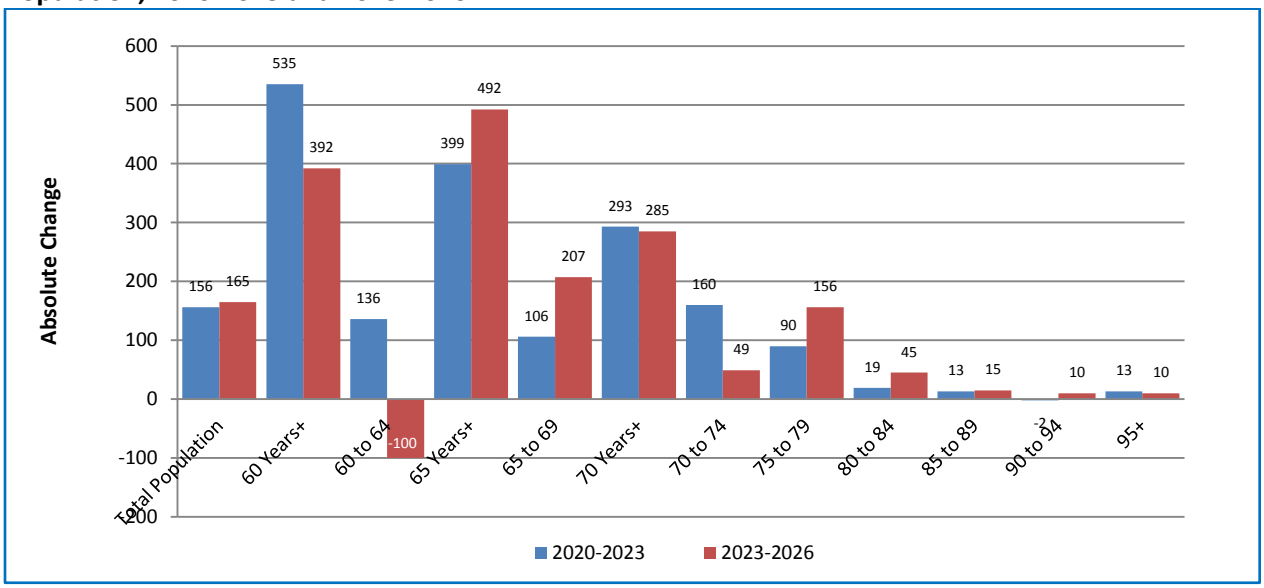


Figure D-2.2: Population Projections and Analysis of Change – Percentage Change, Yellowknife Total Population, 2020-2023 and 2023-2026

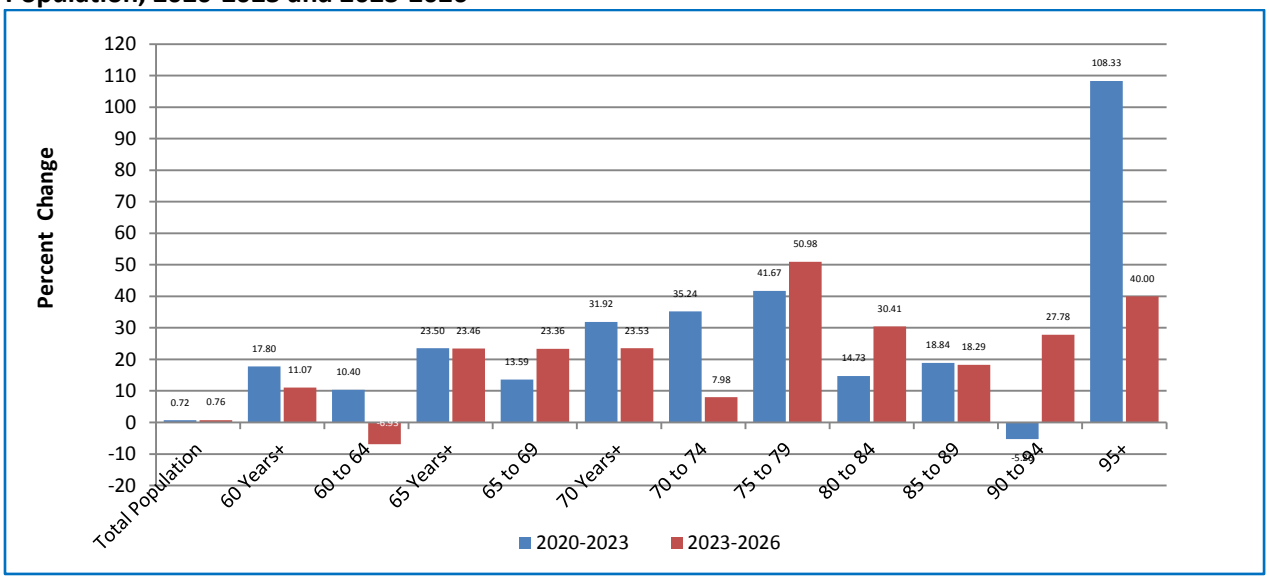


Figure D-3.1: Population Projections and Analysis of Change – Absolute Change, Yellowknife Total Population, 2026-2029 and 2029-2032

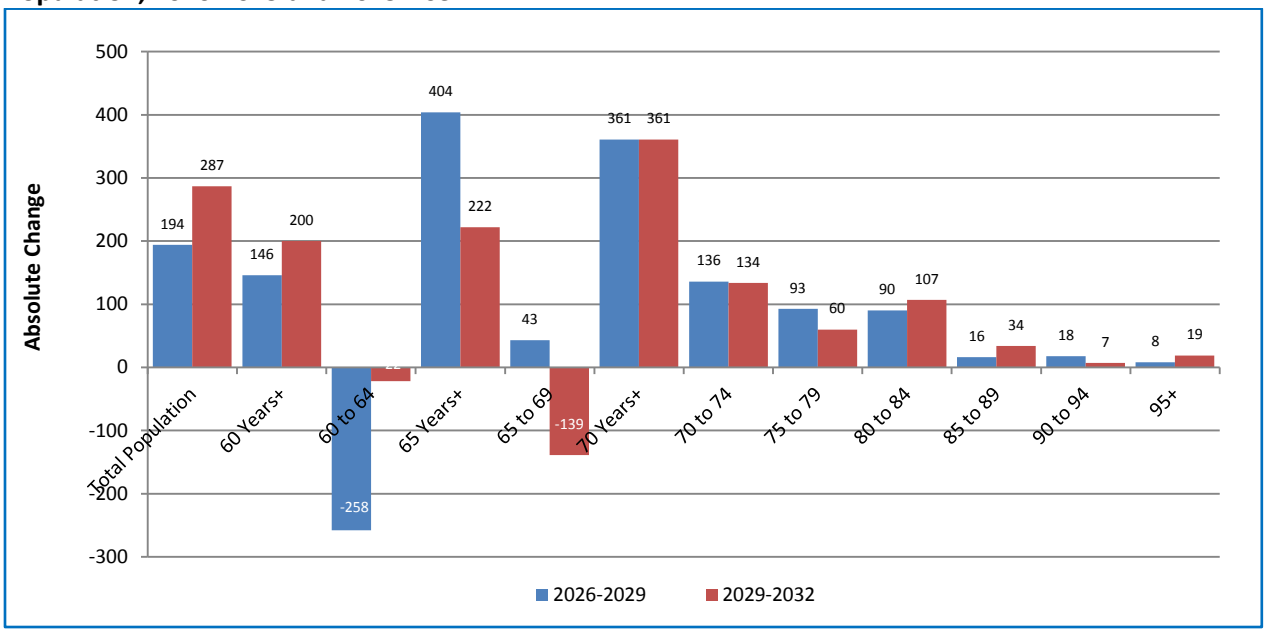


Figure D-3.2: Population Projections and Analysis of Change – Percentage Change, Yellowknife Total Population, 2026-2029 and 2029-2032

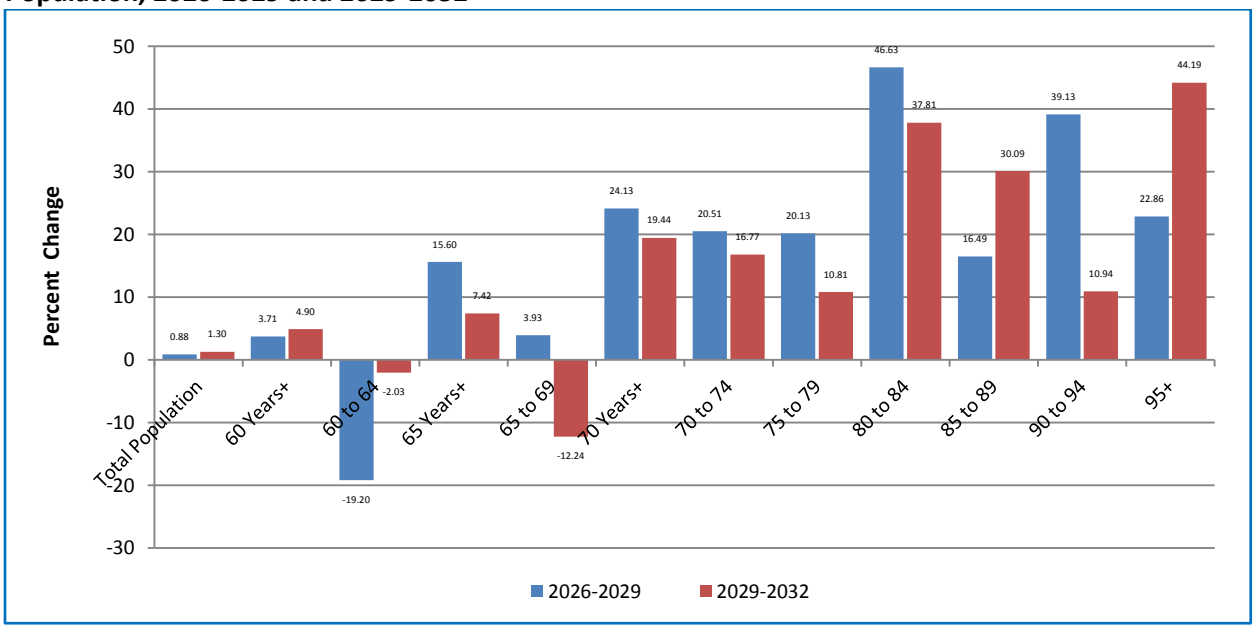


Figure D-4.1: Population Projections and Analysis of Change – Absolute Change, Yellowknife Total Population, 2032-2034

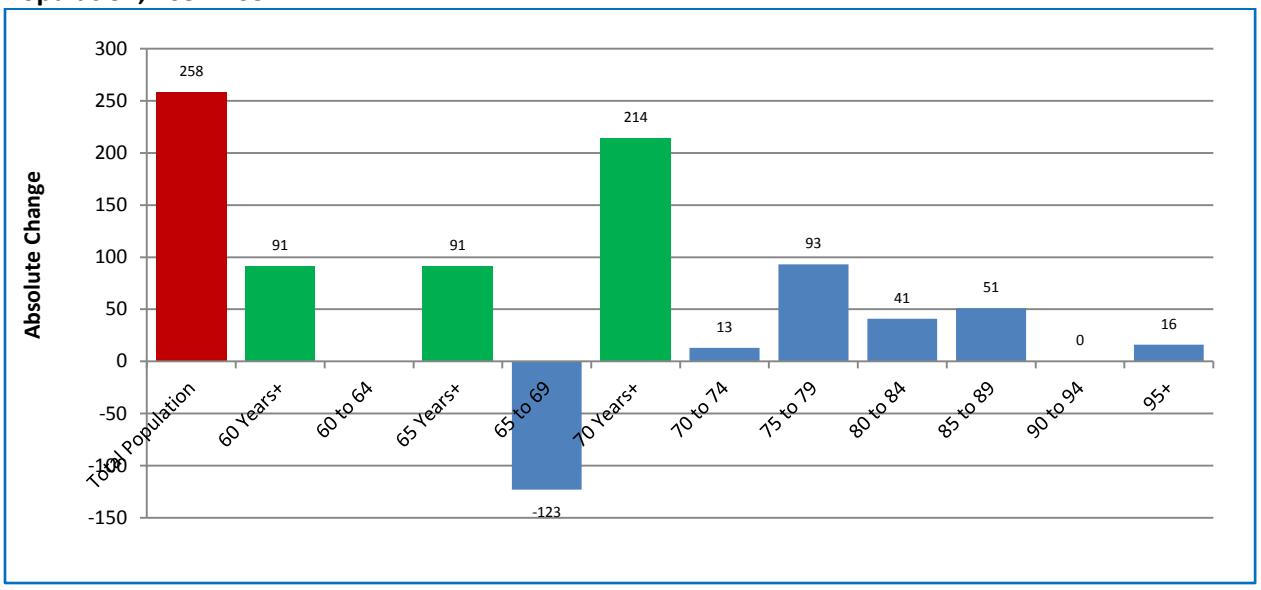


Figure D-4.2: Population Projections and Analysis of Change – Percentage Change, Yellowknife Total Population, 2032-2034

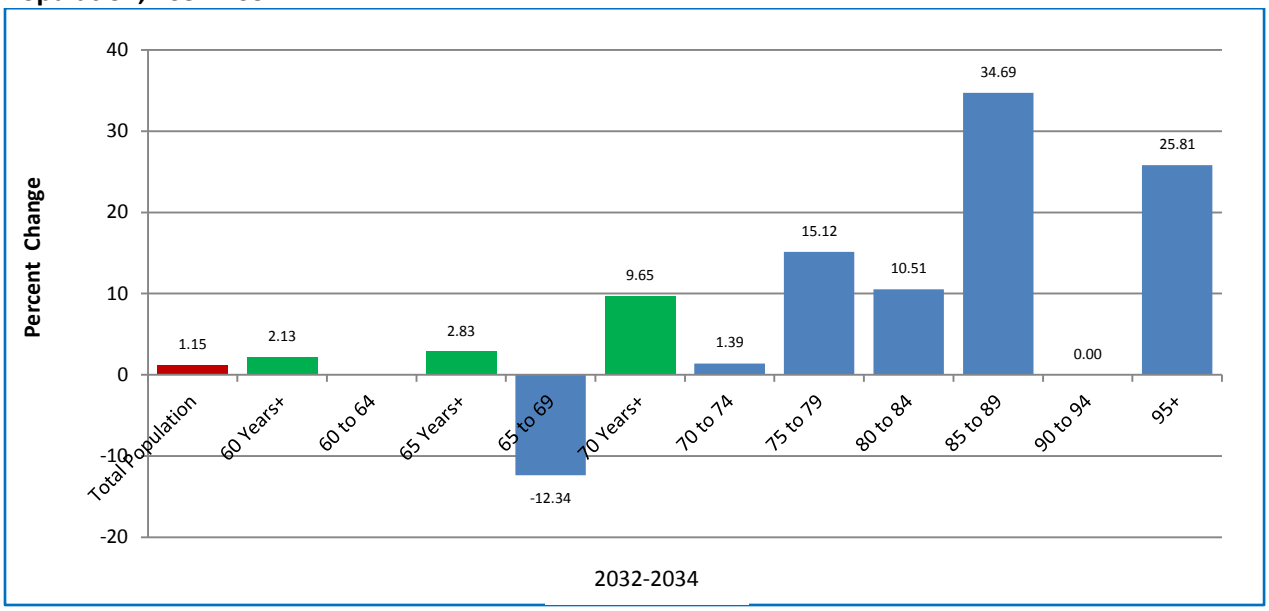


Figure D-5.1: Population Projections and Analysis of Change – Absolute Change, Yellowknife Total Population, 2014-2023 and 2014-2034

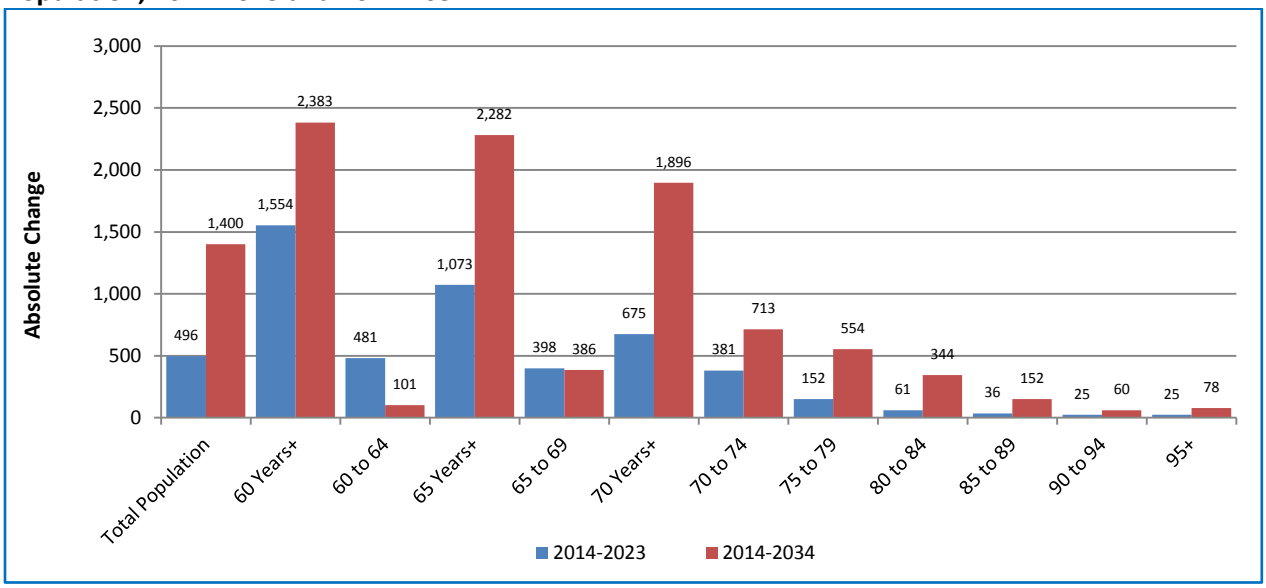


Figure D-5.2: Population Projections and Analysis of Change – Percentage Change, Yellowknife Total Population, 2014-2023 and 2014-2034

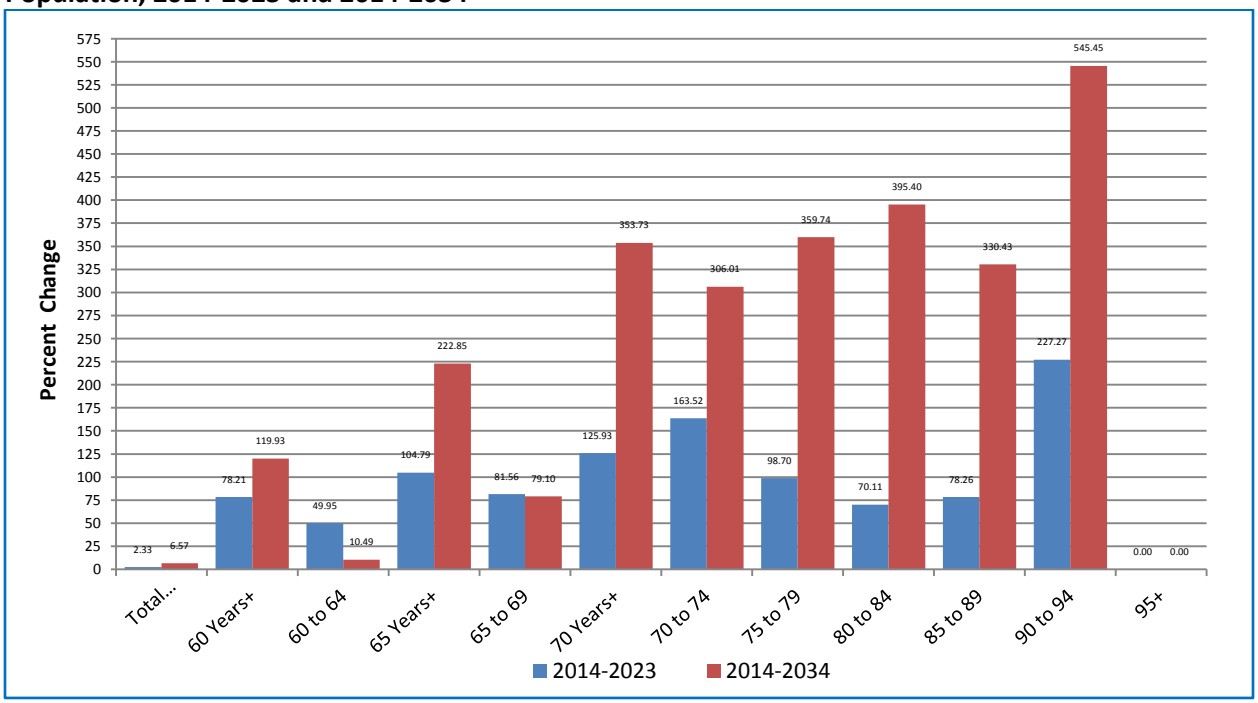


Figure D-6.1: Population Projections and Analysis of Change, Absolute Numbers, Yellowknife Total Population, 2014-2034

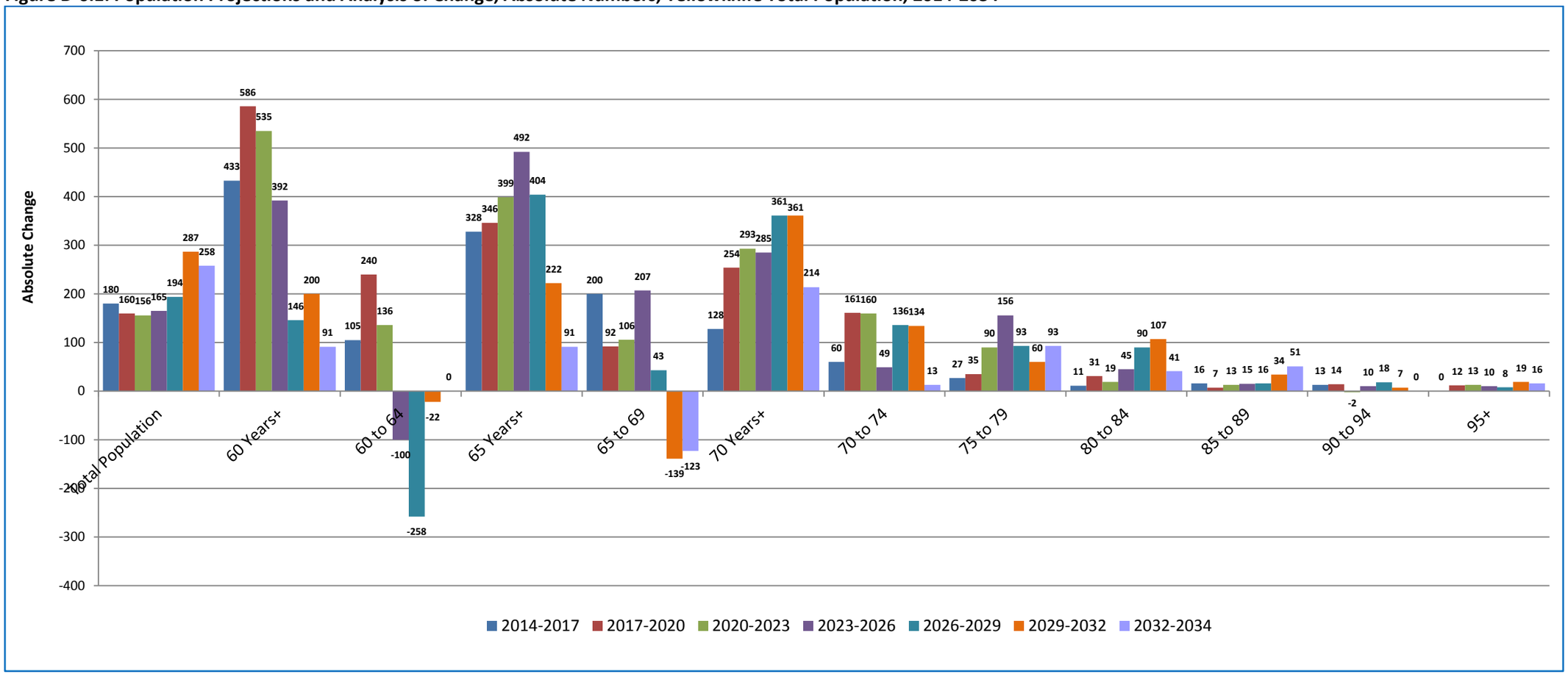
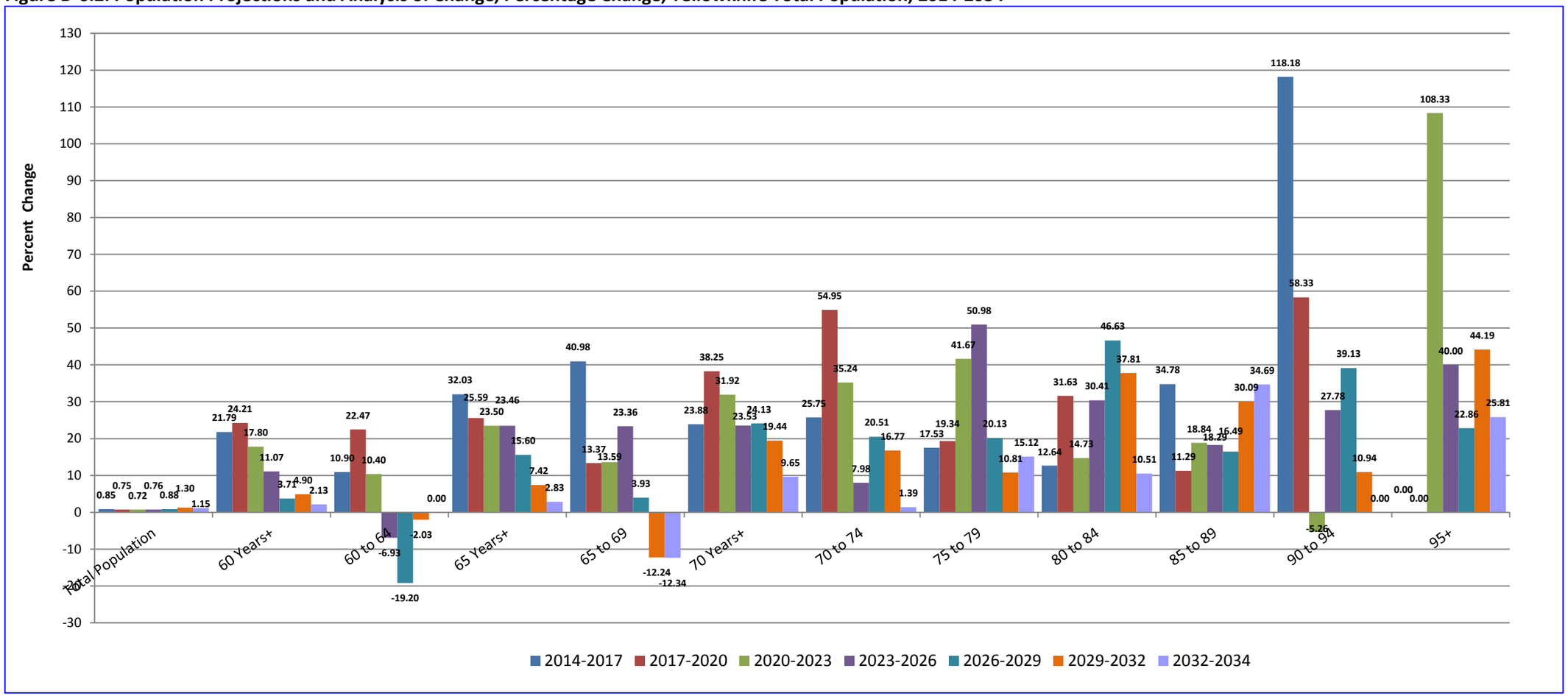


Figure D-6.2: Population Projections and Analysis of Change, Percentage Change, Yellowknife Total Population, 2014-2034



Appendix E: LTC Bed Requirement Projections, Based on Bed Ratio of 115 and 120 per 1,000 Population 70+ Years, NWT, Various Years

Table E-1: LTC Bed Requirement Projections for 2016, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2016 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2016 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**1,900**	**115**	**230.00**	**218.50**	**201.00**	**-29.00**	**-17.50**	**-38.00**	**0.00**	**-67.00**	**-55.50**
Beaufort Delta	367	115	44.43	42.21	25.00	-19.43	-17.21	-8.00	0.00	-27.43	-25.21
Sahtu	142	115	17.19	16.33	18.00	0.81	1.67	0.00	0.00	0.81	1.67
Dehcho	201	115	24.33	23.12	18.00	-6.33	-5.12	-3.00	0.00	-9.33	-8.12
Tlicho	127	115	15.37	14.61	18.00	2.63	3.40	-2.00	0.00	0.63	1.40
Yellowknife	616	115	74.57	70.84	69.00	-5.57	-1.84	-11.00	0.00	-16.57	-12.84
South Slave	270	115	32.68	31.05	25.00	-7.68	-6.05	-4.00	0.00	-11.68	-10.05
Fort Smith	177	115	21.43	20.36	28.00	6.57	7.65	-10.00	0.00	-3.43	-2.36

Table E-1.1: LTC Bed Requirement Projections for 2017, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2017 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2017 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**1,991**	**115**	**241.02**	**228.97**	**201.00**	**-40.02**	**-27.97**	**-38.00**	**0.00**	**-78.02**	**-65.97**
Beaufort Delta	369	115	44.67	42.44	25.00	-19.67	-17.44	-8.00	0.00	-27.67	-25.44
Sahtu	147	115	17.79	16.91	18.00	0.21	1.10	0.00	0.00	0.21	1.10
Dehcho	212	115	25.66	24.38	18.00	-7.66	-6.38	-3.00	0.00	-10.66	-9.38
Tlicho	126	115	15.25	14.49	18.00	2.75	3.51	-2.00	0.00	0.75	1.51
Yellowknife	664	115	80.38	76.36	69.00	-11.38	-7.36	-11.00	0.00	-22.38	-18.36
South Slave	287	115	34.74	33.01	25.00	-9.74	-8.01	-4.00	0.00	-13.74	-12.01
Fort Smith	186	115	22.52	21.39	28.00	5.48	6.61	-10.00	0.00	-4.52	-3.39

Table E-1.2: LTC Bed Requirement Projections for 2020, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2020 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2020 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**2,451**	**115**	**296.70**	**281.87**	**201.00**	**-95.70**	**-80.87**	**-38.00**	**0.00**	**-133.70**	**-118.87**
Beaufort Delta	418	115	50.60	48.07	25.00	-25.60	-23.07	-8.00	0.00	-33.60	-31.07
Sahtu	173	115	20.94	19.90	18.00	-2.94	-1.90	0.00	0.00	-2.94	-1.90
Dehcho	258	115	31.23	29.67	18.00	-13.23	-11.67	-3.00	0.00	-16.23	-14.67
Tlicho	140	115	16.95	16.10	18.00	1.05	1.90	-2.00	0.00	-0.95	-0.10
Yellowknife	918	115	111.13	105.57	69.00	-42.13	-36.57	-11.00	0.00	-53.13	-47.57
South Slave	315	115	38.13	36.23	25.00	-13.13	-11.23	-4.00	0.00	-17.13	-15.23
Fort Smith	229	115	27.72	26.34	28.00	0.28	1.67	-10.00	0.00	-9.72	-8.34

Table E-1.3: LTC Bed Requirement Projections for 2023, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2023 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2023 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**2,956**	**115**	**357.83**	**339.94**	**201.00**	**-156.83**	**-138.94**	**-38.00**	**0.00**	**-194.83**	**-176.94**
Beaufort Delta	470	115	56.89	54.05	25.00	-31.89	-29.05	-8.00	0.00	-39.89	-37.05
Sahtu	203	115	24.57	23.35	18.00	-6.57	-5.35	0.00	0.00	-6.57	-5.35
Dehcho	296	115	35.83	34.04	18.00	-17.83	-16.04	-3.00	0.00	-20.83	-19.04
Tlicho	156	115	18.88	17.94	18.00	-0.88	0.06	-2.00	0.00	-2.88	-1.94
Yellowknife	1,211	115	146.59	139.27	69.00	-77.59	-70.27	-11.00	0.00	-88.59	-81.27
South Slave	372	115	45.03	42.78	25.00	-20.03	-17.78	-4.00	0.00	-24.03	-21.78
Fort Smith	248	115	30.02	28.52	28.00	-2.02	-0.52	-10.00	0.00	-12.02	-10.52

Table E-1.4: LTC Bed Requirement Projections for 2026, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2026 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2026 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**3,482**	**115**	**421.51**	**400.43**	**201.00**	**-220.51**	**-199.43**	**-38.00**	**0.00**	**-258.51**	**-237.43**
Beaufort Delta	525	115	63.55	60.38	25.00	-38.55	-35.38	-8.00	0.00	-46.55	-43.38
Sahtu	229	115	27.72	26.34	18.00	-9.72	-8.34	0.00	0.00	-9.72	-8.34
Dehcho	364	115	44.06	41.86	18.00	-26.06	-23.86	-3.00	0.00	-29.06	-26.86
Tlicho	174	115	21.06	20.01	18.00	-3.06	-2.01	-2.00	0.00	-5.06	-4.01
Yellowknife	1,496	115	181.09	172.04	69.00	-112.09	-103.04	-11.00	0.00	-123.09	-114.04
South Slave	429	115	51.93	49.34	25.00	-26.93	-24.34	-4.00	0.00	-30.93	-28.34
Fort Smith	265	115	32.08	30.48	28.00	-4.08	-2.48	-10.00	0.00	-14.08	-12.48

Table E-1.5: LTC Bed Requirement Projections for 2029, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2029 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2029 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**4,101**	**115**	**496.44**	**471.62**	**201.00**	**-295.44**	**-270.62**	**-38.00**	**0.00**	**-333.44**	**-308.62**
Beaufort Delta	610	115	73.84	70.15	25.00	-48.84	-45.15	-8.00	0.00	-56.84	-53.15
Sahtu	248	115	30.02	28.52	18.00	-12.02	-10.52	0.00	0.00	-12.02	-10.52
Dehcho	406	115	49.15	46.69	18.00	-31.15	-28.69	-3.00	0.00	-34.15	-31.69
Tlicho	191	115	23.12	21.97	18.00	-5.12	-3.97	-2.00	0.00	-7.12	-5.97
Yellowknife	1,857	115	224.79	213.56	69.00	-155.79	-144.56	-11.00	0.00	-166.79	-155.56
South Slave	495	115	59.92	56.93	25.00	-34.92	-31.93	-4.00	0.00	-38.92	-35.93
Fort Smith	294	115	35.59	33.81	28.00	-7.59	-5.81	-10.00	0.00	-17.59	-15.81

Table E-1.6: LTC Bed Requirement Projections for 2032, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2032 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2032 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**4,805**	**115**	**581.66**	**552.58**	**201.00**	**-380.66**	**-351.58**	**-38.00**	**0.00**	**-418.66**	**-389.58**
Beaufort Delta	712	115	86.19	81.88	25.00	-61.19	-56.88	-8.00	0.00	-69.19	-64.88
Sahtu	288	115	34.86	33.12	18.00	-16.86	-15.12	0.00	0.00	-16.86	-15.12
Dehcho	466	115	56.41	53.59	18.00	-38.41	-35.59	-3.00	0.00	-41.41	-38.59
Tlicho	229	115	27.72	26.34	18.00	-9.72	-8.34	-2.00	0.00	-11.72	-10.34
Yellowknife	2,218	115	268.49	255.07	69.00	-199.49	-186.07	-11.00	0.00	-210.49	-197.07
South Slave	568	115	68.76	65.32	25.00	-43.76	-40.32	-4.00	0.00	-47.76	-44.32
Fort Smith	324	115	39.22	37.26	28.00	-11.22	-9.26	-10.00	0.00	-21.22	-19.26

Table E-1.7: LTC Bed Requirement Projections for 2034, Based on Bed Ratio of 115 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2034 Population Projection: 70 Years Plus	Bed Ratio 115 per 1,000	2034 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**5,207**	**115**	**630.32**	**598.81**	**201.00**	**-429.32**	**-397.81**	**-38.00**	**0.00**	**-467.32**	**-435.81**
Beaufort Delta	784	115	94.91	90.16	25.00	-69.91	-65.16	-8.00	0.00	-77.91	-73.16
Sahtu	308	115	37.28	35.42	18.00	-19.28	-17.42	0.00	0.00	-19.28	-17.42
Dehcho	500	115	60.53	57.50	18.00	-42.53	-39.50	-3.00	0.00	-45.53	-42.50
Tlicho	240	115	29.05	27.60	18.00	-11.05	-9.60	-2.00	0.00	-13.05	-11.60
Yellowknife	2,432	115	294.40	279.68	69.00	-225.40	-210.68	-11.00	0.00	-236.40	-221.68
South Slave	597	115	72.27	68.66	25.00	-47.27	-43.66	-4.00	0.00	-51.27	-47.66
Fort Smith	346	115	41.88	39.79	28.00	-13.88	-11.79	-10.00	0.00	-23.88	-21.79

Table E-2: LTC Bed Requirement Projections for 2016, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2016 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2016 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**1,900**	**120**	**240.00**	**228.00**	**201.00**	**-39.00**	**-27.00**	**-38.00**	**0.00**	**-77.00**	**-65.00**
Beaufort Delta	367	120	46.36	44.04	25.00	-21.36	-19.04	-8.00	0.00	-29.36	-27.04
Sahtu	142	120	17.94	17.04	18.00	0.06	0.96	0.00	0.00	0.06	0.96
Dehcho	201	120	25.39	24.12	18.00	-7.39	-6.12	-3.00	0.00	-10.39	-9.12
Tlicho	127	120	16.04	15.24	18.00	1.96	2.76	-2.00	0.00	-0.04	0.76
Yellowknife	616	120	77.81	73.92	69.00	-8.81	-4.92	-11.00	0.00	-19.81	-15.92
South Slave	270	120	34.11	32.40	25.00	-9.11	-7.40	-4.00	0.00	-13.11	-11.40
Fort Smith	177	120	22.36	21.24	28.00	5.64	6.76	-10.00	0.00	-4.36	-3.24

Table E-2.1: LTC Bed Requirement Projections for 2017, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2017 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2017 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**1,991**	**120**	**251.49**	**238.92**	**201.00**	**-50.49**	**-37.92**	**-38.00**	**0.00**	**-88.49**	**-75.92**
Beaufort Delta	369	120	46.61	44.28	25.00	-21.61	-19.28	-8.00	0.00	-29.61	-27.28
Sahtu	147	120	18.57	17.64	18.00	-0.57	0.36	0.00	0.00	-0.57	0.36
Dehcho	212	120	26.78	25.44	18.00	-8.78	-7.44	-3.00	0.00	-11.78	-10.44
Tlicho	126	120	15.92	15.12	18.00	2.08	2.88	-2.00	0.00	0.08	0.88
Yellowknife	664	120	83.87	79.68	69.00	-14.87	-10.68	-11.00	0.00	-25.87	-21.68
South Slave	287	120	36.25	34.44	25.00	-11.25	-9.44	-4.00	0.00	-15.25	-13.44
Fort Smith	186	115	22.52	21.39	28.00	5.48	6.61	-10.00	0.00	-4.52	-3.39

Table E-2.2: LTC Bed Requirement Projections for 2020, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2020 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2020 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**2,451**	**120**	**309.60**	**294.12**	**201.00**	**-108.60**	**-93.12**	**-38.00**	**0.00**	**-146.60**	**-131.12**
Beaufort Delta	418	120	52.80	50.16	25.00	-27.80	-25.16	-8.00	0.00	-35.80	-33.16
Sahtu	173	120	21.85	20.76	18.00	-3.85	-2.76	0.00	0.00	-3.85	-2.76
Dehcho	258	120	32.59	30.96	18.00	-14.59	-12.96	-3.00	0.00	-17.59	-15.96
Tlicho	140	120	17.68	16.80	18.00	0.32	1.20	-2.00	0.00	-1.68	-0.80
Yellowknife	918	120	115.96	110.16	69.00	-46.96	-41.16	-11.00	0.00	-57.96	-52.16
South Slave	315	120	39.79	37.80	25.00	-14.79	-12.80	-4.00	0.00	-18.79	-16.80
Fort Smith	229	120	28.93	27.48	28.00	-0.93	0.52	-10.00	0.00	-10.93	-9.48

Table E-2.3: LTC Bed Requirement Projections for 2023, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2023 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2023 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**2,956**	**120**	**373.39**	**354.72**	**201.00**	**-172.39**	**-153.72**	**-38.00**	**0.00**	**-210.39**	**-191.72**
Beaufort Delta	470	120	59.37	56.40	25.00	-34.37	-31.40	-8.00	0.00	-42.37	-39.40
Sahtu	203	120	25.64	24.36	18.00	-7.64	-6.36	0.00	0.00	-7.64	-6.36
Dehcho	296	120	37.39	35.52	18.00	-19.39	-17.52	-3.00	0.00	-22.39	-20.52
Tlicho	156	120	19.71	18.72	18.00	-1.71	-0.72	-2.00	0.00	-3.71	-2.72
Yellowknife	1,211	120	152.97	145.32	69.00	-83.97	-76.32	-11.00	0.00	-94.97	-87.32
South Slave	372	120	46.99	44.64	25.00	-21.99	-19.64	-4.00	0.00	-25.99	-23.64
Fort Smith	248	120	31.33	29.76	28.00	-3.33	-1.76	-10.00	0.00	-13.33	-11.76

Table E-2.4: LTC Bed Requirement Projections for 2026, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2026 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2026 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**3,482**	**120**	**439.83**	**417.84**	**201.00**	**-238.83**	**-216.84**	**-38.00**	**0.00**	**-276.83**	**-254.84**
Beaufort Delta	525	120	66.32	63.00	25.00	-41.32	-38.00	-8.00	0.00	-49.32	-46.00
Sahtu	229	120	28.93	27.48	18.00	-10.93	-9.48	0.00	0.00	-10.93	-9.48
Dehcho	364	120	45.98	43.68	18.00	-27.98	-25.68	-3.00	0.00	-30.98	-28.68
Tlicho	174	120	21.98	20.88	18.00	-3.98	-2.88	-2.00	0.00	-5.98	-4.88
Yellowknife	1,496	120	188.97	179.52	69.00	-119.97	-110.52	-11.00	0.00	-130.97	-121.52
South Slave	429	120	54.19	51.48	25.00	-29.19	-26.48	-4.00	0.00	-33.19	-30.48
Fort Smith	265	120	33.47	31.80	28.00	-5.47	-3.80	-10.00	0.00	-15.47	-13.80

Table E-2.5: LTC Bed Requirement Projections for 2029, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2029 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2029 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**4,101**	**120**	**518.02**	**492.12**	**201.00**	**-317.02**	**-291.12**	**-38.00**	**0.00**	**-355.02**	**-329.12**
Beaufort Delta	610	120	77.05	73.20	25.00	-52.05	-48.20	-8.00	0.00	-60.05	-56.20
Sahtu	248	120	31.33	29.76	18.00	-13.33	-11.76	0.00	0.00	-13.33	-11.76
Dehcho	406	120	51.28	48.72	18.00	-33.28	-30.72	-3.00	0.00	-36.28	-33.72
Tlicho	191	120	24.13	22.92	18.00	-6.13	-4.92	-2.00	0.00	-8.13	-6.92
Yellowknife	1,857	120	234.57	222.84	69.00	-165.57	-153.84	-11.00	0.00	-176.57	-164.84
South Slave	495	120	62.53	59.40	25.00	-37.53	-34.40	-4.00	0.00	-41.53	-38.40
Fort Smith	294	120	37.14	35.28	28.00	-9.14	-7.28	-10.00	0.00	-19.14	-17.28

Table E-2.6: LTC Bed Requirement Projections for 2032, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2032 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2032 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**4,805**	**120**	**606.95**	**576.60**	**201.00**	**-405.95**	**-375.60**	**-38.00**	**0.00**	**-443.95**	**-413.60**
Beaufort Delta	712	120	89.94	85.44	25.00	-64.94	-60.44	-8.00	0.00	-72.94	-68.44
Sahtu	288	120	36.38	34.56	18.00	-18.38	-16.56	0.00	0.00	-18.38	-16.56
Dehcho	466	120	58.86	55.92	18.00	-40.86	-37.92	-3.00	0.00	-43.86	-40.92
Tlicho	229	120	28.93	27.48	18.00	-10.93	-9.48	-2.00	0.00	-12.93	-11.48
Yellowknife	2,218	120	280.17	266.16	69.00	-211.17	-197.16	-11.00	0.00	-222.17	-208.16
South Slave	568	120	71.75	68.16	25.00	-46.75	-43.16	-4.00	0.00	-50.75	-47.16
Fort Smith	324	120	40.93	38.88	28.00	-12.93	-10.88	-10.00	0.00	-22.93	-20.88

Table E-2.7: LTC Bed Requirement Projections for 2034, Based on Bed Ratio of 120 per 1,000 Population 70+ Years, NWT and Regions

Geographic Area	2034 Population Projection: 70 Years Plus	Bed Ratio 120 per 1,000	2034 LTC Bed Requirement Base Projection		2016 Existing LTC Bed Inventory	Variance from Projected Initial Demand		Other Bed Demand Adjustments		Final Variance from Projected Demand for LTC Beds	
			Bed Occupancy Scenario			Bed Occupancy Scenario		Territotial Admissions Committee: Wait List	Out of Territory Repatriation of LTC Eligible Clients	Bed Occupancy Scenario	
			95%	100%		95%	100%			95%	100%
Northwest Territories	**5,207**	**120**	**657.73**	**624.84**	**201.00**	**-456.73**	**-423.84**	**-38.00**	**0.00**	**-494.73**	**-461.84**
Beaufort Delta	784	120	99.03	94.08	25.00	-74.03	-69.08	-8.00	0.00	-82.03	-77.08
Sahtu	308	120	38.91	36.96	18.00	-20.91	-18.96	0.00	0.00	-20.91	-18.96
Dehcho	500	120	63.16	60.00	18.00	-45.16	-42.00	-3.00	0.00	-48.16	-45.00
Tlicho	240	120	30.32	28.80	18.00	-12.32	-10.80	-2.00	0.00	-14.32	-12.80
Yellowknife	2,432	120	307.20	291.84	69.00	-238.20	-222.84	-11.00	0.00	-249.20	-233.84
South Slave	597	120	75.41	71.64	25.00	-50.41	-46.64	-4.00	0.00	-54.41	-50.64
Fort Smith	346	120	43.71	41.52	28.00	-15.71	-13.52	-10.00	0.00	-25.71	-23.52

Table E-3: Final Variance from Projected Demand for LTC Beds, 2016-2034, Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

Geographic Area	Bed Occupancy Scenario															
	2016		2017		2020		2023		2026		2029		2032		2034	
	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%
Northwest Territories	**-67.00**	**-55.50**	**-78.02**	**-65.97**	**-133.70**	**-118.87**	**-194.83**	**-176.94**	**-258.51**	**-237.43**	**-333.44**	**-308.62**	**-418.66**	**-389.58**	**-467.32**	**-435.81**
Beaufort Delta	-27.43	-25.21	-27.67	-25.44	-33.60	-31.07	-39.89	-37.05	-46.55	-43.38	-56.84	-53.15	-69.19	-64.88	-77.91	-73.16
Sahtu	0.81	1.67	0.21	1.10	-2.94	-1.90	-6.57	-5.35	-9.72	-8.34	-12.02	-10.52	-16.86	-15.12	-19.28	-17.42
Dehcho	-9.33	-8.12	-10.66	-9.38	-16.23	-14.67	-20.83	-19.04	-29.06	-26.86	-34.15	-31.69	-41.41	-38.59	-45.53	-42.50
Tlicho	0.63	1.40	0.75	1.51	-0.95	-0.10	-2.88	-1.94	-5.06	-4.01	-7.12	-5.97	-11.72	-10.34	-13.05	-11.60
Yellowknife	-16.57	-12.84	-22.38	-18.36	-53.13	-47.57	-88.59	-81.27	-123.09	-114.04	-166.79	-155.56	-210.49	-197.07	-236.40	-221.68
South Slave	-11.68	-10.05	-13.74	-12.01	-17.13	-15.23	-24.03	-21.78	-30.93	-28.34	-38.92	-35.93	-47.76	-44.32	-51.27	-47.66
Fort Smith	-3.43	-2.36	-4.52	-3.39	-9.72	-8.34	-12.02	-10.52	-14.08	-12.48	-17.59	-15.81	-21.22	-19.26	-23.88	-21.79

Table E-3.1: Final Variance from Projected Demand for LTC Beds, 2016-2034, Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

Geographic Area	Bed Occupancy Scenario															
	2016		2017		2020		2023		2026		2029		2032		2034	
	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%	95%	100%
Northwest Territories	**-77.00**	**-65.00**	**-88.49**	**-75.92**	**-146.60**	**-131.12**	**-210.39**	**-191.72**	**-276.83**	**-254.84**	**-355.02**	**-329.12**	**-443.95**	**-413.60**	**-494.73**	**-461.84**
Beaufort Delta	-29.36	-27.04	-29.61	-27.28	-35.80	-33.16	-42.37	-39.40	-49.32	-46.00	-60.05	-56.20	-72.94	-68.44	-82.03	-77.08
Sahtu	0.06	0.96	-0.57	0.36	-3.85	-2.76	-7.64	-6.36	-10.93	-9.48	-13.33	-11.76	-18.38	-16.56	-20.91	-18.96
Dehcho	-10.39	-9.12	-11.78	-10.44	-17.59	-15.96	-22.39	-20.52	-30.98	-28.68	-36.28	-33.72	-43.86	-40.92	-48.16	-45.00
Tlicho	-0.04	0.76	0.08	0.88	-1.68	-0.80	-3.71	-2.72	-5.98	-4.88	-8.13	-6.92	-12.93	-11.48	-14.32	-12.80
Yellowknife	-19.81	-15.92	-25.87	-21.68	-57.96	-52.16	-94.97	-87.32	-130.97	-121.52	-176.57	-164.84	-222.17	-208.16	-249.20	-233.84
South Slave	-13.11	-11.40	-15.25	-13.44	-18.79	-16.80	-25.99	-23.64	-33.19	-30.48	-41.53	-38.40	-50.75	-47.16	-54.41	-50.64
Fort Smith	-4.36	-3.24	-4.52	-3.39	-10.93	-9.48	-13.33	-11.76	-15.47	-13.80	-19.14	-17.28	-22.93	-20.88	-25.71	-23.52

Figure E-1: Final Variance from Projected Demand for LTC Beds, 2016-2034, Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT

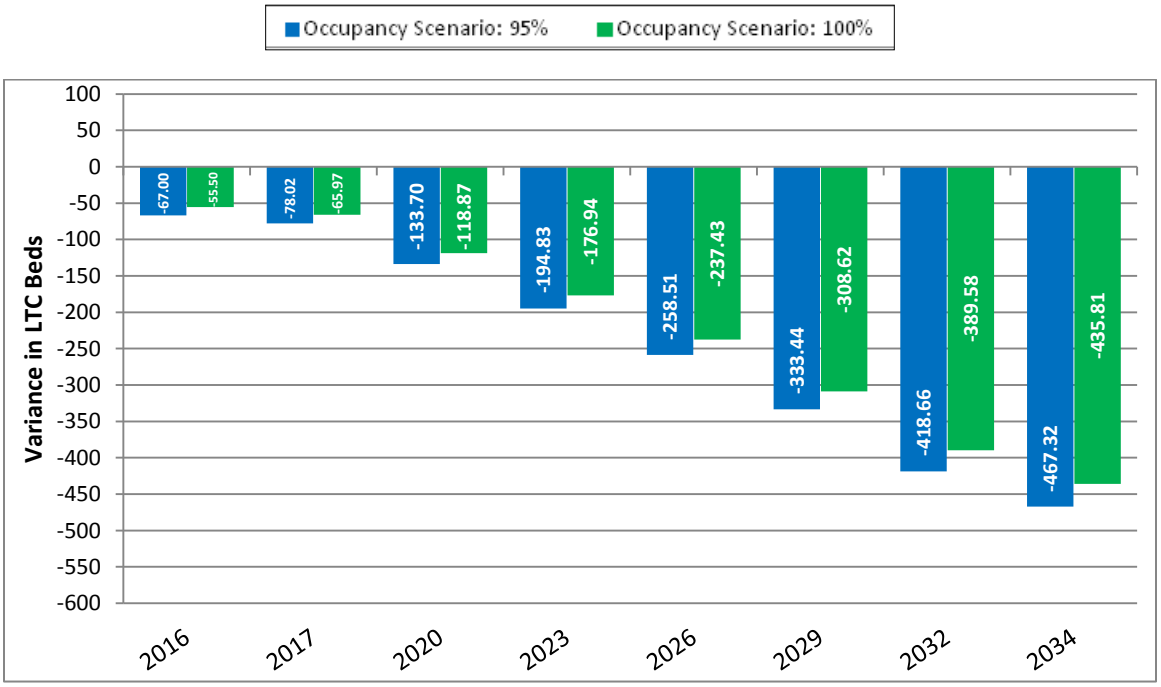


Figure E-1.1: Final Variance from Projected Demand for LTC Beds, 2016-2034, Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT

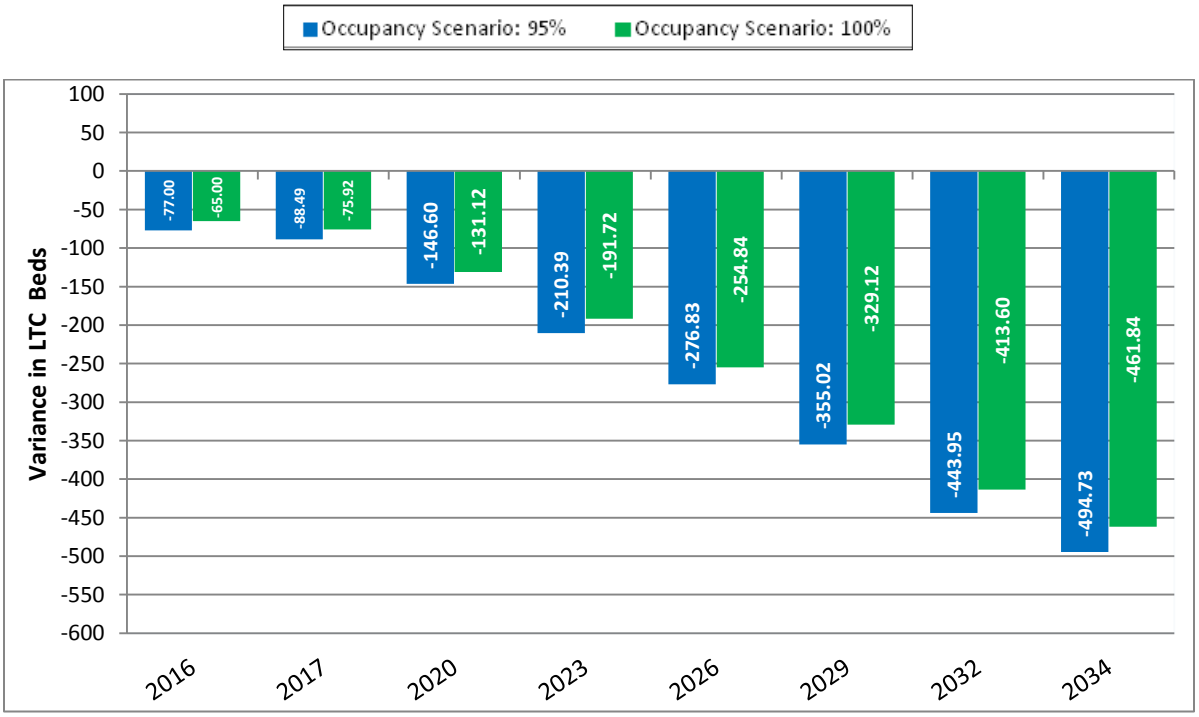


Figure E-2: Final Variance from Projected Demand for LTC Beds, 2016 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

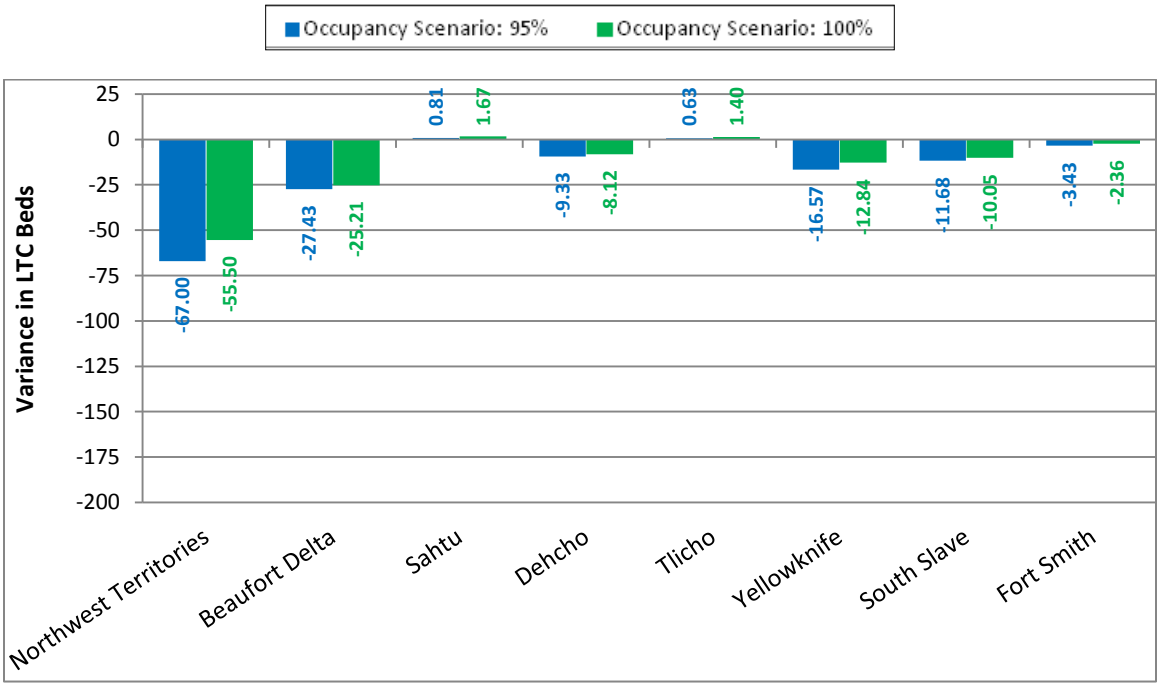


Figure E-2.1: Final Variance from Projected Demand for LTC Beds, 2020 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

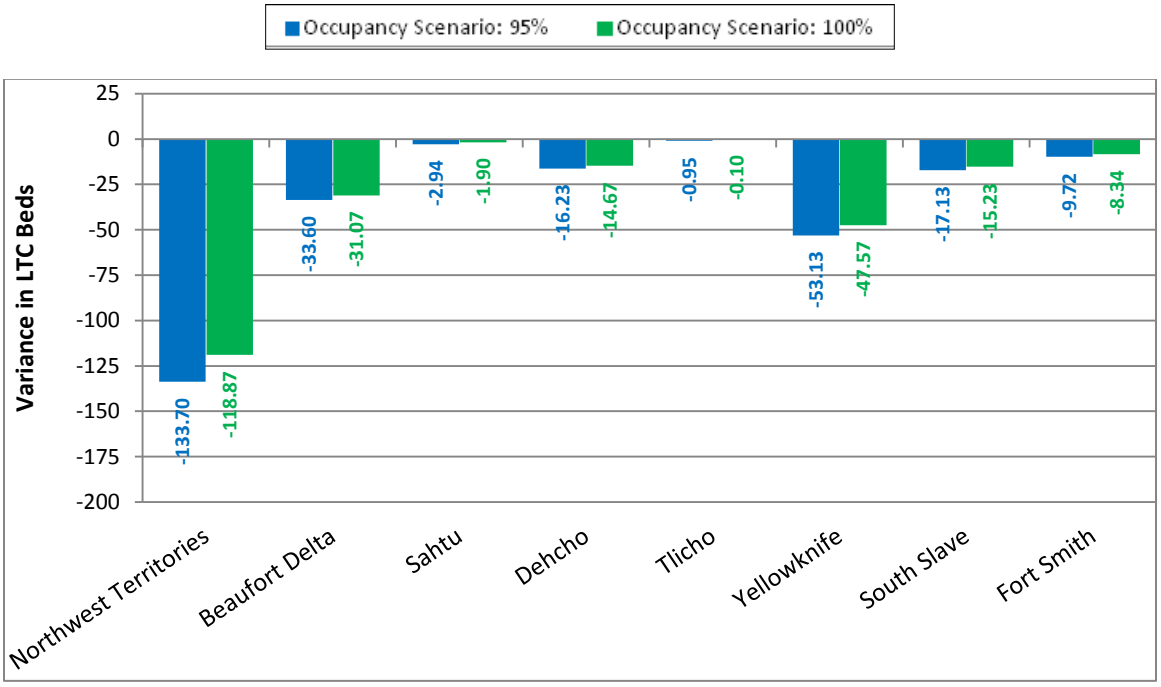


Figure E-2.2: Final Variance from Projected Demand for LTC Beds, 2026 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

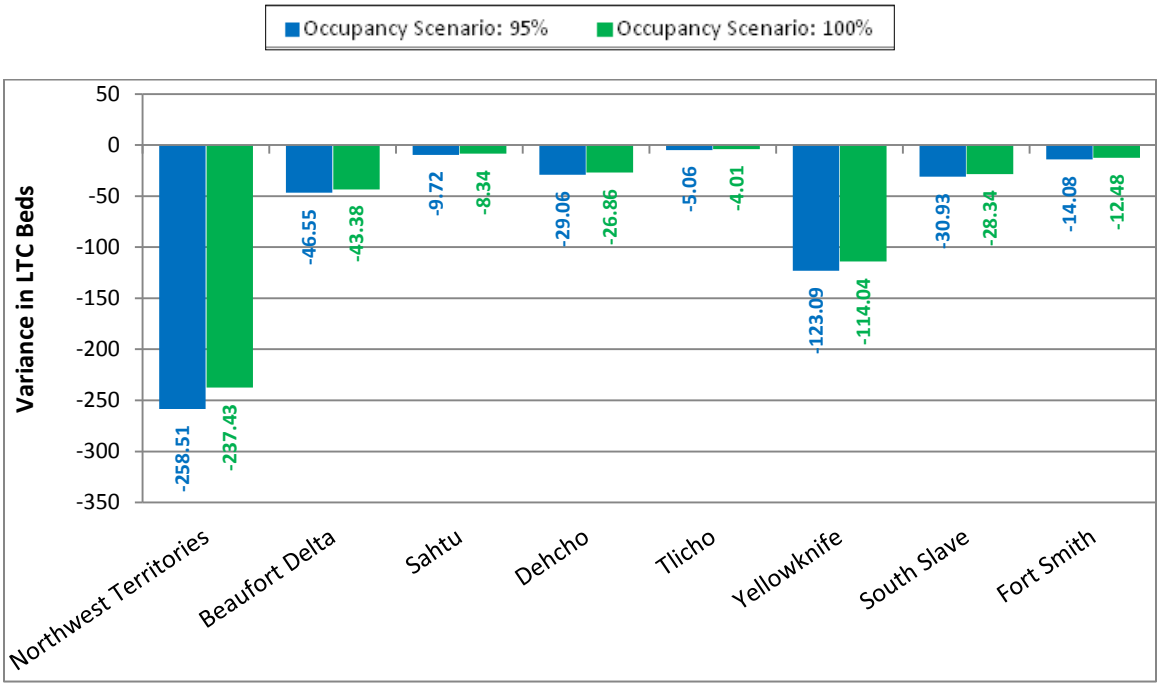


Figure E-2.3: Final Variance from Projected Demand for LTC Beds, 2034 Bed Ratio of 115 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

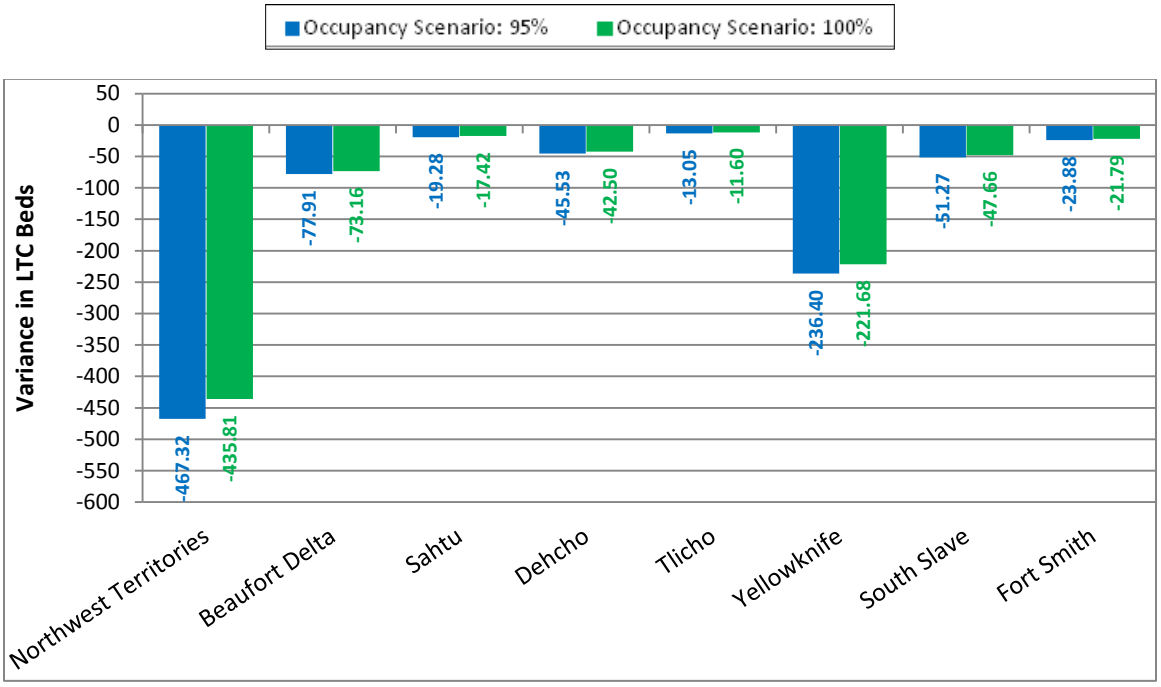


Figure E-3: Final Variance from Projected Demand for LTC Beds, 2016 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

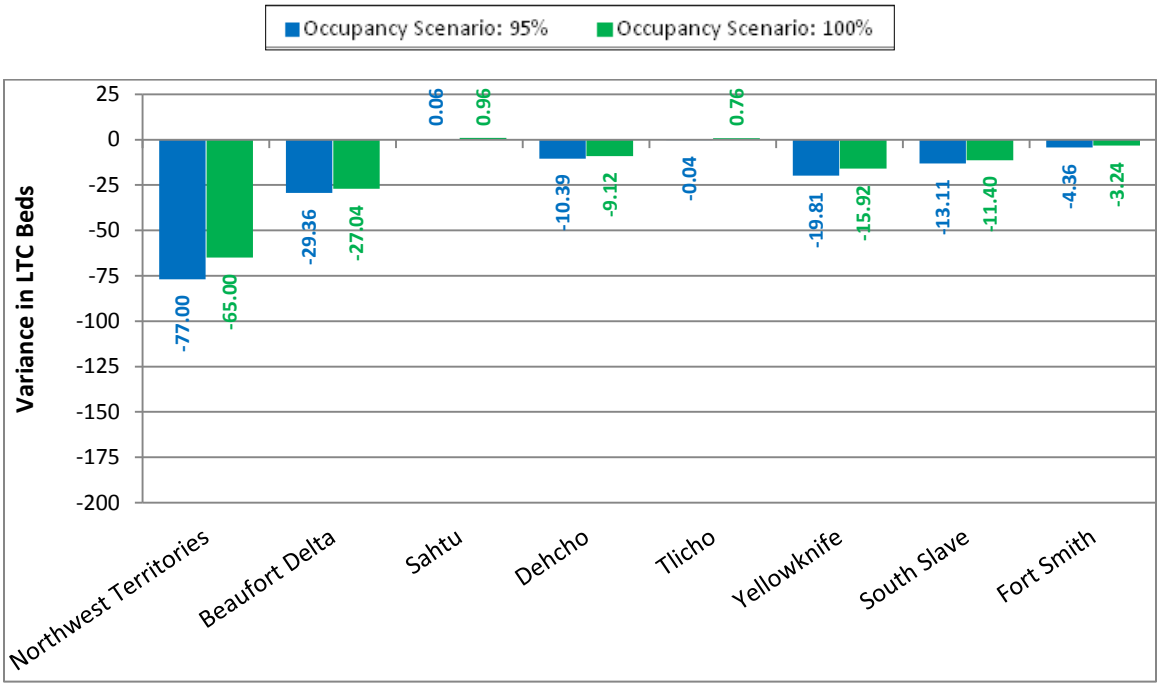


Figure E-3.1: Final Variance from Projected Demand for LTC Beds, 2020 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

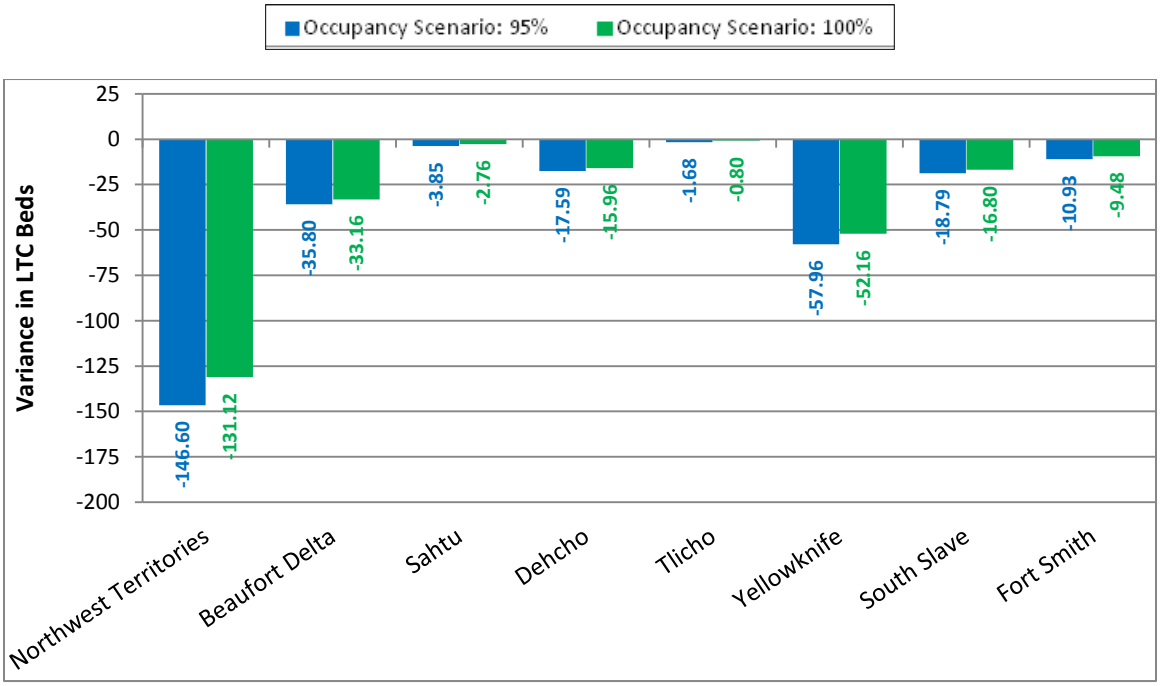


Figure E-3.2: Final Variance from Projected Demand for LTC Beds, 2026 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions

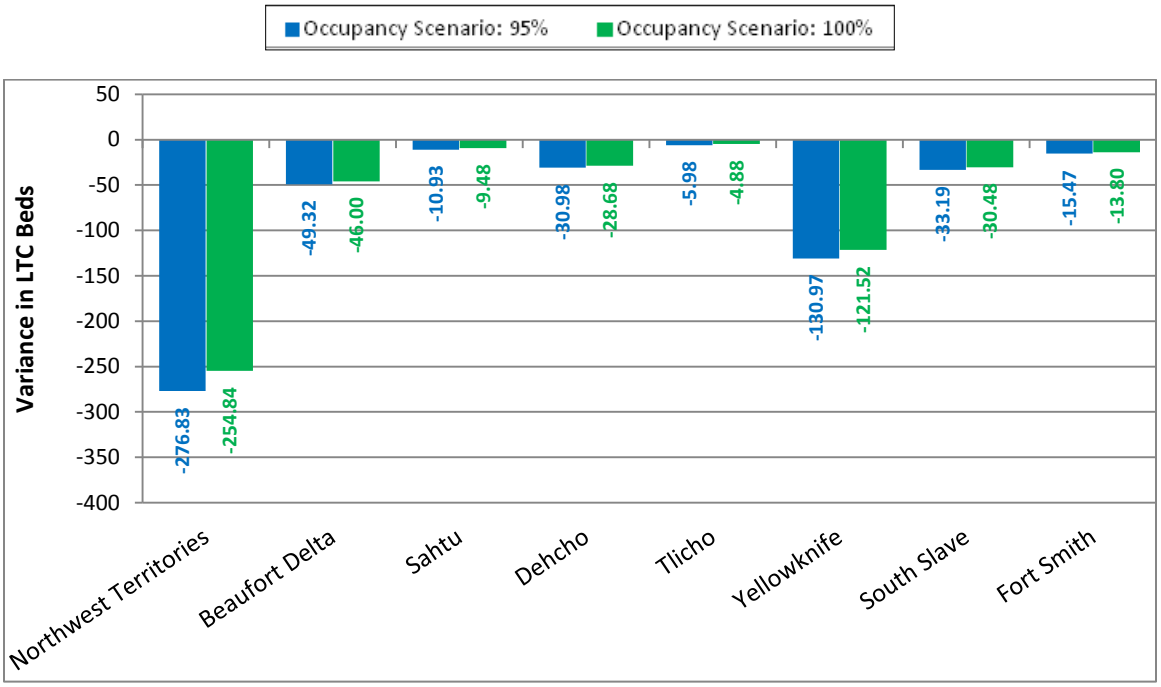
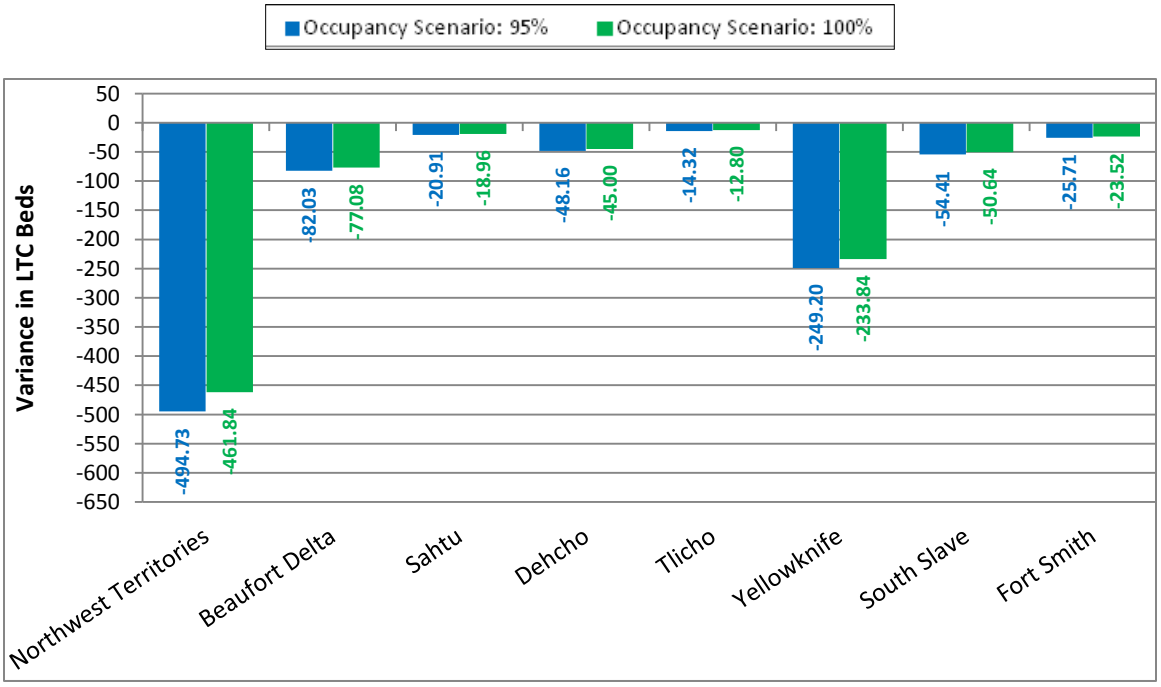


Figure E-3.3: Final Variance from Projected Demand for LTC Beds, 2034 Bed Ratio of 120 per 1,000 Population 70+ Years, Bed Occupancy Scenario of 95% and 100%, NWT and Regions



Appendix F: References

Alzheimer Society of Canada. 2010. *Rising Tide: The Impact of Dementia on Canadian Society*.

Arim R. 2015. *A Profile of Persons with Disabilities Among Canadians Aged 15 Years or Older*, 2012. Canadian Survey on Disability, 2012. Statistics Canada Catalogue no. 89-654-X. Ottawa: Statistics Canada.

Banerjee A. 2007. *An Overview of Long-Term Care in Canada and Selected Provinces and Territories*. Toronto: Women and Health Care Reform Group.

Bohnert N, Chagnon J, and Dion P. 2015a. *Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038)*. Statistics Canada Catalogue no. 91-520-X. Ottawa; Statistics Canada.

Bohnert N, Chagnon J, Coulombe S, Dion P and Martel L. 2015b. *Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038): Technical Report on Methodology and Assumptions*. Statistics Canada Catalogue no. 91-620-X. Ottawa; Statistics Canada.

BC Seniors Services and Housing Information Society. 2011. Seniors Housing Options Grid. Web 2015.

British Columbia. 2009. Provincial Health Officer. *Pathways to Health and Healing: 2nd Report on the Health and Well-Being of Aboriginal People in British Columbia. Provincial Health Officer's Annual Report 2007.* Victoria: Healthy Living and Sport.

Canada. 2011a. Office of the Auditor General of Canada. *Northwest Territories Health Programs and Services, 2011*. *D*epartment of Health and Social Services. Catalogue no. FA3-69/2011E-pdf. Ottawa: Auditor General. Web 2015.

---. 2011b. Human Resources and Skills Development Canada. *Disability in Canada: A 2006 Profile*. Human Resources and Skills Canada Catalogue no. HS64-11/2010. Ottawa: HRSD.

---. 2009. Senate. Special Senate Committee on Aging. *Canada's Aging Population: Seizing the Opportunity*. Ed. Hon. S. Carstairs and Hon. W.J. Keon.

---. Statistics Canada. 2015a. *Table 051-0012, Interprovincial Migrants, by Age Group and Sex, Canada, Provinces and Territories, Annual (Persons),* CANSIM. Accessed September, 2015.

---. Statistics Canada. 2015b. 2011 National Household Survey: Data Tables (various). Web 2015.

---. Statistics Canada. 2015c. *Table 102-0504, Deaths and Mortality Rates, by Age Group and Sex, Canada, Provinces and Territories, Annual*, CANSIM. Accessed 2015.

---. Statistics Canada. 2015d. *Table 102-0502, Deaths, by Month, Canada, Provinces and Territories, Annual*, CANSIM. Accessed 2015.

---. Statistics Canada. 2014. Social and Aboriginal Statistics Division. *Canadian Survey on Disability, 2012: Concepts and Methods Guide*. Statistics Canada Catalogue no. 89-654-X. Ottawa: Statistics Canada.

---. Statistics Canada. 2013. Life Tables, Canada, Provinces and Territories, 2009-2011. Catalogue no. 84-537-X, no. 5. Ottawa; Statistics Canada.

---. Statistics Canada. 2010a. *Population Projections for Canada, Provinces and Territories, 2009 to 2036.* Statistics Canada Catalogue no. 91-520-X. Ottawa: Statistics Canada.

---. Statistics Canada. 2010b. *Participation and Activity Limitation Survey, 2006: Tables (Part VI)*. Statistics Canada Catalogue no. 89-628-X, no. 015. Ottawa: Statistics Canada.

Canadian Foundation for Healthcare Improvement. 2013. *Making the Case for Change: Advancing the NWT Chronic Disease Management Strategy.* Yellowknife: Northwest Territories Department of Health and Social Services.

Canadian Health Services Research Foundation. 2011. *Better with Age: Health Systems Planning for the Aging Population, Synthesis Report*. Ottawa.

---. 2002. *Sustainability of Canada's Healthcare System*. Ottawa: Commission on the Future of Health Care in Canada.

Canadian Institute for Health Information. 2011a. *Health Care in Canada, 2011: A Focus on Seniors and Aging.* Ottawa: CIHI.

---. 2011b. *Health Care Cost Drivers: The Facts*. Ottawa.

---. 2011c. *National Health Expenditure Trends, 1975 to 2011*. Ottawa.

Canadian Mortgage and Housing Corporation. 2006. *Canadian Housing Observer 2006*. Ottawa.

Centers for Disease Control and Prevention. 2015. Fetal Alcohol Spectrum Disorders, Data and Statistics Prevalence of FASDs. Web 2015.

Chateau D, Doupe M, Walld R, Soodeen R, Ouelette C, and Rajotte L. 2012. *Projecting Personal Care Home Bed Equivalent Needs in Manitoba Through 2036.* Winnipeg: Manitoba Centre for Health Policy.

Coyte PC, Laporte A, Baranek PM, and Croson WS. 2002. *Forecasting Facility and In-home Long-Term Care for the Elderly in Ontario: The Impact of Improving Health and Changing Preferences.* Report prepared under grant 02709 from the Ministry of Health and Long-Term Care in Ontario to the University of Toronto.

Coyte PC, Laporte A, and Stewart S. 2000. *Identifying the Assumptions Used by Various Jurisdictions to Forecast Demands for Home and Facility-Based Care for the Elderly*. Report prepared under grant 02709 from the Ministry of Health and Long-Term Care in Ontario to the University of Toronto.

Decady Y, and Greenberg L. 2014. *Ninety Years of Change in Life Expectancy*. Health at a Glance. Statistics Canada Catalogue no. 82-624-X. Ottawa: Statistics Canada.

Evans RG, McGrail KM, Morgan SG, Barer ML, and Hertzman C. 2001. Apocalypse NO: Population Aging and the Future of Health Care Systems. *Canadian Journal on Aging;* 20(1):160-191.

Frohlich N, De Coster C, and Dik N. 2002. *Estimating Personal Care Home Bed Requirements.* Manitoba Centre for Health Policy. Winnipeg, MB: University of Manitoba.

Hollander Analytical Services Ltd. 2015. *A Facility Bed Utilization Review.* Report submitted to AVENS - A Community for Seniors and the GNWT Department of Health and Social Services.

Institute of Medicine. 2015. *Transforming Health Care Scheduling and Access: Getting to Now.* Kaplan G, Hamilton Lopez M, McGinnis JM, eds. Washington, DC: The National Academies Press.

Institute of Medicine and the National Research Council. 2015. *The Future of Home Health Care: Workshop Summary*. Washington, DC: The National Academies Press.

Jacklin KM, Walker JD, and Shawande M. 2013. The Emergence of Dementia as a Health Concern Among First Nations Populations in Alberta, Canada. *Canadian Journal of Public Health;* 104(1):e39-e44.

Kobayashi + Zedda Architects. 2013. *New Whitehorse Continuing Care Facility: Facility Review and Functional Program*. Report prepared in association with Neale Staniszkis Doll Adams Architects, Options Consulting, Ennova Engineering, Northern Climate Engineering, and Cobalk Engineering and submitted to the Yukon Government Department of Health and Social Services.

KPMG Consulting. 2002. *Long Term Care Needs Assessment.* Report submitted to the GNWT Department of Health and Social Services.

Krause E. 1997. Structural Modifications of Effective Demand and Supply in Long Term Care for the Elderly in Saskatchewan and Saskatoon. *Saskatchewan Economics Journal*; 1:15-21.

Kuhn M, and Nuscheler R. 2011. Optimal Public Provision of Nursing Homes and the Role of Information. *Journal of Health Economics;* 30(4):795–810.

Lefebvre S. 2002. Housing: An Income Issue. Statistics Canada Catalogue no. 75-001-XIE (archived). *Perspectives on Labour and Income* 3(6).

Malenfant ÉC, and Morency JD. 2012. *Population Projections by Aboriginal Identity in Canada, 2006 to 2031*. Statistics Canada Catalogue no. 91-552-X. Ottawa: Statistics Canada.

Martel L. 2013. *'Mortality: Overview, 2010 and 2011'* Component of Statistics Canada Catalogue no. 91-209-x. Statistics Canada.

MNP LLP. 2013. *Continuing Care Review*. Report submitted to the GNWT Department of Health and Social Services.

Morency JD, Caron-Malenfant ÉC, Coulombe S, and Langlois S. 2015. *Population Projections by Aboriginal Identity in Canada, 2006 to 2031*. Statistics Canada Catalogue no. 91-552-X. Ottawa: Statistics Canada.

National Research Council. 2012. *Aging and the Macroeconomy: Long-term Implications of an Older Population*. Committee on the Long-Run Macroeconomic Effects of the Aging U.S. Population. Board on Mathematical Sciences and their Applications, Division on Engineering and Physical Sciences, and Committee on Population, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

New Zealand. 2012. *Long-Term Care and Fiscal Sustainability: Draft Paper for the Long-Term Fiscal External Panel.* Wellington: New Zealand Treasury.

Northwest Territories. Finance. 2015. *Growing the NWT: Supporting Population Growth of the NWT*. Report and Background Research. Yellowknife: Fiscal Policy Division.

---. Health and Social Services. 2015a. *Public Performance Measures Report* 2015. NWT Health and Social Services System. Tabled Document 263-17(5). Yellowknife: Health and Social Services.

---. Health and Social Services. 2015b. *NWT EPEC-O Canada Palliative Care Workshop Summary Report*. May 20-21, 2015. Yellowknife, NT.

---. Health and Social Services. 2015c. *Report on Substance Use and Addiction 2012 NWT.* Yellowknife: Health and Social Services.

---. Health and Social Services. 2015d. *Northwest Territories Continuing Care Standards*. Yellowknife: Health and Social Services.

---. Health and Social Services 2015e. *Report on Substance Use and Addiction: 2012 NWT*. Yellowknife: Health and Social Services.

---. Health and Social Services. 2014a. *NWT Framework and Action Plan: Palliative Approach to Care. Quality of Life, Quality Care, for a Comfortable End of Life Journey*. Final Draft Continuing Care and Health Systems Planning.

---. Health and Social Services. 2014b. *Our Elders: Our Communities, Best Health, Best Care, for a Better Future*.

---. Health and Social Services. 2013a. *Northwest Territories Hospitalization Report*. Yellowknife: Health and Social Services.

---. Health and Social Services. 2013b. Evaluation *of NWT Respite Services*, Final Report.

---. Health and Social Services. 2013c. *Territorial Flexible Respite Model,* Draft Business Case.

---. Health and Social Services. 2011a. *Northwest Territories Health Status Report.* Yellowknife: Health and Social Services.

---. Health and Social Services. 2011b. *Building on Our Foundation, 2011-2016: A Strategic Plan for the NWT Health and Social Services System*.

---. Health and Social Services. 2008. *Continuing Care Framework and Action Plan*. Yellowknife: Health and Social Services.

---. Health and Social Services. 2005. *Integrated Service Delivery Model for the NWT Health and Social Services System: Reforming Facility and Medical Services in the NWT: A New Direction.* Yellowknife: Health and Social Services.

---. Health and Social Services. 2004. *Integrated Service Delivery Model for the NWT Health and Social Services System: A Detailed Description.* Yellowknife: Health and Social Services.

---. NWT Bureau of Statistics. 2014. *2014 NWT Community Survey*. Yellowknife: NWT Bureau of Statistics.

---. NWT Bureau of Statistics. 2012. *Population Projections by Community, 2011-2031*. Yellowknife: NWT Bureau of Statistics.

---. NWT Bureau of Statistics. 2011. *Population Share, by Community Type and Ethnicity, NWT 1981-2010*. Yellowknife: NWT Bureau of Statistics.

---. NWT Bureau of Statistics. 2007. *Participation and Activity Limitation Survey: 2006*. NWT Bureau of Statistics newstats no. 2007-034. Yellowknife: NWT Bureau of Statistics.

Norton EC. 2000. *Long-Term Care,* ch.17 in Culyer AJ and Newhouse JP eds., Handbook of Health Economics, 1:955-994. Elsevier.

Organization for Economic Co-operation and Development. 2010. *OECD Factbook 2010: Economic, Environmental and Social Statistics*. Paris: OECD.

Ospina M, and Dennett L. 2013. *Systematic Review on the Prevalence of Fetal Alcohol Spectrum Disorders*. Edmonton: Institute of Health Economics.

Pacey M. 2009. *Fetal Alcohol Syndrome and Fetal Alcohol Spectrum Disorder Among Aboriginal Peoples: A Review of Prevalence*. Prince George: National Collaborating Centre for Aboriginal Health.

PSAV Architects Ltd. 2010. *Planning Study: Long Term Care Facilities: Operational Plan/Functional Program/Design Principles.* Report submitted to the GNWT Department of Health and Social Services and Department of Public Works and Services.

Rotermann M. 2006. Seniors' Health Care Use. *Health Reports*; 16(Suppl.):33-45.

Smith K, Flicker L, Lautenschlager NT, et al. 2008. High Prevalence of Dementia and Cognitive Impairment in Indigenous Australians. *Neurology*; 71(19):1470-1473.

Tjepkema M, and Wilkins R. 2011. Remaining Life Expectancy at Age 25 and Probability of Survival to Age 75, by Socio-economic Status and Aboriginal Ancestry. *Health Reports*; 22(4):31-36.

T-Square Architecture. 2014. *New Whitehorse Continuing Care Facility Business Case Analysis*. Report prepared in association with M. Saar Architecture, Cornerstone Planning Group, LCVM Consultants, Research Northwest, and Jon Schmidt and submitted to the Yukon Government Department of Health and Social Services.

Verma R. 2005. Evaluation of Projections of Populations for the Aboriginal Identity Groups in Canada, 1996 to 2001. *Canadian Studies in Population*; 32(2):229-255.

Verma R, Michalowski M, and Gauvin PR. 2004. Abridged Life Tables for Registered Indians in Canada, 1976-1980 to 1996-2000. *Canadian Studies in Population*; 31(2):197-235.

Weihs K. 2015. Manitoba's Framework for Alzheimer's Disease and Other Dementias. Presented at: CAG Pre-conference: *Supporting Canadians Living with Dementia, Provincial Dementia Strategies - Lessons Learned*, October 23, 2015. Calgary, AB.

Whiteworks Consulting. 2014. *Means-Tested User Pay for Long Term Care: An Examination of Approaches for AVENS.* Report submitted to AVENS - A Community for Seniors.

Wilkins R, Tjepkema M, Mustard C, and Choinière R. 2008a. The Canadian Census Mortality Follow-up Study 1991 through 2001. *Health Reports*; 19(3):25-43.

Wilkins R, Uppal S, Finès P, Senécal S, Guimond E, and Dion R. 2008b. Life Expectancy in the Inuit-Inhabited Areas of Canada, 1989 to 2003. *Health Reports*; 19(1):7-20.

Zaharia J. 2015. Supporting Canadians Living with Dementia (British Columbia). Presented at: CAG Pre-conference: *Supporting Canadians Living with Dementia, Provincial Dementia Strategies - Lessons Learned,* October 23, 2015. Calgary, AB.

Zhang Y, Puterman ML, Nelson M, and Atkins D. 2012a. Simulation Optimization Approach for Long-Term Care Capacity Planning. *Operations Research*; 60(2):249-261.

Zhang Y, Puterman ML, and Atkins D. 2012b. Residential Long-Term Care Capacity Planning: The Shortcomings of Ratio-Based Forecasts. *Health Care Policy*; 7(4):68-81.