

LEGISLATIVE ASSEMBLY OF THE
NORTHWEST TERRITORIES
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AMBULANCE SERVICES IN THE NORTHWEST TERRITORIES

Final Report of the
Air and Ground Ambulance Policy Advisory Committee

Presented to the Minister of Health
October, 1985.

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RECOGNITION

The members of the Air and Ground Ambulance Policy Advisory Committee recognize the commitment and dedication of the many people who for years have provided vital transportation and emergency health care services to persons in need in the N.W.T. They include various municipal ambulance services and crews, Cominco Limited in Pine Point, the R.C.M.P., the St. John Ambulance, Health and Welfare field personnel, Government of the N.W.T. field personnel, private air carriers, hospital staff, physicians and numerous volunteers across the north.

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The members of the committee wish to thank the people listed here for their thoughtful and helpful comments and recommendations in response to the distribution of the committee's Preliminary Report in March, 1985.

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EXECUTIVE SUMMARY

In April of 1984, the Minister of Health appointed the Air and Ground Ambulance Policy Advisory Committee and instructed the members to examine current ambulance services in the N.W.T. The committee was to advise the Department of Health regarding the development of legislation, regulations, and other aspects of policy pertaining to air and ground ambulance services. This report summarizes the findings and recommendations of the committee.

Examination of Current Services

An examination of current services was carried out largely by means of surveys of municipalities, Regional Offices of the Territorial Government, Health and Welfare regional and field personnel. For comparative purposes, aspects of ambulance services in the ten provinces and the Yukon Territory were also studied.

Ground ambulance services with dedicated ambulance vehicles are operated in these communities: Frobisher Bay, Fort Smith, Hay River, Pine Point, Fort Simpson, Rae-Edzo, Yellowknife and Inuvik. In other communities in the N.W.T. patients are transported by a variety of ad hoc means such as taxis, R.C.M.P. vehicles, municipal vehicles, G.N.W.T. vehicles, Health and Welfare vehicles, volunteers, relatives, and so on.

People requiring transportation by air for medical reasons are transported by private air carriers. Depending on the

patient's circumstances, medical travel costs are paid by one of the following: the patient's employer, Health and Welfare Canada, Government of the Northwest Territories (Medical Transportation Program) or other agents as the case may be.

The analysis of current services revealed the following inadequacies:

1. It has not been made clear who is responsible for ensuring the provision of ambulance services in the N.W.T.
2. There is no legislation or legislative authority for the establishment and provision of ambulance services.
3. No uniform standards for ambulance services have been established, including standards for ambulance attendant training levels.
4. Ambulance services are not monitored or inspected by any authority other than the operators themselves.
5. Adequate formal procedures for ambulance coverage of the N.W.T. highway system have never been developed.
6. The level of service in most localities is low with respect to ground ambulance services. In many settlements the service is provided by anyone who happens to have a vehicle available at the time of need.

7. Ground ambulance services in many localities are largely dependent on volunteers who eventually move away, thus creating a lack of continuity in service.
8. There are no uniform funding mechanisms in place for ground ambulance services.
9. Coordination among the various components of the emergency health services network is inadequate.
10. There is a need for an improved communications system between the various components of the emergency health services network.
11. Uniform information reporting procedures are not in place for ambulance services in the N.W.T.
12. Liability insurance coverage is an important concern of the operators of ground ambulance services.

The committee's recommendations are intended to redress these deficiencies.

New Directions for Emergency Health Services

The committee has formulated thirty-three recommendations for improving emergency health services (ambulance services in particular). The recommendations are based on the six general principles described below. The recommendations corresponding to each of the six principles are indicated. Numbers in brackets indicate the page location of each recommendation in the body of the report.

1. Recognition of an Emergency Health Services Network

It is essential to recognize that ambulance services are one component of a broad emergency health services network. Ambulance services should not be examined and altered in isolation from other emergency services. The following recommendations reflect this principle:

Recommendation 1 - evaluation of emergency health care resources (20)

Recommendation 2 - planning for improvements in resources (21)

2. Basic levels of Service

There is a need to ensure basic levels of ambulance services in all N.W.T. communities. The following recommendations reflect this principle:

Recommendation 5 - three levels of standards for ground ambulance services (23)

Recommendation 9 - promotion of volunteerism (27)

Recommendation 12 - availability of vehicles in Level III communities (30)

Recommendation 15 - emergency response teams in Level I communities (34)

Recommendation 24 - policies and procedures for highway coverage (38)

Recommendation 25 - provision of coverage for highway system (39)

Recommendation 30

and 31 - improved communications system (49 and 50)

Recommendation 32 - ambulance dispatching for highways (51)

3. Uniform Standards

Within each of the three levels applicable to ground ambulance services, there is a need for uniform standards with respect to ambulance attendant training requirements, ambulance vehicles and equipment. There is also a need for uniform standards applicable to air ambulance services.

The following recommendations are based on this principle:

- Recommendation 6 - staff training standards, Level I (26)
- Recommendation 7 - staff training standards, Level II (26)
- Recommendation 8 - staff training standards, Level III (27)
- Recommendation 10 - staff training programs, EMT-A (28)
- Recommendation 11 - staff training programs, First Aid (29)
- Recommendation 27 - voluntary compliance by carriers regarding air ambulance standards (44)
- Recommendation 28 - special training for air medical evacuation personnel (45)

4. A Mix of Ambulance Service Providers

It is the committee's view that progress can be realized without altering the current mix of air and ground service providers. Any provider able to meet the standards should be permitted to operate an ambulance service. This principle is reflected in the following recommendations:

Recommendation 13 - provision by operators able to meet ground ambulance standards (31)

Recommendation 14 - provision by volunteer organizations (33)

Recommendation 26 - provision by private air carriers (39)

5. Adequate Financial Resources

Any acceptance of the foregoing principles and their associated recommendations will necessitate the provision of adequate financial resources by the Government of the Northwest Territories in order that basic levels of services with uniform standards can be achieved. Notwithstanding the responsibility of the Territorial Government, financial input should continue from territorial, federal and private insurance agencies. The following recommendations are based on the principle of adequate financial resources:

- Recommendation 16 - responsibility for funding to rest with G.N.W.T. (35)
- Recommendation 17 - continued financial input from other insurance agencies (35)
- Recommendation 18 - cost-sharing with the federal government (35)
- Recommendation 19 - program funding for ground ambulance services (36)
- Recommendation 20 - examination of user fee policies (37)
- Recommendation 21 - capital costs funded by Department of Health (37)
- Recommendation 22 - training costs funded by Department of Education (37)
- Recommendation 23 - common accounting and reporting system (38)

6. Ambulance Services: A Territorial Government Responsibility

As reflected in most of the recommendations, the committee views ambulance services (both ground and air) as being a responsibility of the Territorial Government. The committee considers it essential that the Territorial Government recognize ambulance services as a health matter, and therefore, within the jurisdiction of the G.N.W.T. The acceptance of this principle must come first and foremost. This principle is most clearly evident in the following recommendations:

- Recommendation 3 - enactment of legislation (21)
- Recommendation 4 - content of legislation (22)

Recommendation 29 - planning for emergency health
services (48)

Recommendation 33 - public information and education
(52)

Phasing of Recommendations

A recommended schedule for phasing in the recommendations of the committee is depicted in the accompanying chart. The schedule outlines a five-year phase-in period.

The committee members consider that each of the thirty-three recommendations is an important building block in the development of an ambulance services policy for the N.W.T. Nevertheless, priorities among the recommendations must be recognized. The enactment of legislation must occur first (Recommendations 3 and 4), thereby setting the stage for all subsequent program innovations.

Second priority must be given to the development of rational funding mechanisms (Recommendations 16 to 23) in order that the standards set in legislation can be achieved.

Cost of Recommendations

The potential costs of implementing the committee's recommendations are summarized in the accompanying table. The figures represent the gross costs of operating ground ambulance services based on the recommendations in this report, and are expressed in 1985 constant dollars. Details of how these cost figures were generated are contained in Appendix 12.

PHASING OF RECOMMENDATIONS

| RECOMMENDATION | SCHEDULE FOR PHASING RECOMMENDATIONS | | | | | | | | | | | | | |
|--|--------------------------------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
| | Feb 1 86 | Apr 1 86 | June 1 86 | Sept 1 86 | Dec 31 86 | Apr 1 87 | June 1 87 | Sept 1 87 | Mar 31 88 | Mar 31 89 | Mar 31 90 | Mar 31 91 | Mar 31 92 | Subsequent Years |
| A. INDIVIDUAL AND COMMUNITY PREPARED- NESS FOR HEALTH EMERGENCIES 1. Assessment of resources 2. Planning and upgrading | ----- | | | | | | | | | | | | | |
| B. AMBULANCE LEGISLATION Recommendations 3-8 9. Encouragement of volunteerism | ----- | | | | | | | | | | | | | |
| C. TRAINING PROGRAMS Recommendations 10 and 11 | ----- | | | | | | | | | | | | | |
| D. VEHICLE AND EQUIPMENT STANDARDS 12. Level III vehicles | ----- | | | | | | | | | | | | | |
| E. PROVISION OF GROUND AMBULANCE SERVICES 13. By operators able to meet standards 14. Volunteer organizations, Levels II and III 15. Level I Emergency Response Teams | ----- | | | | | | | | | | | | | |
| F. FUNDING GROUND AMBULANCE SERVICES Recommendations 16 to 23 | ----- | | | | | | | | | | | | | |
| G. HIGHWAY AMBULANCE SERVICES Recommendations 24 and 25 | ----- | | | | | | | | | | | | | |
| H. AIR AMBULANCE SERVICES AND STANDARDS 26. Provision by private carrier 27. Voluntary compliance 28. Medical and Survival training for health care personnel | ----- | | | | | | | | | | | | | |
| I. COORDINATION 29. Dept. of Health - planning 30. Communications inventory 31. One common communications system for emergency health services 32. R.C.M.P. dispatching for high- way ambulance services 33. Dept. of Health - public education and information | ----- | | | | | | | | | | | | | |

Dotted lines indicate periods of planning, development.
Solid lines indicate periods of implementation.

COST OF RECOMMENDATIONS

I. Scheme 1

Under Scheme 1, the staffing of the ambulance service in Yellowknife would include six full-time attendants. In each of the other seven Level I communities, the staffing would include one full-time attendant and a corps of volunteers.

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|--|--------------------|------------------|------------------|------------------|------------------|
| | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| TOTAL | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 1,323,800 | 1,554,200 | 1,784,600 | 2,068,600 | 2,352,600 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and | | | | | |
| Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 2,193,300 | 2,383,370 | 2,618,750 | 2,838,380 | 3,083,000 |

Continued.

II. Scheme 2

Under Scheme 2, the staffing of ambulance services in all eight Level I communities would include six full-time attendants.

| COST ITEMS | FISCAL YEAR | | | | |
|--|------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 126,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 2,576,000 | 2,806,400 | 3,036,800 | 3,320,800 | 3,604,800 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and | | | | | |
| Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | | | | | |
| TOTAL | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 3,445,500 | 3,635,570 | 3,870,950 | 4,090,580 | 4,335,200 |

The figures do not account for current costs or for potential revenues from other sources. The costs itemized in the table would be shared by the Department of Health and Health and Welfare Canada (Recommendation 18).

The two schemes described in the table differ with respect to the staffing costs for ambulance services in the larger communities (Level I), with Scheme 1 generating the lower cost.

In effect the two schemes describe the upper and lower limits of a range of possible staffing profiles and costs. The committee considered such a range necessary so that the characteristics and circumstances unique to each Level I community can be taken into account in the planning of ambulance services. For example, in the smaller Level I communities, a staff complement of six full-time attendants (Scheme 2) would be difficult to justify due to the probability of relatively few calls per year. On the other hand, in the intermediate size Level I communities, a staff complement of only one full-time attendant (Scheme 1) may not be adequate.

It is highly likely that the ideal situation may lie somewhere between Schemes 1 and 2, once the unique circumstances of each community have been considered.

Conclusion

The members of the committee consider that the principles and recommendations offered here represent an important first step in the improvement of emergency health services in the N.W.T. Furthermore, the recommendations should be achievable within the suggested time frame.

I. INTRODUCTION

A. Formation of the Committee

The need for a comprehensive ambulance services policy for the Northwest Territories has become apparent for a number of reasons. In recent years municipalities providing ambulance services have expressed concern over the absence of legislative authority and adequate funding for the provision of the service. The expansion and increased usage of the N.W.T. highway system, and the lack of formal arrangements for highway ambulance services have further highlighted the need for a comprehensive policy.

In November of 1983, the Executive Director of the Northwest Territories Association of Municipalities wrote to the Commissioner of the Northwest Territories summarizing the concerns of the Association's members, and asked that action be taken on the matter of ambulance services policy.¹ The Commissioner then requested that the Departments of Health and Local Government "work together to investigate the establishment of an ambulance services policy for the N.W.T."²

¹ Letter from Anita Perry, Executive Director, Northwest Territories Association of Municipalities to Commissioner John Parker, November 9, 1983.

² Letter from Commissioner John Parker to Anita Perry, Executive Director, Northwest Territories Association of Municipalities, November 14, 1983.

Subsequent to the Commissioner's request, the Minister of Health appointed the Air and Ground Ambulance Policy Advisory Committee, in April, 1984. The committee was instructed to advise the Department of Health on the development of legislation, regulations and policy with respect to the transportation of medical patients.

Briefly stated, the duties of the committee were to review existing services, legislation, funding mechanisms and other aspects of ambulance services in the Northwest Territories and other jurisdictions in Canada, to identify current deficiencies with respect to ambulance services in the N.W.T., and to formulate recommendations for improving existing services. The complete terms of reference are contained in Appendix 1.

In interpreting the terms of reference, the committee members did not consider their role to be the design in detail of ambulance services for the Northwest Territories. Rather, the committee's role was viewed as the formulation of general recommendations to guide the Department of Health in the development of ambulance services policy.

B. Method of Operation

The committee met on sixteen occasions between June, 1984 and October, 1985. The members conducted their work in two phases. The first phase consisted of a review of current services and their deficiencies as well as a review of other jurisdictions. Much of the information on current services in the N.W.T. was acquired by surveying municipalities, Regional offices of the Government of the Northwest Territories, and Health and Welfare field personnel.

Because uniform reporting procedures are not in place for ambulance services in the N.W.T., reliable data describing current ambulance utilization and the costs of current services could not be obtained. The first phase was completed by August, 1984.

The second phase of the committee's work consisted of the formulation of recommendations for improving ambulance services in the N.W.T. The recommendations apply to all aspects of ambulance services such as legislation, standards, provision and coordination of services, funding mechanisms and so on. At one meeting during this phase, the committee invited as a guest speaker Mr. W.J. Tudge from the Alberta Department of Hospitals and Medical Care. Mr. Tudge came to the committee with a wealth of experience in the analysis and development of emergency health services and his presentation was highly informative.

During the second phase of the project, the committee presented a preliminary report to the Minister of Health on January 18, 1985, summarizing their findings and recommendations to that date. The Minister tabled the document in the Legislative Assembly in February. Subsequently, it was distributed to a large number of organizations for comment, including hospital boards, municipal and band councils, professional organizations, various interest groups and political organizations, government departments and ambulance operators. Twenty-five written submissions were received in response.

The committee then prepared this, the final report, using as a basis the preliminary report, written submissions, and

recommendations from a subcommittee appointed to examine air and ground ambulance standards. The format of the final report is as follows. In part C of Section I, the committee have included their definition of the term "ambulance". The place of ambulance services in the broader context of emergency health services is described in part D of Section I. The first phase of the project, the analysis of current services, is summarized in Section II and in Appendices 2 to 5. The recommendations of the committee are contained in Section III of the report. Possible time frames for implementation, and the potential costs of the recommendations are described in Section IV.

C. Definition of Ambulance

In order to define more precisely the scope of the study, the committee developed a definition of the term "ambulance":

An ambulance is a conveyance used or intended to be used and which is equipped for the purpose of transporting a person who is sick, injured, incapacitated or otherwise in need of immediate medical care and requires transportation.

This definition encompasses all "conveyances", including methods of ground, air and water transportation.

D. Ambulance Services: One Component of Emergency Health Services

It is essential to acknowledge that ambulance services comprise only one component in the continuum of emergency

health services. This continuum begins at the moment when a person first experiences a health emergency until that person is under care in the facility that is best suited to meet his or her emergency health care needs, and the emergency is passed. High quality emergency health care is possible only when all stages in the continuum, including ambulance services, are of an acceptable quality, and coordination of the various stages is achieved.

Although the committee's terms of reference were restricted to the study of ambulance services, several general recommendations are made later in this report which acknowledge the importance of other components in the emergency health services network.

II. ANALYSIS OF CURRENT SERVICES

A. Individual and Community Capabilities for Emergency Health Care

One component of the emergency health services network which precedes the ambulance component is the concept of individual and family preparedness for health emergencies. The concept of individual responsibility in the prevention of health emergencies and in dealing with such emergencies when they occur cannot be overemphasized. Ideally, everyone should be familiar with basic first aid procedures and should know who to contact in order to gain access to more sophisticated emergency health care in the community. Information on the levels of individual and family preparedness for health emergencies is lacking, and a study of this kind would have been beyond the terms of reference and the resources of this committee. However, in Section III, the committee has recommended measures to redress this lack of information.

Ambulance services fall within the broader concept of community capabilities for the provision of emergency health care. This concept encompasses the availability and organization of resources at the community level which make possible the provision of more advanced emergency care to those in need. These resources include: ambulance services within the community; health care facilities, equipment, supplies and personnel; methods of communication with other communities; and a means of moving patients to communities

with more sophisticated treatment resources. A comprehensive analysis of all the resources available in each community was beyond the terms of reference and the resources of the committee, which confined its work to the study of ambulance services. However, in section III the committee has recommended measures which would improve the current knowledge of community capabilities for emergency health care.

B. Current Ambulance Services

1. Introduction

By means of questionnaires, the members of the committee collected information on existing ambulance services in the N.W.T., including information about ambulance personnel, material and financial resources, and the organization and administration of services. Ambulance services in the N.W.T. consist of three components: ground, highway and air ambulance services.

2. Ground Ambulance Services

a) Communities With Ambulance Services

There are eight communities in the Northwest Territories with ground ambulance services: Frobisher Bay, Fort Smith, Hay River, Pine Point, Fort Simpson, Yellowknife, Edzo and Inuvik (refer to Appendix 2 - Communities with Ground Ambulance Services). In five of these communities the ambulances are owned and operated by the municipality, usually out of the local firehall (Frobisher Bay, Hay River, Fort Simpson and Yellowknife) or from the hospital (Fort Smith). In Pine Point, the

ambulance is owned and operated by Pine Point Mines (Cominco). Health and Welfare Canada owns and operates the Edzo ambulance. The St. John Ambulance operates the ambulance in Inuvik.

Staffing patterns are variable; however, one common characteristic in most communities is the participating of volunteers in the provision of ambulance services. In Yellowknife and Fort Smith, fire department staff also work as ambulance drivers and attendants. In Pine Point, employees of Pine Point Mines staff the ambulance.

The levels of staff training are also variable. Training does not exceed St. John Ambulance Advanced First Aid and Cardiopulmonary Resuscitation (CPR) in any of the communities. In most of the eight communities the minimum level of training is Standard First Aid and CPR. Some attendants are qualified to teach St. John Ambulance First Aid courses.

There is no uniformity with respect to standards for ambulance vehicles and equipment in the Northwest Territories. In Frobisher Bay and Inuvik, Ontario standards are the benchmark. In Fort Smith, Hay River and Pine Point the ambulances have been described as meeting "basic standards"; however, these are not defined. Information on vehicles and equipment standards for the ambulances in Edzo and Fort Simpson is not available. In Yellowknife, ambulance vehicles and equipment are said to meet those of "emergency response units in the provinces".

The lack of uniformity with respect to standards for staff training, vehicles and equipment is largely attributable to the absence of legislation in the Northwest Territories governing the provision of ambulance services. This void affects other aspects of ambulance services including funding mechanisms.

No systematic method for funding ambulance services has been developed yet in the N.W.T. As Appendix 2 illustrates, there are as many methods of funding as there are communities providing the service. The communities are often left to fend for themselves in providing sufficient resources.

With respect to the coordination of services, the most significant shortcoming has been the absence of system-wide planning and development initiatives for emergency health services. Until now, the Territorial Government has not acknowledged any responsibility for this function.

b) Communities Without Ambulance Services

Most communities in the N.W.T. do not have dedicated ambulance services (see Appendix 3). Patients are transported by a variety of ad hoc means including vehicles of the municipal, territorial and federal governments, the R.C.M.P., volunteers, relatives and by taxis. In many cases, the cost of the service is absorbed by the organizations or individuals providing the service. The quality of patient transportation services in these communities is less than desirable in spite of the many well-meaning and

dedicated people involved. Once again this is largely attributable to the absence of ambulance legislation and system-wide planning and development of emergency health services, functions which should be the responsibility of the Territorial Government.

3. Highway Ambulance Services

Ambulance services are provided on Territorial highways as follows:

- a) The ambulance from Yellowknife responds to calls on Highway 4 and on Highway 3 halfway to Rae.
- b) The ambulance in Edzo responds to calls on Highway 3 from half way to Yellowknife to Fort Providence.
- c) The Hay River ambulance provides coverage on Highway 2 as far as the N.W.T. - Alberta border, on Highway 1 as far as the Mackenzie River crossing, and on Highway 5 to the junction with Highway 6.
- d) The Fort Smith ambulance covers Highway 6 from Fort Smith to the junction of Highways 5 and 6.
- e) The ambulance from Pine Point Mine provides coverage on Highway 6 from the junction with Highway 5 to Fort Resolution.
- f) The ambulance from Fort Simpson provides coverage on parts of Highway 1 and Highway 7 (the Liard Highway).

- g) The Dempster Highway is covered from the Yukon Border to Arctic Red River by the nursing station in Fort McPherson. The nursing station responds to calls from the local R.C.M.P. detachment who are usually the first to arrive at the scene of an accident. The ambulance service in Inuvik will respond to highway calls when requested by the R.C.M.P. Coverage is provided as far as Arctic Red River when necessary.
- h) Fixed wing or rotary aircraft are called to the scene of an accident as required.

No formal policies or procedures have ever been developed regarding ambulance coverage, either by road or by air, for N.W.T. highways. Municipalities with ambulances have been reluctant to guarantee such services for several reasons. First of all, the municipal councils believe highway ambulance coverage is the responsibility of the Territorial Government. Secondly, when an ambulance is responding to a highway call it is unavailable for service in the community. Finally the municipalities, by providing highway coverage, believe they are subsidizing the Territorial Government.

Those municipalities on the highway that currently provide ambulance services were asked how highway ambulance services could be shared between the municipalities assuming the appropriate authority and adequate funding were provided by the G.N.W.T. Responses to the question were variable. Four communities expressed an unwillingness to be involved in

providing highway ambulance services at all, stating that the Territorial Government should bear this responsibility. Three communities indicated that they would be willing to negotiate with the Territorial Government with respect to ambulance coverage on the highways.

Table I summarizes data on highway accidents in the N.W.T. from 1982 to 1984. During a period of approximately thirty months, 129 injury accidents occurred, of which ten involved fatalities. Ambulance vehicles responded to only 29 percent of these accidents. Aircraft responded in only two known instances. The data illustrate the need for formal arrangements for the provision of ambulance services on N.W.T. highways. This will be especially the case should usage of the highways increase in the future.

4. Air Ambulance Services

Persons requiring transportation by air for medical reasons are transported by private air carriers, the most prominent being Northwest Territorial Airways, Nordair, First Air, Bradley Air Services, Kenn Borek Air, Adlair, Calm Air, Keewatin Air, P.W.A., Aklak Air and Ptarmigan Air (see Appendix 4). Depending on the patient's circumstances, the airfare for the patient as well as any medical and non-medical escorts is paid by one of the following: the patient's employer, Health and Welfare Canada, the Government of the Northwest Territories (Medical Transportation Program) or other agents as the case may be (eg. Workers' Compensation Board).

TABLE 1. ROAD ACCIDENTS IN THE N.W.T., 1982 - 1984

| Community Closest to Accident | Accidents | | | Average Distance from Community (km) | Method of Transport |
|-------------------------------|-----------|--------|-------|--------------------------------------|---|
| | Fatal | Injury | Total | | |
| Fort Smith | 1 | - | 1 | 10 | Ambulance |
| Pine Point | 1 | 18 | 19 | 25 | 6 Ambulance 9 Private vehicles 4 unknown |
| Fort Resolution | - | 3 | 3 | 10 | 3 Ambulance |
| Hay River | 4 | 15 | 19 | 50-56 | 4 Ambulance 15 unknown |
| Fort Providence | - | 15 | 15 | 57 | 5 Police vehicles 2 Ambulance 7 Private vehicles 1 unknown |
| Fort Simpson | - | 9 | 9 | 31 | 1 Helicopter 3 Ambulance 5 Private vehicles |
| Fort Rae | 3 | 24 | 27 | 50 | 6 Ambulance 21 Private vehicle |
| Yellowknife | - | 21 | 21 | 27 | 9 Ambulance 5 Private Vehicle 7 unknown |
| Fort Liard | - | 5 | 5 | 21 | 3 Private vehicle 1 Police vehicle 1 Police aircraft to Fort Nelson |
| Inuvik | 1 | 7 | 8 | 21 | 2 Ambulance 6 Private Vehicle |
| Fort MacPherson | - | 2 | 2 | 10 | 2 Nursing Station vehicle |

TABLE 1. ROAD ACCIDENTS IN THE N.W.T., 1982-1984.

Notes to Table 1:

1. The data describes only accidents in which there were injuries (both fatal and non-fatal).
2. For an accident in which there were both fatalities and non-fatal injuries, the accident would only be counted in the fatal column.
3. The numbers describe the numbers of accidents, not fatalities and injuries.
4. Injuries include even very minor injuries.
5. The distances from communities are averages.
6. The data covers approximately 30 months.
7. Total accidents:

| | |
|-----------|-----|
| Non-fatal | 119 |
| Fatal | 10 |
| Total | 129 |
8. Average distance from community = 31 km.
9. Percent of times vehicles used for transport:

| | |
|-------------------------|-----|
| Ambulance | 29% |
| Private vehicle | 43% |
| Police vehicle | 5% |
| Nursing station vehicle | 1% |
| Helicopter | 1% |
| Police Aircraft | 1% |
| Unknown | 21% |

Data supplied by the Royal Canadian Mounted Police.

None of the aircraft used for medical evacuations in the N.W.T. have ambulance equipment on board, with the exception of some craft which have electrical outlets for incubators. Otherwise, equipment and supplies, usually in the form of portable medical evacuation kits are supplied by the institutions from which the patients are being evacuated (nursing stations and hospitals). Care on board the aircraft is provided by nurses from the institutions from which the patients are being evacuated, and occasionally by physicians.

Emergency medical evacuations are usually ordered by Health and Welfare nursing staff in the nursing stations, or by physicians or nurses in hospitals. Health and Welfare staff are issued guidelines for this purpose³.

Several problems have been identified with respect to air ambulance services:

- a) Many of the aircraft used for medical evacuations are cramped, and are poorly heated in winter.
- b) The requirement for medivac personnel to provide the necessary equipment is not perceived to be a problem. However, the need for more electrical outlets for electrical equipment has been identified.
- c) The survival training for medivac personnel is inadequate.
- d) Very few medivac personnel have received medical training specific to medical evacuations by air.

³Health and Welfare Canada. Interim Guidelines for Air Travel and Patient Evacuation.

C. Weaknesses in Current Services

Based on their analysis of current ambulance services in the Northwest Territories, the members of the committee have identified the following inadequacies:

1. It has not been made clear who is responsible for ensuring the provision of ambulance services in the N.W.T.
2. There is no legislation or legislative authority for the establishment and provision of ambulance services.
3. No uniform standards for ambulance services have been established.
4. Ambulance services are not monitored or inspected by any authority other than the operators themselves.
5. Adequate formal procedures for coverage of the N.W.T. highway system have never been developed.
6. The level of service in most localities is low with respect to ground ambulance services. In many settlements the service is provided by anyone who happens to have a vehicle available at the time of need.
7. Ground ambulance services in many localities are largely dependent on volunteers who eventually move away, thus creating a lack of continuity in service.
8. There are no uniform funding mechanisms in place for ground ambulance services.

9. Coordination among the various components of the emergency health services network is inadequate.
10. There is a need for an improved communications system between the various components of the emergency health services network.
11. Uniform information reporting procedures are not in place for ambulance services in the N.W.T.
12. Liability insurance coverage is an important concern of the operators of ground ambulance services.

The committee has developed a comprehensive set of recommendations intended to address these weaknesses. In developing their recommendations, the committee often gave consideration to the characteristics of ambulance services in other jurisdictions in Canada.

D. Ambulance Services in Other Jurisdictions

Included in the terms of reference of the committee was an instruction to examine ambulance services in other jurisdictions in Canada. This examination was completed during the first phase of the committee's work and the results are summarized in Appendix 5 - Ambulance Services in Other Jurisdictions. This information served as one source of ideas as the members of the committee developed their recommendations.

III. NEW DIRECTIONS FOR EMERGENCY HEALTH SERVICES

A. Introduction

The weaknesses in current services summarized in part II C indicate the need for major changes to most aspects of ambulance services in the Northwest Territories. These weaknesses cannot be attributed to those who have been providing the services over the years. On the contrary, if the list on page 16 is examined carefully a common theme appears, that being the absence of a central leadership role. That role should be assumed by the Government of the Northwest Territories.

Ambulance services constitute a part of the health care system, and as such are the responsibility of the Territorial Government. This is in keeping with similar interpretations and practices in all other jurisdictions in Canada except the province of Alberta, where the province has delegated much of its responsibility for ambulance services to the municipalities.

Using the interpretation above as a beginning point, the committee has formulated a series of recommendations which, if implemented, should result in significant improvements in emergency health services in the Northwest Territories.

The recommendations are based on the following six principles:

1. Ambulance services are one component of a broader emergency health services network.
2. All N.W.T. communities should have access to basic ambulance services.
3. Uniform standards should apply to ambulance services in the N.W.T.
4. The current mix of community, volunteer and privately operated ambulance services should be maintained.
5. Adequate financial resources should be provided such that basic levels of services with uniform standards can be achieved throughout the N.W.T.
6. Ambulance services are a health matter, and therefore are the responsibility of the Government of the Northwest Territories.

In the scenario described by the recommendations, the Government of the Northwest Territories would assume responsibility for the planning, regulation, funding and coordination of emergency health services, including ambulance services.

Their terms of reference limited the committee to an examination of ambulance services. Nevertheless, committee members are of the view that ambulance services should not be studied and altered in isolation from other aspects of emergency health care. Therefore, the first two recommendations recognize the existence of an emergency health care system and the requirement to examine and upgrade as necessary all components of the system.

**B. Individual and Community Preparedness
for Health Emergencies**

As discussed in part I D, it is essential to recognize ambulance services as only one of the components of an emergency health care network. Improvements in ambulance services should not be made without giving consideration to other components of the network. Just as important are individual and family preparedness for health emergencies, and the broader concept of community capabilities for providing emergency health care (which includes ambulance services). Current knowledge regarding these components of the network is lacking. Therefore, the committee proposes the following recommendations:

RECOMMENDATION 1

THAT THE DEPARTMENT OF HEALTH AND HEALTH AND WELFARE CANADA EXAMINE THE EMERGENCY HEALTH CARE RESOURCES, INCLUDING INDIVIDUAL AND FAMILY PREPAREDNESS FOR HEALTH EMERGENCIES, CURRENTLY AVAILABLE IN N.W.T. COMMUNITIES, AND THAT A RISK RATING BE DEVELOPED FOR EACH COMMUNITY.

Certainly the two levels of government have a responsibility to ensure that emergency health care resources are adequate. However, individuals and families also bear an important responsibility, especially with respect to preventing health emergencies and coping with them when they occur. Consequently, there is an onus on individuals to become familiar with simple preventive measures and basic first aid.

RECOMMENDATION 2

THAT HEALTH CARE PLANNING BY THE FEDERAL AND TERRITORIAL GOVERNMENTS INCLUDE SPECIFIC ATTENTION TO UPGRADING EMERGENCY HEALTH CARE RESOURCES AS NECESSARY BASED ON THE RISK RATINGS REFERRED TO IN RECOMMENDATION 1.

C. Ambulance Legislation

Any major changes initiated by the Territorial Government with respect to ambulance services should be based in legislation clearly stating government policy concerning roles and responsibilities, standards, funding, planning and coordination of ambulance services. Accordingly, the committee makes the following recommendations:

RECOMMENDATION 3

THAT THE GOVERNMENT OF THE NORTHWEST TERRITORIES ENACT AMBULANCE LEGISLATION CONSISTING OF:

1. A new section to be added to the Public Health Act;
and
2. Ambulance Regulations;

RECOMMENDATION 4

THAT THE FOLLOWING PRINCIPLES BE INCORPORATED INTO NEW
AMBULANCE LEGISLATION:

1. powers, functions and duties of the Government of the Northwest Territories with respect to ambulance services;
2. a) a section enabling the Government of the N.W.T. to enter into agreements with municipalities or other agents regarding the provision of ground ambulance services, including services to the territorial highway system;
b) a section to the effect that anyone who can meet the standards can operate an ambulance service, including municipalities, volunteer organizations and private operators.
3. powers of the G.N.W.T. to make regulations pertaining to:
 - a) ground ambulance services standards;
 - b) air ambulance services standards;
 - c) methods for funding ground ambulance services;
 - d) measures to coordinate the provision of air and ground ambulance services;
 - e) licensure of ambulance operators;
 - f) licensure /certification of ambulance attendants with due regard to minimum age requirements, class of driver's license, physical abilities, and level of training;
 - g) mechanisms for licensure/certification of ambulance operators and attendants;

- h) information reporting requirements for air and ground ambulance operators;
- i) insurance requirements;
- j) a section enabling the G.N.W.T. to enter into agreements with air carriers for the provision of emergency air ambulance services;
- k) any other regulations that would contribute to the safe, effective and efficient operations of ambulance services in the N.W.T.

Subsequent sections of this report elaborate on most of these principles.

D. Ground Ambulance Services

The weaknesses in current services most severely affect ground ambulance services in the N.W.T. The following recommendations, if implemented, would significantly improve services to N.W.T. residents.

1. Three Levels of Standards

RECOMMENDATION 5

THAT THE DEPARTMENT OF HEALTH ESTABLISH THREE LEVELS OF STANDARDS FOR GROUND AMBULANCE SERVICES.

Because the population of the N.W.T. is small and is distributed among numerous small and widely dispersed communities, one high level of standards for all communities would be too costly. Therefore, different levels of standards are required. Three levels of

standards (Levels I, II and III with Level I being the highest standard) are applicable to the N.W.T. In this scheme there would be three levels for all categories of standards, including vehicles, equipment and staff.

The distribution of N.W.T. communities among the three levels is illustrated in Appendix 6. According to this scheme, there are eight (8) communities in Level I, twenty-two (22) in Level II and thirty-two (32) in Level III.

The criteria used for placing communities in the three levels are outlined below:

The criteria are flexible, especially with respect to the populations of communities. This flexibility permits placement of communities in the three levels based on a consideration of the potential need for ambulance services as well as the sizes of the communities and the availability of health care resources.

Level I Criteria

- a) The community has a population of approximately 1000 or more; and
- b) The community has a hospital for treating and stabilizing patients in emergencies. There are hospital personnel who could serve on an emergency response team.

Or:

- c) The community is in a strategic location on the highway system such that a Level I ambulance service could provide highway coverage. This criterion could qualify a community as being Level I even though it may not fully qualify under the other two criteria.

Level II Criteria:

- a) The community has a population of between 500 and 1500; and
- b) There is a nursing station or health centre/clinic in the community.

Level III Criteria:

- a) The community has a population of approximately 500 or under.
- b) Health services consist of a nursing station, health station, lay dispenser, or there are no formal services.

2. Staff Training Standards

In Recommendations 6, 7 and 8, the committee proposes minimum standards for ambulance attendant training for Level I, II and III ambulance services respectively. Such standards can only be effectively applied if a mechanism is established for the licensure/certification of ambulance attendants. Within this mechanism, due regard should be given not only to the training requirements outlined below, but also to approved equivalents of EMT-A training, and to other criteria (see Recommendation 4, part 3 f and g).

RECOMMENDATION 6

THAT AMBULANCE OPERATORS IN LEVEL I COMMUNITIES BE REQUIRED TO HAVE AT LEAST ONE EMT-A (EMERGENCY MEDICAL TECHNICIAN-AMBULANCE) OR APPROVED EQUIVALENT ON THE AMBULANCE STAFF. THAT OTHER STAFF AND VOLUNTEERS BE REQUIRED TO HAVE TRAINING TO THE LEVEL OF ADVANCED FIRST AID, CARDIOPULMONARY RESUSCITATION AND CASUALTY CARE CERTIFICATION.

This is intended as a minimum standard. Nevertheless, Level I ambulance operators should be encouraged, through the funding process for training and staffing, to achieve the level of one EMT-A or equivalent on each call.

EMT-A Training is available through the Southern Alberta Institute of Technology (See Recommendation 10).

RECOMMENDATION 7

THAT THERE BE ONE PERSON WITH TRAINING TO THE EMT-A (EMERGENCY MEDICAL TECHNICIAN-AMBULANCE) LEVEL OR EQUIVALENT IN EACH LEVEL II COMMUNITY TO COORDINATE AND PROVIDE ONGOING TRAINING FOR MAINTAINING VOLUNTEER PROFICIENCY LEVELS. THAT IN LEVEL II COMMUNITIES THERE BE AT LEAST ONE PERSON WITH ADVANCED FIRST AID AND CARDIOPULMONARY RESUSCITATION CERTIFICATION ON ALL CALLS. THAT ALL OTHER ATTENDANTS BE REQUIRED TO HAVE STANDARD FIRST AID AND CARDIOPULMONARY RESUSCITATION CERTIFICATION.

RECOMMENDATION 8

THAT IN LEVEL III COMMUNITIES ALL AMBULANCE ATTENDANTS BE REQUIRED TO HAVE A MINIMUM OF STANDARD FIRST AID AND CARDIOPULMONARY RESUSCITATION CERTIFICATION. THAT FOR THOSE COMMUNITIES WITHOUT THE FULL-TIME SERVICES OF A HEALTH PROFESSIONAL, THERE BE AT LEAST ONE PERSON WITH CERTIFICATION IN ADVANCED FIRST AID AND CARDIOPULMONARY RESUSCITATION.

Although the above standard is recommended as a minimum for Level III communities, it would be advantageous to have at least one person with certification in Advanced First Aid and C.P.R. in each community. This person could provide ongoing training to maintain volunteer proficiency levels, and act as a lead person for the volunteers.

RECOMMENDATION 9

THAT THE GOVERNMENT OF THE NORTHWEST TERRITORIES ACTIVELY ENCOURAGE AND PROMOTE VOLUNTEERISM IN THE PROVISION OF AMBULANCE SERVICES IN ALL COMMUNITIES IN THE N.W.T.

Throughout the Northwest Territories the provision of medical transportation is heavily dependant on the participation and goodwill of volunteers. Volunteerism must continue, and be further encouraged, in order to ensure the provision of services of acceptable quality in all communities, but especially in Level II and III communities.

In particular, participation by long-term residents of communities should be encouraged for two reasons. Because they are likely to continue residing in their communities, their participation will ensure continuity within corps of ambulance volunteers. Furthermore, long-term residents have the greatest knowledge of the geography of their areas and the best methods and routes of travel. Such knowledge is invaluable when health emergencies occur in wilderness areas.

3. Training Programs

RECOMMENDATION 10

THAT THE DEPARTMENTS OF HEALTH AND EDUCATION COOPERATE IN THE ESTABLISHMENT OF AN EMT-A TRAINING PROGRAM FOR LEVEL I AND LEVEL II COMMUNITIES.

The Emergency Medical Technician-Ambulance training program is available from the Southern Alberta Institute of Technology (SAIT) in Calgary. The curriculum is described in Appendix 7. It is a computer managed learning program which can be taught in other communities by means of terminals linked to the main computer at SAIT by phone. Recommendation 10 would require the Departments of Health and Education to make arrangements for the establishment of learning centres in the Northwest Territories. The cost of the training program should be absorbed by the Department of Education (Recommendation 23), which is currently examining alternatives for establishing learning centres.

Practical experience is an important factor in the training of ambulance attendants. Low call volumes in Level I communities may make it difficult for students to achieve the EMT-A requirements. Therefore, once a training program has been established, the possibility of exchanges with Alberta students should be explored such that N.W.T. students can have the opportunity to work in busy centres.

RECOMMENDATION 11

THAT THE DEPARTMENTS OF HEALTH AND EDUCATION MAKE ARRANGEMENTS FOR THE PROVISION OF TRAINING IN ADVANCED AND STANDARD FIRST AID, C.P.R. AND CASUALTY CARE BY THE ST. JOHN AMBULANCE FOR AMBULANCE ATTENDANTS IN ALL COMMUNITIES IN THE N.W.T.

Recommendation 11 would require the two government departments to make arrangements with the St. John Ambulance to provide ambulance attendant training in Standard and Advanced First Aid, C.P.R. and Casualty Care in all N.W.T. communities. Once again, the cost of these training programs should be paid by the Department of Education (Recommendation 23). These programs should be accessible to nurses employed in Medical Services Branch nursing stations and hospitals.

Both EMT-A and First Aid training should begin as soon as possible, and preferably by September, 1986.

4. Vehicle and Equipment Standards

A sub-committee was appointed to examine and make recommendations regarding ground ambulance vehicles and equipment. The standards developed by the Subcommittee for Levels I, II and III are set out in Appendix 8 (vehicles) and Appendix 9 (equipment). They were developed following an examination of standards in other jurisdictions in Canada. Furthermore, a number of the organizations who made submissions pertaining to the Advisory Committee's preliminary report provided helpful and constructive advice on ambulance vehicles and equipment.

Appendices 8 and 9 are recommended by the Committee as standards for the N.W.T.

It is recommended in Appendix 8 that dedicated ambulance vehicles should not be required in Level III communities. Formal arrangements should be made with organizations and individuals in these communities such that their vehicles can be used for patient transport when needed. Vehicles should be selected which provide adequate space (with stretcher capacity), and comfort for this purpose.

RECOMMENDATION 12

WITH RESPECT TO LEVEL III COMMUNITIES, THAT THE DEPARTMENT OF HEALTH ENCOURAGE THE VARIOUS FEDERAL AND TERRITORIAL GOVERNMENT DEPARTMENTS, MUNICIPAL COUNCILS AND THE R.C.M.P. TO PLACE VEHICLES IN THESE COMMUNITIES WHICH CAN SERVE AS AMBULANCE VEHICLES AS THE NEED ARISES.

The placement of such vehicles would take place according to the normal vehicle replacement schedules of these organizations. A second vehicle in each community should be designated as a backup for those occasions when the first vehicle is in use or out of order.

The recommended standards and guidelines for ambulance personnel, vehicles and equipment in Levels I, II and III are summarized in Table 2.

5. The Providers of Ambulance Services

RECOMMENDATION 13

THAT AMBULANCE OPERATORS WHO ARE ABLE TO MEET THE STANDARDS SPECIFIED BY THE GOVERNMENT OF THE NORTHWEST TERRITORIES BE PERMITTED TO PROVIDE GROUND AMBULANCE SERVICES.

As described in part II of this report, Ambulance services are currently provided in Level I communities by the municipalities, Health and Welfare Canada, Pine Point Mine (in Pine Point) and the St. John Ambulance (in Inuvik), as the case may be. It is preferable that this mix of privately and publicly owned ambulance services be encouraged to continue in Level I communities. The recommendation should also apply to services in Level II and III communities.

TABLE 2. RECOMMENDED MINIMUM STANDARDS FOR GROUND AMBULANCE SERVICES

| CATEGORY | LEVEL I | LEVEL II | LEVEL III |
|----------------|--|--|--|
| STAFF TRAINING | One Emergency Medical Technician-Ambulance on staff. Other staff and volunteers to have certification in Advanced First Aid CPR and Casualty Care. | One Emergency Medical Technician-Ambulance in the community to coordinate training of volunteers. One person with certification in Advanced First Aid and C.P.R. on all calls. Other attendants to have certification in Standard First Aid and C.P.R. | All ambulance attendants to have certification in Standard First Aid and C.P.R. One person with Advanced First Aid and C.P.R. certification in communities that do not have full-time services of a health professional. |
| VEHICLES | Dedicated vehicles to meet standards outlined in Appendix 8. | Dedicated vehicles to meet standards outlined in Appendix 8. | Dedicated vehicles not required. Availability of designated vehicles with stretcher capacity in Level III communities. |
| EQUIPMENT | Detailed equipment standards for all three Levels are outlined in Appendix 9. | | |

It is preferable that in all communities ambulance services be administered by or associated with health facilities, where such facilities exist. In communities with nursing stations, this would mean locating dedicated vehicles at the nursing stations (Level II communities), or keeping ambulance equipment and supplies at the nursing stations (Level III communities). However, the ambulance services would not actually be operated by the nursing stations.

RECOMMENDATION 14

THAT THE DEPARTMENTS OF HEALTH AND EDUCATION, IN COOPERATION WITH THE ST. JOHN AMBULANCE, PROMOTE THE DEVELOPMENT OF VOLUNTEER ORGANIZATIONS IN LEVEL II AND LEVEL III COMMUNITIES WHICH WOULD BE RESPONSIBLE FOR PROVIDING AMBULANCE SERVICES IN THESE COMMUNITIES.

Volunteerism should be an essential component of ambulance services in N.W.T. communities. The creation of volunteer organizations to provide ground ambulance services would promote continuity of service in the communities. This recommendation is not intended to eliminate the option of privately-owned ambulance services. Rather, it is intended to ensure that the service will be provided in all communities.

RECOMMENDATION 15

THAT THE DEPARTMENT OF HEALTH ENCOURAGE THE FORMATION OF EMERGENCY RESPONSE TEAMS IN LEVEL I COMMUNITIES.

Emergency Response teams would be composed of regular ambulance personnel augmented by physicians or by hospital nursing staff with special training in emergency care. The physician and nurse members of the teams would be able to perform certain functions that EMT-A ambulance attendants are not qualified to perform. These emergency response teams would respond to ambulance calls of a serious nature for which EMT-A attendants would not have the necessary expertise or authority to deal with alone. In addition, members of emergency response teams could serve as medical escorts on emergency medical evacuations by air, in cases where their particular expertise would be required.

6. Funding Ground Ambulance Services

As described in part II, no uniform funding arrangements exist for ground ambulance services in the Northwest Territories. The eight communities with ambulance services have had to fund their services by whatever means available. Consequently, the amounts and mechanisms for funding are widely variable and inequitable. If improved services based on uniform territory-wide standards for Levels I, II and II are to be achieved, rational funding mechanisms must be created which are uniform and equitable. Moreover, in keeping with the interpretation that ambulance services are a Territorial Government responsibility, municipalities should no longer have to bear the burden of the cost of ambulance services.

RECOMMENDATION 16

THAT THE GOVERNMENT OF THE NORTHWEST TERRITORIES ASSUME RESPONSIBILITY FOR FUNDING GROUND AMBULANCE SERVICES IN THE NORTHWEST TERRITORIES.

RECOMMENDATION 17

THAT FINANCIAL INPUT FROM FEDERAL, TERRITORIAL AND PRIVATE INSURANCE AGENCIES CONTINUE AS A SOURCE OF FUNDING FOR GROUND AMBULANCE SERVICES.

Many residents of the N.W.T. qualify for benefits under private health insurance plans through their place of employment. These plans often include reimbursement for ambulance fees. Similar benefits are available through the Workers' Compensation Boards. These sources of funds should continue.

Notwithstanding Recommendation 16, the committee recognizes that the Federal Government, by virtue of its Indian Health Policy, bears the responsibility for the health care costs of native people in the N.W.T. Therefore, while the responsibility for ground ambulance services rests with the Territorial Government, the Federal Government should share the cost of the services.

RECOMMENDATION 18

THAT THE GOVERNMENT PORTION OF COSTS OF GROUND AMBULANCE SERVICES BE SHARED BY THE TERRITORIAL AND FEDERAL GOVERNMENTS BASED ON THEIR RESPECTIVE RESPONSIBILITIES FOR THE HEALTH CARE OF N.W.T. RESIDENTS.

The costs of providing ambulance services include the following: (a) capital costs (vehicles, equipment, storage facilities, upgrading of facilities for the provision of emergency care, and any capital costs related to training); (b) operating costs; (c) training costs; and (d) central administrative costs (Territorial and Federal Governments).

The possible sources of funds include the Territorial and Federal Governments, user fees, and private and corporate donations. There are several methods for financing operating costs:

- (a) program financing based on operating budgets;
- (b) per capita grants to operators; and
- (c) per trip payments to operators.

With respect to the above costs, and the sources and methods of funding, the committee proposes the following recommendations:

RECOMMENDATION 19

THAT OPERATING COSTS FOR GROUND AMBULANCE SERVICES BE FINANCED BY MEANS OF PROGRAM FUNDING BASED ON ANNUAL BUDGET SUBMISSIONS TO THE DEPARTMENT OF HEALTH.

It is the view of the committee that program funding represents the most equitable and efficient means of financing the operating costs for ground ambulance services.

RECOMMENDATION 20

THAT THE INTRODUCTION OF USER FEES AS A PART OF THE FUNDING SCHEME BE HELD IN ABEYANCE PENDING FURTHER EXAMINATION BY THE DEPARTMENT OF HEALTH OF USER FEE POLICIES IN OTHER JURISDICTIONS.

There are persuasive arguments both for and against the importance of user fees as part of the funding mechanism for ground ambulance services. Further examination of the effects of user fees as a deterrent to the abuse of ambulance services, and as a source of revenue is required.

RECOMMENDATION 21

THAT THE CAPITAL COSTS OF GROUND AMBULANCE SERVICES BE FINANCED BY THE DEPARTMENT OF HEALTH, SUBJECT TO RECOMMENDATION 18.

Various methods of financing capital costs should be investigated. One option would be the provision of start-up capital funding followed by funding in subsequent years based on depreciation. Alternatively, the Government of the Northwest Territories could purchase all vehicles and equipment and lease them to the ambulance operators.

RECOMMENDATION 22

THAT ALL CAPITAL AND OPERATING COSTS RELATED TO THE TRAINING OF AMBULANCE ATTENDANTS, INCLUDING PAID STAFF AND VOLUNTEERS, BE THE RESPONSIBILITY OF THE DEPARTMENT OF EDUCATION, SUBJECT TO RECOMMENDATION 18.

RECOMMENDATION 23

THAT A COMMON ACCOUNTING AND REPORTING SYSTEM BE ESTABLISHED FOR AMBULANCE OPERATORS, WITH FINANCIAL AND STATISTICAL DATA BEING REPORTED REGULARLY TO THE DEPARTMENT OF HEALTH.

The committee is of the view that if the above recommendations pertaining to the funding of ambulance services are implemented significant progress can be made in achieving improved ground ambulance services in the N.W.T.

E. Highway Ambulance Services

The Northwest Territories has long isolated stretches of highway for which no formal policies or procedures have ever been developed regarding ambulance coverage, either by road or by air. The committee considers this a major weakness in current ambulance services.

RECOMMENDATION 24

THAT THE DEPARTMENT OF HEALTH ESTABLISH POLICIES AND PROCEDURES FOR AMBULANCE SERVICE COVERAGE OF THE ENTIRE N.W.T. HIGHWAY SYSTEM, INCLUDING WINTER ROADS.

The implementation of Recommendation 24 would require the development of zones of coverage by ground and air ambulance services. To define zones of ground ambulance coverage, specific criteria would have to be established, such as turn-around time (summer and winter), general road conditions, the level of ambulance service available (I or II), the condition of the patient, and so on.

Air ambulance coverage would be necessary in areas outside ground ambulance zones, and inside ground ambulance zones when circumstances warrant (e.g. critically injured patients).

Ideally, ground ambulance services would be provided on the highway system by ambulance operators from communities located on the highways. However, as described in Part II B3, some of the municipalities that would be affected by such policies and procedures have legitimate concerns which would make them reluctant to provide highway coverage. The Department of Health will have to acknowledge these concerns when establishing highway coverage.

RECOMMENDATION 25

THAT THE DEPARTMENT OF HEALTH NEGOTIATE WITH MUNICIPALITIES AND AMBULANCE OPERATORS REGARDING THE PROVISION OF GROUND AMBULANCE SERVICES ON THE N.W.T. HIGHWAY SYSTEM.

F. Air Ambulance Services

1. Provision of Air Ambulance Services

Currently, air ambulance services are provided almost entirely by private air carriers, as described in Part II B4. This practice should continue.

RECOMMENDATION 26

THAT AIR AMBULANCE SERVICES IN THE N.W.T. CONTINUE TO BE PROVIDED PRIMARILY BY PRIVATE AIR CARRIERS AS IS CURRENTLY THE CASE.

2. Air Ambulance Standards

The committee is of the view that uniform standards are necessary for air ambulance services. To this end, the sub-committee described on page 30 has developed the air ambulance standards and guidelines outlined here.

(a) Characteristics of Aircraft

Aircraft with the following characteristics and amenities should preferentially be used for transporting patients requiring medical attention. Carriers wishing to transport patients should quickly and progressively acquire aircraft meeting these specifications, either through the purchase of new or the modification of existing aircraft.

The choice of aircraft is frequently limited by availability or by the circumstances of intended take-off and landing sites. In general, however, multiple-engine aircraft should be used except where stretcher use is elective, where in-flight care is expected to be minimal, and where the anticipated one-way flying time is 90 minutes or less. When the known or anticipated medical condition of the patient suggests the possibility of hypoxia, a pressurized aircraft should be selected.

(i) Safety

The exercise of discretion in the choice of air carrier applies especially to safety. In particular, evidence of consistent compliance with the Air Navigation Orders of Transport Canada (Series II, No. 8 and Series V, No. 12) should be available and

used as criteria for selecting carriers (Appendix 10). In relation to specific flights, the judgement of the pilot regarding the safety of an intended flight should normally be respected. Pilots should not be pressed to fly in doubtful conditions. Conversely, attendants should feel free not to proceed on any flight where they have misgivings regarding weather, aircraft or pilot.

(ii) Radio Communications Equipment

Aircraft used for medical evacuations should have radio equipment permitting direct communication with health care personnel on the ground enabling them to direct the care of patients in transit. The radio capabilities should also permit direct communication with ambulance personnel on the ground who are responsible for transferring patients from the aircraft to the treatment facility. These communication capabilities are envisaged as a component of the common emergency health services communication system recommended by the Air and Ground Ambulance Policy Advisory Committee (Recommendation 30, p. 49), and should not be required except as a component of the whole communication system.

(iii) Space

There should be adequate space and configuration such that medical attendants will have unimpeded access to every stretcher patient carried on the flight. There should be adequate space for at least one medical attendant per patient. Aircraft with such configurations are frequently not available in the N.W.T.

(iv) Aircraft Doors

Aircraft doors should be large enough to permit loading and unloading of stretchers without significant rotation, which may not be tolerated by some patients and which is uncomfortable and inconvenient for all patients.

(v) Cabin Pressure

It is essential in certain medivac situations and preferable in many others that pressurized aircraft be used for patient transport.

(vi) Temperature

There should be heating capacity, a temperature regulation and distribution system and insulation such that temperatures at stretcher level can be maintained above 10 degrees Celsius in flight, without increasing upper cabin temperatures excessively (25°). Cabins should be sufficiently insulated to prevent the freezing of intravenous infusion lines which may be in contact with internal sheathing. The distribution of heat in charter aircraft is often very poor, with hot air gathering in the top of the cabin while temperatures at floor level are at or below freezing. IV lines and drainage lines have been known to freeze.

(vii) Ventilation

Cabins should be equipped with fresh air vents which are so situated or flexible that they may be directed at seated or recumbent passengers. Forced ventilation for ground use during warm weather is a desirable amenity.

(viii) Electrical Installations

Cabins should have fixed lighting which illuminates areas used for the carriage of stretchers or incubators, for the storage of oxygen and the seating of attendants such that the patient may be observed and attended, that fluid levels and drip rates of intravenous infusions may easily be ascertained, that gauges may be monitored and that fine print may be read.

Cabins should be provided with 24 volt electrical outlets installed in proximity to the usual placement of incubators or suction apparatus.

(ix) Security Arrangements for Stretchers and Equipment

Aircraft should provide secure arrangements for the in-flight immobilization of stretchers, incubators, oxygen bottles and other equipment regularly carried on medical evacuations and for the suspension of infusion fluids. There is often no means of securing stretchers and equipment on aircraft, creating a safety hazard for patients, medical evacuation staff, and aircraft crew in the event of serious turbulence or forced landings.

(x) Sanitary Facilities

Aircraft should be equipped with a toilet or provide some reasonably decorous means for in-flight relief. Many aircraft have no such conveniences, causing much discomfort for medical attendants on lengthy flights.

b) Implementation of Standards and Guidelines for Carriers

The committee is of the view that to implement air ambulance standards by means of compulsory measures would be inappropriate at this time. The success of the voluntary compliance referred to in Recommendation 27 should be evaluated after three years. If the voluntary approach is found to be inadequate, then standards should be established in the ambulance legislation.

RECOMMENDATION 27

THAT ANY AIR AMBULANCE STANDARDS WHICH WOULD DIRECTLY AFFECT THE AIR CARRIERS BE IMPLEMENTED BY MEANS OF VOLUNTARY COMPLIANCE ON THE PART OF THE AIR CARRIERS.

c) Standards for Portable Equipment and Supplies

All nursing stations and hospitals in the Northwest Territories should stock the equipment and supplies listed in Appendix 11 for use on medical evacuations. This equipment should be accessible to Emergency Response Teams.

In addition, all hospitals should have cardiac monitors and defibrillators available for exclusive use by Emergency Response Teams and medivac personnel.

It is strongly recommended that equipment and supplies be organized into standardized kits, as indicated in Appendix 11, in all locations. The

equipment, supplies and standard kits should be organized into large medivac bags of a standard type and number to be determined later.

The list in Appendix 11 should serve as a minimum standard for the N.W.T. A formal review of the list annually or semi-annually by those who serve on medivacs should be encouraged.

d) Special Training

There is concern regarding the amount of training provided to medivac personnel in survival skills and acute care skills such as intravenous therapy and cardiac monitoring.

Two categories of medical evacuation personnel can be identified:

(i) Personnel Regularly Involved in Medical Evacuations

Such persons (including both physicians and nurses, but primarily nurses) could be the core staff of the Emergency Response Teams described in Recommendation 15. Currently, the people who most frequently serve on medical evacuations are Medical Services staff from the various Zone offices and hospital nursing staff.

RECOMMENDATION 28

THAT HEALTH CARE PERSONNEL REQUIRED TO SERVE AS MEDICAL ESCORTS ON AIR MEDICAL EVACUATIONS BE GIVEN ADEQUATE TRAINING IN SURVIVAL SKILLS AND IN THE ACUTE CARE SKILLS NEEDED FOR MEDICAL EVACUATIONS.

These personnel should have the following skills and knowledge:

- General patient assessment (neurological, cardiopulmonary, obstetrical, neonatal, pediatric, trauma)
- First Aid techniques
- Preparation of patients for air evacuation
- Resuscitation techniques, including C.P.R.
- Administration of oxygen
- Suction techniques
- Management of shock
- Intravenous therapy
- Administration of drugs
- Medical implications of high altitude patient transport
- Effects of flying conditions on medical equipment
- Cardiac monitoring and defibrillation
- Survival techniques

Ideally the skills and knowledge listed above should be obtained through a combination of training and experience. However, extensive field experience may also serve to provide the required skills and knowledge. In any case, medivac personnel should receive periodic instruction, preferably annually or semi-annually, to maintain and augment their skills.

(ii) Occasional Medical Escorts

This category consists primarily of nurses in the Medical Services nursing stations who from time to time are required to serve as medical escorts on medical evacuations. Occasional medical escorts should have the following skills and knowledge:

- General patient assessment
- First aid
- Preparation of patients for air evacuation
- Resuscitation techniques
- Administration of oxygen and drugs
- Management of shock
- Intravenous therapy
- Medical implications of high altitude patient transport
- Survival techniques

While these skills are similar to those listed for the first category of medical escorts, training and experience prerequisites need not be as rigorous for this second category. Nevertheless, a regular continuing education program should be required for these staff, with a strong emphasis on audiovisual instruction methods that can be applied in the nursing stations.

(e) Conferences

Conferences should be conducted at least annually, and preferably semi-annually, to be attended by personnel who regularly serve on medical evacuations. These conferences would facilitate discussion of common problems and issues, and the sharing of ideas and methods of dealing with these problems. For example, standardization of equipment and supplies could be discussed.

The output from these conferences could serve as valuable input to meetings of the Advisory Body referred to on page 49 of the Committee's report.

Conference attendance would be limited to one or two representatives from each hospital and Medical Services Zone Office. Most of those attending would be nurses, although physicians and pharmacists should also be invited to attend.

Conference costs should be shared by Health and Welfare Canada and the Department of Health.

G. Coordination of Emergency Health Services

To an extent, the preceding recommendations contain an element of coordination, either implicitly or explicitly. This is so because part of the general intent of all the recommendations is to achieve harmonious and integrated functioning of all components of the emergency health services network. Nevertheless, the committee has identified some specific aspects of coordination. The recommendations in this section propose that the responsibility for certain coordination functions be assumed by the Government of the Northwest Territories.

1. Planning

RECOMMENDATION 29

THAT THE DEPARTMENT OF HEALTH BE RESPONSIBLE FOR SYSTEM-WIDE PLANNING OF EMERGENCY HEALTH SERVICES, WITH INPUT FROM AMBULANCE OPERATORS, HOSPITALS, PRIVATE AIR CARRIERS, HEALTH CARE PROFESSIONALS, HEALTH AND WELFARE CANADA AND OTHER ORGANIZATIONS AND INDIVIDUALS AS NECESSARY.

As part of this planning process, the Department of Health could conduct periodic reviews of emergency health services in the N.W.T. in order to identify and solve significant deficiencies in the system.

In addition, an advisory body should be established with representation from the groups listed above. The method of appointment of this body, and its terms of reference could be prescribed in ambulance legislation.

2. Communications

The facility for rapid and direct communication between the various components of the emergency health care system can greatly enhance system performance. Consolidated information is lacking with respect to communications capabilities as they affect emergency health services in the N.W.T. Therefore the committee makes the following recommendation:

RECOMMENDATION 30

THAT THE GOVERNMENT OF THE NORTHWEST TERRITORIES PREPARE A COMPREHENSIVE INVENTORY OF COMMUNICATIONS CAPABILITIES IN THE N.W.T. AS THEY RELATE TO EMERGENCY HEALTH CARE, SUCH INFORMATION TO BE SHARED WITH INTERESTED ORGANIZATIONS WHERE APPROPRIATE.

In keeping with the desirability of rapid and direct communication between the various components of the emergency health care network, the committee makes the following recommendation:

RECOMMENDATION 31

THAT ONE COMMON COMMUNICATION SYSTEM BE SET IN PLACE MAKING POSSIBLE DIRECT COMMUNICATION BETWEEN ALL COMPONENTS OF THE EMERGENCY HEALTH SERVICES NETWORK.

The Standing Group on Communications has made recommendations with respect to the communications needs of the federal and territorial governments.⁴ The implementation of their recommendations could have an impact on emergency health services communications. If a common communication system for emergency health services is to be established (Recommendation 33), this should be done in consultation with the Standing Group on Communications.

3. Dispatching

In the committee's view there is no need to change substantially the current arrangements for dispatching ambulances in Level I communities. With respect to ground ambulance services, regionalized dispatching should not be necessary. Dispatching should continue to be centred in each community where there is an ambulance service.

Air ambulance services should continue to be dispatched by Health and Welfare field personnel and by hospitals as necessary.

⁴ Task Force (Standing Group on Communications). Needs Analysis: Federal Government and G.N.W.T. Radio Communications. Submitted to the Advisory Committee on Northern Development (N.W.T.), May, 1983.

On the highway system where it may sometimes be difficult for dispatchers to determine which ambulance service should respond, the responsibility for the dispatching decision should rest with a third party. Accordingly, the committee makes the following recommendation:

RECOMMENDATION 32

THAT THE DEPARTMENT OF HEALTH OPEN DISCUSSIONS WITH THE R.C.M.P. REGARDING THE POSSIBLE ASSIGNMENT OF AMBULANCE DISPATCHING DECISIONS TO THE R.C.M.P. WITH RESPECT TO HIGHWAY AMBULANCE COVERAGE.

The R.C.M.P. are usually the first to arrive at the scene of an accident, aside from passing motorists. They can determine the location of the accident and call the nearest ambulance service if necessary.

4. Public Information

An important aspect of the coordination function is to ensure that members of the public be informed regarding the availability of emergency health services and the means for gaining access to these services. A related issue is the matter of public education in emergency health care, an important component of which should be prevention of health emergencies. The committee offers the following recommendation:

RECOMMENDATION 33

THAT THE DEPARTMENT OF HEALTH COORDINATE THE PREPARATION AND DISSEMINATION OF INFORMATION AND PUBLIC EDUCATION PROGRAMS REGARDING EMERGENCY HEALTH SERVICES IN THE N.W.T. THE PUBLIC EDUCATION COMPONENT SHOULD PLACE A STRONG EMPHASIS ON THE PREVENTION OF HEALTH EMERGENCIES.

IV. IMPLEMENTATION OF RECOMMENDATIONS

A. Phasing of Recommendations

A proposed schedule for implementing the recommendations in this report is presented in Table 3 (Phasing of Recommendations) and in Chart A. The schedule outlines a five-year phase-in period, with new standards and funding arrangements beginning to come into effect on April 1, 1987. Level I standards would be phased in over three years, while standards and services for Level II and III communities would be phased in over five years for ground ambulance services.

According to the proposed schedule, air ambulance standards would be phased in over a three-year period by means of voluntary compliance.

B. Potential Cost of Implementing Recommendations

The potential costs of implementing all the committee's recommendations over a five-year period beginning in 1987/88 are summarized in Table 4. The figures are in constant 1985 dollars and represent the gross costs of operating ground ambulance services based on the recommendations in this report. A detailed breakdown of these costs is contained in Appendix 12.

Table 4 has two parts designated as Scheme 1 and Scheme 2. The two schemes differ with respect to the operating costs for Level I ambulance services, with the costs

TABLE 3. PHASING OF RECOMMENDATIONS

| RECOMMENDATION | IMPLEMENTATION TIME FRAME |
|--|--|
| A. <u>INDIVIDUAL AND COMMUNITY PREPAREDNESS FOR HEALTH EMERGENCIES.</u> | |
| 1. Assessment of emergency health care resources. | By June 1, 1987. |
| 2. Development plan for upgrading. | Develop plan by September 1, 1987. Five to ten year implementation depending on costs. |
| B. <u>AMBULANCE LEGISLATION</u> | |
| 3. Enactment of legislation. | By spring, 1987 for ordinance. Enactment of regulations depending on phasing of other recommendations (eg. standards, funding). |
| 4. Content of legislation. | See above. |
| C. <u>GROUND AMBULANCE SERVICES STANDARDS.</u> | |
| 5. Establish three levels of standards. | By spring, 1987. Incorporate into regulations for ambulance services. |
| 6. Level I staffing standards. | Establish standard by spring, 1987. (in legislation). Phase in over three years. |
| 7. Level II staffing standards. | Establish standard by spring, 1987. (in legislation). Phase in over five years. |
| 8. Level III staffing standards. | Establish standard by spring, 1987. (in legislation). Phase in over five years. |
| 9. Encouragement of volunteerism. | No specific timeframe. Indefinite. |

TABLE 3. CONTINUED

| RECOMMENDATION | IMPLEMENTATION TIME FRAME |
|---|---|
| <u>D. TRAINING PROGRAMS</u> | |
| 10. Establishment of EMT-A training programs for Level I communities. | Programs in place by June 1986. Begin training by September, 1986. |
| 11. Provision of First Aid training in Level II and III communities. | Infrastructure in place by June 1986. Begin training September, 1986. |
| <u>E. VEHICLE AND EQUIPMENT STANDARDS</u> | |
| Vehicles and Equipment. | Level I - phase in over three years. |
| Equipment for Level III communities. | Level II - phase in over five years. |
| | Level III - phase in over five years. |
| 12. Vehicles for Level III communities. | Indefinite time frame. |
| <u>F. PROVISION OF GROUND AMBULANCE SERVICES</u> | |
| 13. Operators able to meet standards. | Operators to meet standards within phase-in periods indicated above. |
| 14. Promotion of volunteer organizations in Level II and III communities. | Organizations in place as necessary over a five year period. |
| 15. Emergency Response Teams in Level I communities. | Phase in over three years. |
| <u>G. FUNDING GROUND AMBULANCE SERVICES</u> | |
| 16. G.N.W.T. assume funding responsibility. | Target date for beginning funding - April 1, 1987. |

TABLE 3. CONTINUED

| RECOMMENDATION | IMPLEMENTATION TIME FRAME |
|---|---|
| 17. Other sources of third party payments. | Time frame not applicable. |
| 18. Cost-sharing by federal and territorial governments. | Develop cost-sharing formula by April 1, 1987. |
| 19. Program funding for operating costs. | Design funding methods by June 1, 1986. Negotiate budgets with operators by December 1, 1986. |
| 20. Examination of user fees. | Complete by April, 1987. |
| 21. Financing of capital. | <u>Initial Capital Funding</u> Level I - phase in over three years. Level II - phase in over five years. Level III - phase in over five years. <u>Subsequent Capital Funding</u> Develop funding mechanism by April 1, 1987. |
| 22. Capital and operating costs for training programs. (Department of Education). | Funding available in 1986/87 fiscal year for establishment and operation of programs. |
| 23. Accounting and information system for ground ambulance operators. | System to be developed to coincide with beginning of funding (April 1, 1987). |
| <u>H. HIGHWAY AMBULANCE SERVICES</u> | |
| 24. Development of policies and procedures for highway ambulance coverage. | By September, 1986. |
| 25. Negotiate with ambulance operators for highway coverage. | By September, 1986. |

TABLE 3. CONTINUED

| RECOMMENDATION | IMPLEMENTATION TIME FRAME |
|--|---|
| I. <u>AIR AMBULANCE SERVICES AND STANDARDS.</u> | |
| 26. Provision by private air carriers. | Time frame not applicable. |
| 27. Voluntary implementation of standards for carriers. | Three year period for implementation. |
| 28. Acute care and survival training for health care personnel. | Phase in over three years. Training programs to begin by April 1, 1987. |
| J. <u>PLANNING</u> | |
| 29. Department of Health responsible for emergency health services planning. | Indefinite. |
| K. <u>COMMUNICATIONS</u> | |
| 30. Inventory of communications capabilities. | Complete by March 31, 1988. |
| 31. One common communications system for emergency health services. | By March 31, 1991. |
| L. <u>DISPATCHING</u> | |
| 32. Dispatching by R.C.M.P. for highway ambulance services. | Formal arrangements in place by April 1, 1987. |
| M. <u>PUBLIC INFORMATION</u> | |
| 33. Department of Health to coordinate public education and information programs on emergency health issues. | Indefinite. |

CHART A. PHASING OF RECOMMENDATIONS

| RECOMMENDATION | SCHEDULE FOR PHASING RECOMMENDATIONS | | | | | | | | | | | | | |
|---|--------------------------------------|----------|-----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------------|
| | Feb 1 86 | Apr 1 86 | June 1 86 | Sept 1 86 | Dec 31 86 | Apr 1 87 | June 1 87 | Sept 1 87 | Mar 31 88 | Mar 31 89 | Mar 31 90 | Mar 31 91 | Mar 31 92 | Subsequent Years |
| A. INDIVIDUAL AND COMMUNITY PREPAREDNESS FOR HEALTH EMERGENCIES 1. Assessment of resources 2. Planning and upgrading | | | | | | | | | | | | | | |
| B. AMBULANCE LEGISLATION Recommendations 3-8 9. Encouragement of volunteerism | | | | | | | | | | | | | | |
| C. TRAINING PROGRAMS Recommendations 10 and 11 | | | | | | | | | | | | | | |
| D. VEHICLE AND EQUIPMENT STANDARDS 12. Level III vehicles | | | | | | | | | | | | | | |
| E. PROVISION OF GROUND AMBULANCE SERVICES 13. By operators able to meet standards 14. Volunteer organizations, Levels II and III 15. Level I Emergency Response Teams | | | | | | | | | | | | | | |
| F. FUNDING GROUND AMBULANCE SERVICES Recommendations 16 to 23 | | | | | | | | | | | | | | |
| G. HIGHWAY AMBULANCE SERVICES Recommendations 24 and 25 | | | | | | | | | | | | | | |
| H. AIR AMBULANCE SERVICES AND STANDARDS 26. Provision by private carrier 27. Voluntary compliance 28. Medical and Survival training for health care personnel | | | | | | | | | | | | | | |
| I. COORDINATION 29. Dept. of Health - planning 30. Communications inventory 31. One common communications system for emergency health services 32. R.C.M.P. dispatching for highway ambulance services 33. Dept. of Health - public education and information | | | | | | | | | | | | | | |

Dotted lines indicate periods of planning, development.
Solid lines indicate periods of implementation.

TABLE 4. COST OF RECOMMENDATIONS

1. Scheme 1

Under Scheme 1, the staffing of the ambulance service in Yellowknife would include six full-time attendants. In each of the other seven Level I communities, the staffing would include one full-time attendant and a corps of volunteers.

| COST ITEMS | FISCAL YEAR | | | | |
|--|------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| CAPITAL | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| OPERATING COSTS | | | | | |
| Level I | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 1,323,800 | 1,554,200 | 1,784,600 | 2,068,600 | 2,352,600 |
| TRAINING COSTS | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| EMERGENCY RESPONSE TEAMS | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| CENTRAL ADMINISTRATION (G.N.W.T.) | | | | | |
| TOTAL | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 2,193,300 | 2,383,370 | 2,618,750 | 2,838,380 | 3,083,000 |

TABLE 4. Continued.

11. Scheme 2

Under Scheme 2, the staffing of ambulance services in all eight Level I communities would include six full-time attendants.

| COST ITEMS | FISCAL YEAR | | | | |
|---------------------------------|------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| CAPITAL | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| OPERATING COSTS | | | | | |
| Level I | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 2,576,000 | 2,806,400 | 3,036,800 | 3,320,800 | 3,604,800 |
| TRAINING COSTS | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and | | | | | |
| Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| EMERGENCY RESPONSE TEAMS | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| CENTRAL ADMINISTRATION | | | | | |
| (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 3,445,500 | 3,635,570 | 3,870,950 | 4,090,580 | 4,335,200 |

under Scheme 1 being lower by \$1,252,200 per year. Under Scheme 1 the staffing of the ambulance service in Yellowknife would be comprised of six full-time attendants and a staff of volunteers. In each of the other seven Level I communities, the staffing would include one full-time attendant and a corps of volunteers.

Under Scheme 2, the staffing of the ambulance services in all eight Level I communities would include six full-time attendants.

In effect the two schemes describe a range of possible staffing profiles and costs. The committee considered such a range necessary so that the characteristics and circumstances unique to each Level I community can be taken into account in the planning of ambulance services.

For example, in the smaller Level I communities, a staff complement of six full-time attendants (Scheme 2) would be difficult to justify due to the probability of relatively few calls per year. On the other hand, in the intermediate size Level I communities, a staff complement of only one full-time attendant (Scheme 1) may not be adequate.

It is highly likely that the ideal situation may lie somewhere between Schemes 1 and 2, once the unique circumstances of each community have been considered.

The figures in Table 4 do not reflect the net increase in the annual costs of services which would result if the recommendations were to be implemented. The net increase would actually be less than the amounts shown in Table 4 because of the costs currently being incurred by ambulance operators.

Accurate cost figures for all current ambulance services in the N.W.T. are not available due to the absence of uniform information reporting procedures. However, amounts are available for the City of Yellowknife ambulance service. The budgeted operating cost for the ambulance service in 1984 was approximately \$225,000.

The figures also do not take into account other possible sources of revenue such as private insurance plans (Recommendation 17). It was not possible to make projections of potential revenues due to insufficient data.

Finally, if Recommendation 18 is implemented as part of the funding scheme, a substantial portion of all the costs summarized in Table 4 will be borne by Health and Welfare Canada.

C. Priority Recommendations

It is somewhat difficult to establish clear priorities among the thirty-three recommendations, each of which is an essential building block in the establishment of an ambulance services policy and program for the N.W.T.

Nevertheless, it is clear that in order of events, the enactment of ambulance legislation (ordinance and regulations) must occur first (Recommendations 3 and 4). New legislation would signify the acceptance by the Territorial Government of the responsibility for ambulance services, and would set the stage for all subsequent program innovations.

Second priority must be given to the establishment of rational funding mechanisms based on Recommendations 16 to 23 in order that the standards set in legislation can be achieved.

D. Conclusion

Clearly much careful thought and planning will be necessary before major progressive changes can be made affecting emergency health services. The members of the committee consider the principles and recommendations in this report as representing the first major step in realizing such progress. The report offers practical solutions to outstanding issues, while setting the stage for the continuing development of emergency health services in the N.W.T.

APPENDIX 1

TERMS OF REFERENCE

TERMS OF REFERENCE
AIR AND GROUND AMBULANCE POLICY
ADVISORY COMMITTEE

Authority:

This committee is established by the Minister of Health.

Purpose:

The purpose of this committee is to advise the Department of Health on the development of Legislation, Regulations and Policy with respect to Air and General Transportation of Medical Patients to and from the place of treatment.

Duties:

- To compile and document the existing systems, including equipment, staff and payment authorities.
- To review existing GNWT and provincial legislation.
- To review existing provincial programs.
- To recommend principles to be drafted into legislation in the N.W.T. with respect to Patient Transportation.
- To recommend methods of coordinating and streamlining existing services.
- To recommend methods of rationalizing payment systems.
- To put forward a scheme of implementation for any recommendations advanced.
- To present a preliminary report to the Minister and a final written report.

Timeframe:

- To report to the Minister of Health through the Department as soon as the committee feels that it has completed its task or within six months from the date appointed unless extensions are finally given.

Funding:

- No funding is currently available to the committee though, should the Minister be able to identify funds for a consultant, they will be provided by the Department of Health.
- Secretarial services will be provided by the Department of Health.

Membership:

- The following organizations and departments will be invited to have a representative:

N.W.T. Association of Municipalities
St. John Ambulance
Health and Welfare Canada
Department of Local Government
Department of Health - GNWT (Chairperson)

Approved
Minister of Health

AMBULANCE SERVICES
N.W.T.
POLICY DEVELOPMENT

PHASE 1

- Present services and their deficiencies, if any.
- Vehicles and equipment.
 - Staff and education.
 - Availability of service.
 - Legislation/Authority/Standards/Licensing.
 - Provision of or payment of services.
 - Various systems (air and ground) and their interface.
- Review of other jurisdictions.

PHASE II

Recommendations:

1. Legislation.
2. Standards (Personnel, Equipment).
3. Provision of services and coordination.
4. Payment Responsibility.
5. Phasing of recommendation and identification of costs.

PHASE III

Executive Council Submission.

PHASE IV

Implementation of Executive Council Decision.

PHASE V

Monitoring and Evaluation.

APPENDIX 2

COMMUNITIES WITH AMBULANCE SERVICES

APPENDIX 2
COMMUNITIES WITH AMBULANCES

| <u>COMMUNITY</u> | <u>VEHICLES AND STANDARDS</u> | <u>OPERATOR-LOCATION-DISPATCH</u> | <u>STAFF AND TRAINING</u> | <u>FUNDING SOURCES</u> |
|--------------------------|--|--|---|---|
| <u>Baffin Region</u> | | | | |
| Frobisher Bay | 1979 ambulance vehicle Ontario standards | Operated by municipality out of firehall; dispatched by G.M.W.T. (contract) dispatcher through municipally-owned pagers. | 14 part-timers with First Aid and C.P.R. training. Currently upgrading to level of B.C. EMA-I. Training time is 24 hr. per month. Director of Protective Services is EMA-I Instructor | Government (for native patients). User (non-native patients. Charge per trip: \$100. in community, \$150. to airport. |
| <u>Fort Smith Region</u> | | | | |
| Fort Smith | One ambulance, basic standards | Operated by municipality; based in hospital; dispatched by hospital staff. | One paid staff (Fire Chief), 10 volunteers, all with Standard First Aid and C.P.R. | Municipality - 5% Government - 55% Users - 40% |
| Hay River | Two ambulances, basic standards | Operated by municipality out of firehall; dispatched by hospital | 17 volunteers with First Aid and C.P.R. and some hospital instruction | Annual cost estimated at \$12,400. Federal and Territorial Governments only sources of funds - per trip payments |
| Pine Point | One Ford Econoline ambulance, basic standards | Operated by Pine Point Mines (Cominco) from the mine. Dispatched by nurse at health centre | Mine staff. Information on training not available | Service is provided by the mine free of charge |
| Fort Simpson | One ambulance vehicle; no information available on standards | Operated by municipality out of hospital | Volunteers, hospital employees. Standard First Aid training. | Information not available |

APPENDIX 2 (Continued)

| <u>COMMUNITY</u> | <u>VEHICLES AND STANDARDS</u> | <u>OPERATOR-LOCATION-DISPATCH</u> | <u>STAFF AND TRAINING</u> | <u>FUNDING SOURCES</u> |
|----------------------|---|---|--|--|
| Rae Edzo | One ambulance vehicle; no information available on standards | Health and Welfare Canada operates vehicle from Edzo Cottage Hospital; dispatched by Nurse-in-Charge | Information not available on staffing. Training level - St. John Ambulance First Aid | Funded by Health and Welfare Canada (100%) |
| Yellowknife | 1973 and 1984 GMC vans. Standards-emergency response units in provinces | Operated by municipality out of firehall, dispatched by senior officer on duty | 10 full-time paid staff with advanced First Aid and C.P.R. 10 volunteers with Standard First Aid and C.P.R. | Municipality - 72% Users - 28% (includes governments) |
| <u>Inuvik Region</u> | | | | |
| Inuvik | Two ambulances, Ontario standards | Operated by St. John Ambulance from home of the EMT staff member. Dispatched by hospital via paging system. | Four to five volunteers with basic First Aid and C.P.R. One Emergency Medical Technician on staff (trained to B.C. EMA-I level). | St. John Ambulance Supplementary funding from user fees. |

APPENDIX 3

COMMUNITIES WITHOUT AMBULANCE SERVICES

APPENDIX 3

COMMUNITIES WITHOUT AMBULANCE SERVICES

| COMMUNITY | PROVIDERS OF MEDICAL TRANSPORTATION SERVICES |
|--------------------------|---|
| <u>Baffin Region</u> | |
| Arctic Bay | Local taxis |
| Broughton Island | Hamlet vehicles and staff |
| Cape Dorset | 24 hour service provided by Alain Carrier under contract with Hamlet |
| Clyde River | Anyone with a vehicle available, and R.C.M.P. |
| Hall Beach | Hamlet vehicle (24 hours) |
| Igloolik | Hamlet vehicle; others on voluntary basis |
| Lake Harbour | Hamlet vehicle; others on voluntary basis |
| Pangnirtung | Peyton Enterprises under contract with Hamlet |
| Pond Inlet | Taxi service |
| Sanikiluaq | Hamlet; others on voluntary basis |
| Grise Fiord | DPW truck or fire truck |
| Resolute Bay | Nursing station (truck) new taxi service |
| <u>Fort Smith Region</u> | |
| Fort Liard | Hamlets, nursing stations, GNWT, taxis, volunteers, relatives of patients, whoever is available |
| Fort Providence | |
| Fort Resolution | |
| Fort Wrigley | |
| Snowdrift | |
| Tungsten | |
| Lac La Martre | |
| Rae Lakes | |

Inuvik Region

| | |
|-------------------|--|
| Aklavik | Nursing Station; volunteers |
| Tukoyaktuk | R.C.M.P.; nursing stations |
| Other communities | Nursing stations; volunteers; government trucks, etc. |

Keewatin Region

| | |
|--------------------|--|
| Baker Lake | Hamlets, freighting companies, nursing stations, GNWT, taxi service, volunteers. Basically, whoever is available. |
| Coral Harbour | |
| Chesterfield Inlet | |
| Eskimo Point | |
| Rankin Inlet | |
| Repulse Bay | |
| Whale Cove | |

Kitikmeot Region

| | |
|---------------|-------------------------------|
| Cambridge Bay | Nursing Station vehicle, taxi |
| Coppermine | Nursing Station; hamlet truck |
| Gjoa Haven | Hamlet van |
| Pelly Bay | Hamlet pickup truck |
| Spence Bay | Taxi service; R.C.M.P. |
| Holman Island | Taxi service |

APPENDIX 4

AIR AMBULANCE SERVICES IN THE N.W.T.

APPENDIX 4
AIR AMBULANCE SERVICES
IN THE N.W.T.

| ZONE | <u>MOST COMMON CARRIERS AND AIRCRAFT</u> | <u>CARRIERS TO TERTIARY CARE CENTRES</u> | <u>EQUIPMENT SUPPLY</u> | <u>MEDICAL ESCORTS</u> | <u>AVAILABILITY OF AIRCRAFT</u> |
|-----------|--|--|---|--|---|
| BAFFIN | First Air provides most medivac services (Hawker Siddley 748 usually). Kenn Borek Air serves Grise Fiord and Resolute Bay. | Nordair (Boeing 737) to Montreal; almost all medivacs to Montreal are scheduled flights. | Supplied by nursing stations or by hospital in Frobisher Bay. Standard medivac kits. Planes not equipped except with incubator plug-ins. | Nurses from hospital in Frobisher Bay or from stations. Physicians occasionally. | No dedicated aircraft. Carriers will cancel other commitments in favour of medical evacuations. Delays rare. |
| INUVIK | Kenn Borek Air (Kingair and Queenair craft) and Aklak Air (Navaho Chieftains) do most emergency work. Inuvik Coastal Airways sometimes used for Sachs Harbour (Turbo Commander) due to speed. | PWA scheduled flights to Edmonton used for some emergencies. Inuvik Coastal Airways (Commander). Brooker Wheaton (Lear jet from Edmonton) for neonatal patients. | Supplied by hospital in Inuvik or by nursing stations (standard evacuation kit), Inuvik Coastal Airways craft pressurized for high altitudes; has oxygen equipment. Carriers have incubator plug-ins. | Nurses from hospital in Inuvik; nurses from Stations occasionally. | No dedicated aircraft. Carriers will cancel other commitments in favour of medivacs. Delays rare - due to weather, or time needed to get equipment on planes. |
| KEEWATIN | Calm Air (Kingair craft) based in Churchill. Keewatin Air (Twin Otter) based in Rankin Inlet. May use First Air (Twin Otter based in Hall Beach) for Repulse Bay and Coral Harbour occasionally. | Calm Air (Kingair to Winnipeg. PWA when scheduled flights can fill the need. Manitoba Government Air (Citation jet, Chieftain) occasionally. | Provided by nursing stations (standard kits and drugs). Some supplied by hospital in Churchill. Stations have transport incubators. Carriers have plug-ins. | From provincial hospital in Churchill, some from stations occasionally. | No dedicated aircraft. But carriers will cancel other commitment in favour of medivacs. Delays are rare, and are usually caused by poor weather. |
| MACKENZIE | North Mackenzie - Adlair (kingair craft) based in Cambridge Bay. | PWA to Edmonton (scheduled flights). Charters Ptarmigan, Latham, Adlair, Brooker Wheaton (Lear jet specially equipped for neo-natal medivacs). Northwest Territorial Airways (scheduled flights) | Planes not equipped (except Brooker Wheaton). Equipment and supplies taken on board by Medical Services staff. | Medical Services Personnel | No dedicated aircraft. Carriers cancel other commitments in favour of medivacs. Delays rare. Planes almost always available. |

APPENDIX 4 (Continued)

| <u>ZONE</u> | <u>MOST COMMON CARRIERS AND AIRCRAFT</u> | <u>CARRIERS TO TERTIARY CARE CENTRES</u> | <u>EQUIPMENT SUPPLY</u> | <u>MEDICAL ESCORTS</u> | <u>AVAILABILITY OF AIRCRAFT</u> |
|-----------------|--|---|---|-----------------------------------|---|
| <u>ACKENZIE</u> | <p>North Mackenzie - Adlair (Kingair craft) based in Cambridge Bay, P.W.A., NWT Air.</p> <p>South Mackenzie - P.W.A., Ptarmigan, Simpson Air, Wolverine Air, Ft. Smith Air, Landa.</p> | <p>PWA to Edmonton (scheduled flights). Charters - Ptarmigan, Latham, Adlair, Brooker Wheaton (Lear jet specially equipped for neo-natal medivacs).</p> | <p>Planes not equipped (except Brooker Wheaton). Equipment and supplies taken on board by Medical Services staff.</p> | <p>Medical Services Personnel</p> | <p>No dedicated aircraft. Carriers cancel other commitments in favour of medivacs. Delays rare. Planes almost always available.</p> |

The information in Appendix 4 was compiled by means of telephone interviews with Zone Nursing Officers in the four Zones of the Medical Services Branch, N.W.T. Region.

APPENDIX 5

AMBULANCE SERVICES IN OTHER JURISDICTIONS

Because ambulance services are a health matter, they are a provincial responsibility under the constitution. Consequently, the variations from one jurisdiction to the next are numerous. In the accompanying chart, the ambulance program in each jurisdiction is described under the general headings of: Provincial Administrative Authority, Legislation, Legislated Standards, Operators, Funding, Liability Insurance and Other Information. Information on ambulance services in Quebec is not available at this time.

Despite the obvious differences between jurisdictions, there are certain common elements which are worth noting.

PROVINCIAL ADMINISTRATIVE AUTHORITY

In most provinces and in the Yukon, the provincial administrative authority (the body responsible for overseeing ambulance services in general) is a provincial government department (Nfld, N.S., N.B., Que., Ont., Sask., Alta., Yukon). The exceptions are P.E.I. (the Hospital Services Commission), Manitoba (the Health Services Commission) and British Columbia (the Emergency Health Services Commission).

In three of the provinces there is some division of responsibility at the provincial level. In Newfoundland, while the Department of Health has funding and ambulance staff training responsibilities, the Board of Commissioners of Public Utilities is responsible for administering the ambulance legislation. Nova Scotia has an Ambulance Advisory Board. In Saskatchewan ambulance staff training is the responsibility of the Department of Continuing Education. The Justice Institute of British Columbia carries a similar responsibility in that province.

LEGISLATION

Of the eleven jurisdictions described in the table (N.W.T. is not included), two do not have ambulance legislation. In Nova Scotia

an Order-in-Council gives responsibility for ambulance services to the provincial Department of Health. The Yukon has no ambulance legislation.

In the other nine jurisdictions, there is considerable variation. Four provinces incorporate ambulance legislation into their Public Health Acts and regulations (P.E.I., Manitoba, Saskatchewan and Quebec). Saskatchewan has three other acts which affect the organization and funding of ambulance services.

Only two provinces (Ontario and New Brunswick) have separate ambulance acts and regulations. British Columbia has an Emergency Health Act; however, it only serves to establish the Emergency Health Services Commission while granting to it extensive regulatory powers not requiring legislated regulations.

In Newfoundland, ambulance legislation is contained in the Motor Carrier Act and Regulations. In Alberta, the very limited ambulance legislation is contained in the Highway Traffic Act and Regulations (minimal standards) and in the Municipal Act (measures enabling municipalities to establish and fund ambulance services).

LEGISLATED STANDARDS

Six of the provinces (Newfoundland, P.E.I., New Brunswick, Ontario, Manitoba and Saskatchewan) have detailed regulations concerning standards for vehicles and equipment. Of these six all except Newfoundland have minimum standards concerning the training of staff, and licensure of operators and staff.

In Nova Scotia, the standards for ambulance services are listed in detail in the annual agreement between the government and the Ambulance Operators Association. They include standards for vehicles, equipment and supplies. There are minimal standards for staff training.

Standards in British Columbia are established by the Emergency Health Services Commission covering all aspects of ambulance

services (vehicles, equipment, supplies, staff training and licensure of operators and staff). Only the staff training and licensure standards are set in legislation. All other standards are set by the Commission itself.

In the Yukon, standards are established internally by the government and are not contained in legislation. Details of the standards are not available.

In Alberta, there are minimal standards contained in the Regulations to the Highway Traffic Act. The province has delegated the responsibility for establishing standards to the municipalities which may pass by-laws governing ambulance services in their jurisdictions. Consequently, standards vary widely across the province. The Alberta Ambulance Operators Association has established its own standards for its members.

In most provinces standards for staff training are, for the most part, exceeded. All governments, with the exception of Alberta, encourage better training and provide funding for that purpose. In Alberta, some municipalities do this.

OPERATORS

The reader should refer to the table for details on who operates ambulance services. In most jurisdictions services are provided by a mixture of volunteer agencies, private commercial operators, hospitals and municipalities. In Ontario, the Ministry of Health provides services in some areas, as does the Emergency Health Services Commission in B.C. In the Yukon, the Territorial Government is the main provider of services. Saskatchewan is somewhat unique with its Ambulance District Boards, which may either operate the services themselves or contract out to private or volunteer operators.

FUNDING

The funding arrangements for ambulance services exhibit more variation across the jurisdictions than any other characteristic. There are generally three categories of funding: capital, operating, and training. Funding for training has been summarized under LEGISLATED STANDARDS. Some provinces provide explicit capital funding (Newfoundland, P.E.I., New Brunswick). In Nova Scotia capital funding is built into the rate structure. For several provinces this information is not yet available.

In the case of operating funds, revenue generally comes from two sources:

1. Provincial Government (flat rate per trip and/or kilometer charge; or per capita grants);
2. user fees (flat rate per trip and/or kilometer charge).

User fees are ubiquitous. Alberta is the only province which does not provide direct operating funding, except in limited circumstances (see table).

The various funding arrangements have evolved over time, and continue to evolve, according to the realities and requirements in each jurisdiction. This is in contrast to service standards, for which Ontario standards seem to be the benchmark for other provinces.

AIR AMBULANCE PROGRAMS

Six provinces have special air ambulance programs: Newfoundland, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia. In Newfoundland and Manitoba private commercial carriers provide the services while the provincial authorities administer the programs. In the four other provinces, government owned aircraft are used whenever possible.

In P.E.I. air ambulance services are provided by the Armed Forces. In Nova Scotia the provincial Natural Resources Department provides the service on an ad hoc basis. Details are not available for Quebec, New Brunswick and the Yukon.

SOURCES

1. Information from the provinces compiled and kindly provided by the City of Yellowknife.
2. Health and Welfare Canada - Additional Provincial Benefits: Information Exchange. (current to February 1984)
3. Information on Alberta Ambulance Services obtained from Department of Hospitals and Medical Care by phone.

| | NEWFOUNDLAND | NOVA SCOTIA | P. E. I. | NEW BRUNSWICK |
|-------------------------------------|--|---|--|---|
| PROVINCIAL ADMINISTRATIVE AUTHORITY | <ul style="list-style-type: none"> a. Legislation and regulations-Board of Commissioners of Public Utilities b. Subsidies - Dept. of Health c. Training - Dept. of Health | Dept. of Health and Ambulance Advisory Board | Hospital Services Commission Standards & Administrative Division | Department of Health, Insured Services Division |
| LEGISLATION | The Motor Carrier Act and Regulations | Order-in-Council (no legislation) | Public Health Act and Regulations | Department of Health, Insured Services Division |
| LEGISLATED STANDARDS | <ul style="list-style-type: none"> a. Vehicles - dimensions, capacity, furnishings, mech-fitness, sanitation, etc. b. Equipment - extensive list non-med, med equipment and supplies c. Staff - no standards in legislation about level of training d. Licensure - no special license required for operators | <p>Contained in annual contract between government and Ambulance Operators Assn.</p> <p>Standards apply to vehicles, equipment, accessories.</p> <p>Staff - minimal standards</p> | <ul style="list-style-type: none"> a. Vehicles - capacity, construction, mech fitness, etc. b. Equipment-extensive list of equipment and supplies c. Staff - minimum of Emergency Medical Training Certificate (90-120 hrs) d. Licensure - required for both operators and staff | <ul style="list-style-type: none"> a. Vehicles - capacity, construction, mech. fitness, etc. b. Equipment - extensive list of equipment and supplies. c. Staff - N.B. Ambulance Course I and II (56 hrs) d. Licensure - required for both operators and staff |

| | NEWFOUNDLAND | NOVA SCOTIA | P.E.I. | NEW BRUNSWICK |
|---------------------|---|---|--|---|
| OPERATORS | Urban - hospitals Rural - private commercial operators, community councils, service clubs, volunteers Air ambulance - private carrier under government contract. | Hospitals (2), private commercial operators. | Members of Ambulance Operators Association of P.E.I. under formal agreement with province | Hospitals, municipalities, St. John Ambulance, private commercial operators, industrial ambulances |
| FUNDING | <u>Capital</u> (Dept. of Health Grants) a. Private operators - \$1800 per year per ambulance b. Volunteer - 75% of replacement cost <u>Operating</u> a. Dept of Health subsidies: 77¢/mi first 50 mi 66¢/mi over 50 mi b. User fees: under 50 mi, \$20; over 50 mi, \$30 | <u>Capital</u> None provided by province <u>Operating</u> a. Dept of Health Subsidies: basic rate plus charge per km. b. User fees: \$30 less than 160 km; \$50 more than 160 km. | <u>Capital</u> Annual prov. grant per ambulance (\$4590 in 1983/84) <u>Operating</u> (1983) a. Dept Health subsidy \$53 per trip and \$1.10 per mi. b. User fee - \$40 per trip <u>Training</u> Province pays up to \$10,000 to operators for staff training | <u>Capital</u> Vehicle, equipment grants by province <u>Operating</u> Local taxation, user charges (may vary), other local arrangements <u>Other</u> Training program, communication system paid by province |
| LIABILITY INSURANCE | min. \$250,000 required | \$1 million recommended by province | min \$300,000 required | min \$300,000 required |
| OTHER INFORMATION | Air Emergency Ambulance Program for emergency transport of patients, equipment physicians. User fee \$50 | 1. Province divided into 59 service areas. Operators cannot operate outside service area except in certain circumstances 2. Special radio communication network in place | 1. Air ambulance services provided free by Armed Forces | |

| | QUEBEC | ONTARIO | MANITOBA | SASKATCHEWAN |
|-------------------------------------|------------------------------|---|--|--|
| PROVINCIAL ADMINISTRATIVE AUTHORITY | Ministry of Social Affairs | Ministry of Health, Emergency Health Services Division, Ambulance Services Branch | Manitoba Health Services Commission | a. Licensing and standards - Dept. of Health b. Funding - Dept. of Health c. EMT Training - Dept. of Continuing Education |
| LEGISLATION | Public Health Protection Act | Ambulance Act and Regulations | Public Health Act and Regulations | Urban Municipality Act Rural Municipality Act Public Health Act Ambulance Regulations Municipal Road Ambulance Services Grant Regulation |
| LEGISLATED STANDARDS | N.A. | a. Vehicles - construction, dimensions, mech. fitness etc b. Equipment - extensive list of equipment and supplies c. Staff - Emergency Medical Care Assistant Certificate d. Licensure - required of operators and staff | a. Vehicles - construction, dimensions, mech. fitness etc b. Equipment - extensive life of equipment, supplies c. Staff - St. John Ambulance - First Aid Certificate d. Licensure - required of operators and staff | a. Vehicles - construction, dimensions, mech. fitness etc. b. Equipment - extensive list of equipment, supplies c. Staff - Emergency Medical Technician Certificate d. Licensure - required of operators, not staff |

| | QUEBEC | ONTARIO | MANITOBA | SASKATCHEWAN |
|---------------------|--------|---|--|---|
| OPERATORS | N.A. | Hospitals, municipalities, volunteers, Ministry of Health private commercial services | Hospitals, fire departments, municipalities, private commercial operators | Ambulance District Boards (105) estab. under Municipality Acts either operate services (45) or contract out to private operators, hospitals or volunteer services. |
| FUNDING | N.A. | <p>Capital Information not available</p> <p>Operating</p> <p>a. All services funded by Ministry</p> <p>b. User fees - \$22 for medically necessary trip \$44 and \$1 per km over 40 km if not medically necessary</p> | <p>Capital Information not available</p> <p>Operating</p> <p>a. Dept. Health per capita grants to municipalities which then pay operators under contract</p> <p>b. User fees - \$15 to \$75 plus km charge from 65¢ to \$1.10 per km</p> | <p>Capital Information unavailable</p> <p>Operating</p> <p>a. Provincial per capita grants to municipalities which give money to ambulance district boards</p> <p>b. User fees - max \$65 per trip plus charge per kilometre set by Boards.</p> |
| LIABILITY INSURANCE | N.A. | Min \$1,000,000 required Ministry services insured for \$2,000,000 | min \$300,000 required | No defined minimum \$1.5 million is typical |
| OTHER INFORMATION | N.A. | Ministry operates 5 air ambulances. Details of service not yet available. User fees same as for ground ambulance | Manitoba has Northern Patient Transportation Program similar to GMMT Medical Travel Program. No user fees. Air, rail, bus companies utilized. | Air Ambulance Program serves patients in emergencies in rural areas. User fee - \$140 per trip. Operated by Dept. of Health |

| | ALBERTA | BRITISH COLUMBIA | YUKON |
|-------------------------------------|--|---|--|
| PROVINCIAL ADMINISTRATIVE AUTHORITY | Dept. of Hospitals and Medical Care, Emergency Services Division. | Emergency Health Services Commission (reports to Minister of Health.) | Dept. of Municipal and Community Affairs, Protective Services Branch. |
| LEGISLATION | Highway Traffic Act and Regulation 2. Municipal Act. | Health Emergency Act The Commission may make rules and regulations governing its procedures. | No legislation |
| LEGISLATED STANDARDS | Minimal in provincial legislation. Municipalities, under authority of Municipal Act, may set standards applicable to their jurisdictions, regarding vehicles, equipment & staffing. Some do this some do not. Standards vary widely, Alberta Ambulance Operators Association sets standards for members. | Vehicles and equipment -standards set by Commission: Information not available. Staff-Industrial First Aid Certificate required, Staff can be licenced for 3 different EMA levels. Licensure-attendants and operators must be licenced. | Standards set internally, not in legislation. |
| OPERATORS | Volunteer societies Private commercial operators. Municipalities (fire departments, hospital-based.) | Fire departments, Ambulance societies or the Commission itself. | Yukon Ambulance Service operated by government of Yukon. Privately owned ambulance at two mines. |

| | ALBERTA | BRITISH COLUMBIA | YUKON |
|---------------------|---|---|---|
| FUNDING | Provincial funding limited to interhospital transfers air ambulance service, senior, people on welfare. Most funding by municipalities (some do not provide any.) Much variation in methods of funding for both capital and operating funds. | Operators funded by Commission which is in turn funded by government. User fees-\$25 for first 40 km.; 26¢ per km over 40 km. to max. of \$162 total. | Y.A.S. funded by government (operating and capital.) User fees-\$10 per call + 35¢ ml. over 15 miles. |
| LIABILITY INSURANCE | No uniformity | Not available | Coverage of \$1 million. |
| OTHER INFORMATION | <ol style="list-style-type: none"> 1. While ambulances are a health matter, in Alberta the provincial government has delegated virtually all its responsibility to municipalities, resulting in wide variation between municipalities. 2. An act, regulations programs and procedures developed, not yet adopted by government. 3. Prov. gov't does administer an air ambulance program. | The Commission operates an Air Ambulance service for medical emergencies. Government aircraft when available; otherwise commercial carriers or armed forces | |

APPENDIX 6

N.W.T. COMMUNITIES AND GROUND AMBULANCE STANDARDS

N.W.T. COMMUNITIES AND GROUND AMBULANCE STANDARDS

| Communities by Region | Municipal Status | Population | Highway Location | Health Facilities | Level of Ambulance Standards | | |
|--------------------------|---------------------|------------|---------------------|----------------------|------------------------------|----------|-----------|
| | | | | | Level I | Level II | Level III |
| <u>BAFFIN</u> | | | | | | | |
| Frobisher Bay | Town | 2,900 | Not Applicable | Hospital | X | | |
| Pangnirtung | Hamlet | 887 | " | Nursing Station | | X | |
| Cape Dorset | Hamlet | 849 | " | " | | X | |
| Igloodik | Hamlet | 755 | " | " | | X | |
| Pond Inlet | Hamlet | 803 | " | " | | X | |
| Clyde River | Hamlet | 496 | " | " | | | X |
| Broughton Is. | Hamlet | 411 | " | " | | | X |
| Arctic Bay | Hamlet | 438 | Road to Nanisivik | " | | X | |
| Sanikiluaq | Hamlet | 420 | Not Applicable | " | | | X |
| Hall Beach | Hamlet | 409 | " | " | | | X |
| Nanisivik | Unorg. | 280 | Road to Arctic Bay | " | | X | |
| Lake Harbour | Hamlet | 273 | Not Applicable | " | | | X |
| Resolute | Settlement | 162 | " | " | | | X |
| Grise Fiord | Settlement | 128 | " | " | | | X |

INUVIK

| | | | | | | | |
|------------------|------------|-------|----------------|-----------------|---|---|---|
| Inuvik | Town | 3,420 | Dempster | Hospital | X | | |
| Tuktoyaktuk | Hamlet | 870 | Winter Road | Nursing Station | | X | |
| Aklavik | Hamlet | 764 | " | " | | X | |
| Fort McPherson | Settlement | 700 | Dempster | " | | X | |
| Fort Franklin | Hamlet | 574 | Winter Road | " | | X | |
| Fort Good Hope | Settlement | 541 | Not Applicable | " | | X | |
| Norman Wells | Hamlet | 612 | " | " | | X | |
| Fort Norman | Hamlet | 299 | Winter Road | " | | | X |
| Paulatuk | Settlement | 192 | Not Applicable | " | | | X |
| Arctic Red River | Settlement | 121 | Dempster | " | | | X |
| Sache Harbour | Settlement | 158 | Not Applicable | " | | | X |
| Colville Lake | Unorg. | 57 | " | Health Station | | | X |

N.W.T. COMMUNITIES AND GROUND AMBULANCE STANDARDS

| Communities by Region | Municipal Status | Population | Highway Location | Health Facilities | Level of Ambulance Standards | | |
|-----------------------|------------------|------------|------------------|-------------------|------------------------------|----------|-----------|
| | | | | | Level I | Level II | Level III |
| <u>KEENWATIN</u> | | | | | | | |
| Rankin Inlet | Hamlet | 1,272 | Not Applicable | Nursing Station | | X | |
| Eskimo Point | Hamlet | 1,143 | " | " | | X | |
| Baker Lake | Hamlet | 997 | " | " | | X | |
| Coral Harbour | Hamlet | 445 | " | " | | X | |
| Repulse Bay | Hamlet | 397 | " | " | | | X |
| Chesterfield Inlet | Hamlet | 264 | " | " | | | X |
| Whale Cove | Hamlet | 203 | " | " | | | X |

KITIKMEOT

| | | | | | | | |
|----------------|--------|-----|----------------|-----------------|--|---|---|
| Cambridge Bay | Hamlet | 926 | Not Applicable | Nursing Station | | X | |
| Coppermine | Hamlet | 848 | " | " | | X | |
| Gjoa Haven | Hamlet | 632 | " | " | | X | |
| Spence Bay | Hamlet | 459 | " | " | | | X |
| Holman Island | Hamlet | 337 | " | " | | | X |
| Pelly Bay | Hamlet | 270 | " | " | | | X |
| Bay Chimo | Unorg. | 65 | " | Lay Dispenser | | | X |
| Bathurst Inlet | Unorg. | 22 | " | " | | | X |

FORT SMITH

| | | | | | | | |
|-----------------|------------|--------|---------------|-----------------|---|---|--|
| Yellowknife | City | 10,885 | Highway 3 & 4 | Hospital | X | | |
| Hay River | Town | 3,112 | Highway 2 & 5 | Hospital | X | | |
| Fort Smith | Town | 2,408 | Highway 5 | Hospital | X | | |
| Pine Point | Town | 1,710 | Highway 6 | Health Centre | X | | |
| Rae Edzo | Hamlet | 1,515 | Highway 3 | Hospital | X | | |
| Fort Simpson | Village | 1,054 | Highway 1 & 7 | Hospital | X | | |
| Fort Providence | Settlement | 659 | Highway 3 | Nursing Station | | X | |

N.W.T. COMMUNITIES AND GROUND AMBULANCE STANDARDS

| Communities by Region | Municipal Status | Population | Highway Location | Health Facilities | Level of Ambulance Standards | | |
|-----------------------------|------------------|------------|-------------------|----------------------|------------------------------|----------|-----------|
| | | | | | Level I | Level II | Level III |
| <u>FORT SMITH</u> continued | | | | | | | |
| Fort Resolution | Settlement | | Highway 6 | Nursing Station | | X | |
| Fort Liard | Settlement | | Highway 7 | " | | X | |
| Tungsten | Unorg. | | Yukon #10 | Health Clinic | | | X |
| Hay River Reserve | Reserve | | Highway 5 | Hospital (Hay River) | | | |
| Lac La Martre | Settlement | | Winter Road | Health Station | | | X |
| Snowdrift | Settlement | | Not Applicable | Nursing Station | | | X |
| Rae Lakes | Settlement | | " | " | | | X |
| Detah | Unorg. | | Road | Health Station | | | X |
| Fort Wrigley | Settlement | | Not Applicable | Nursing Station | | | X |
| Nahanni Butte | Unorg. | | " | Health Station | | | X |
| Snare Lake | Settlement | | " | Lay Dispenser | | | X |
| Jean Marie River | Unorg. | | Winter Road | Lay Dispenser | | | X |
| Trout Lake | Unorg. | | Not Applicable | Lay Dispenser | | | X |
| Enterprise | Unorg. | | Highways 1, 2 & 3 | None | | | X |
| Kakisa | Unorg. | | Not Applicable | Lay Dispenser | | | X |

1
92
1

Level I - 8 communities
 Level II - 22 communities
 Level III - 32 communities

Populations as of December, 1984; data supplied by Government of the Northwest Territories Bureau of Statistics.

APPENDIX 7

EMERGENCY MEDICAL TECHNICIAN - AMBULANCE:

TRAINING PROGRAM AT THE

SOUTHERN ALBERTA INSTITUTE OF TECHNOLOGY



Southern Alberta
Institute of Technology
1301 - 16 Avenue Northwest
Calgary, Alberta, Canada T2M 0L4

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INFORMATION RE: EMT-AMBULANCE PROGRAM

Thank you for your interest in the EMT-Ambulance Program.
I am enclosing some information concerning the program
and course content.

At this time the program is available primarily to those
people who are providing an emergency service in Alberta
- that is ambulance, fire or police. In certain communities
where space in a learning centre is available, other
students can be accepted following an approved priority
list. Specific information concerning this can be obtained
from this office.

The location of EMT-Ambulance Learning Centres for the September
1984 to June 1985 school year will be as follows:

| | |
|----------------|------------|
| Beaverlodge | Jasper |
| Calgary (SAIT) | Lethbridge |
| Claresholm | Red Deer |
| Edmonton | Slave Lake |
| High Level | Vegreville |

If you qualify to take the program - that is if you are
employed by one of the Emergency Services - Fire - Police
- Ambulance - please write for an application form.

Yours sincerely,

A handwritten signature in cursive script that reads "Jan Williams".

Jan Williams
Co-ordinator
EMT-Ambulance Program

/9j

Emergency Medical Technician - Ambulance Program

EMT-Ambulance Office Phone: 284-8693

The EMT-Ambulance Program provides upgrading for emergency personnel involved in providing ambulance care in Alberta. The ambulance attendant is likely the patient's first contact with the medical community and the care that he/she provides is critical to the patient and often determines the patient's length of stay in the hospital and degree of recovery.

Course Content

The course covers all aspects of pre-hospital emergency care. The student will learn basic Anatomy, Physiology and disease processes. He will learn to identify medical problems and the correct intervention for each patient. He will become familiar with the use of equipment found on an ambulance. He will learn how to safely transport the patient to a medical facility where definitive care can be given. The program also includes modules on medical/legal aspects of care and emergency driving.

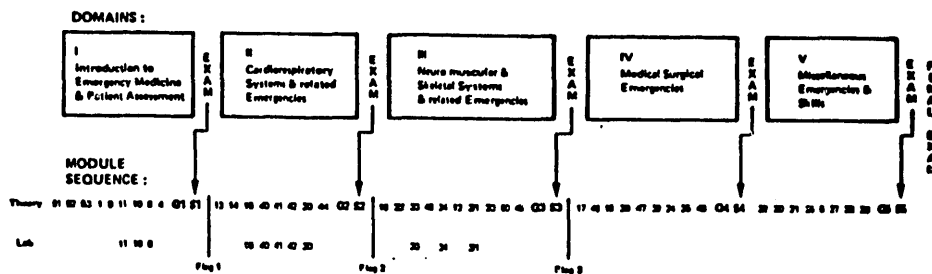
There are two subjects in the program. The theory portion is a "computer managed learning" subject. The computer issues exams, marks the exams and keeps records of each student's progress.

The "lab" subject is the practical component of the program. Here the student must learn to perform certain skills such as the management of spinal injuries and the use of resuscitation equipment.

The following course map will list the topics and their sequence in the EMT-Ambulance Program:



EMT - AMBULANCE COURSE MAP



THEORY MODULES

- | | |
|--|------------------------------|
| 1. Medical Terminology | 21. Hyper-Hypo Thermia |
| 4. Reports & Records | 22. Muscular System |
| 5. Behavioral Patterns | 23. Special Senses |
| 6. Lifting Techniques & Transportation | 24. Childbirth |
| 8. Anatomical Planes, Sections, Directions | 25. I.V. Fluids |
| 10. Diagnostic Signs | 26. Communication |
| 11. Patient Assessment | 27. Rescue & Evacuation |
| 12. Nervous System | 29. Emergency Driving |
| 13. Circulatory System | 30. Shock |
| 14. Respiratory System | 31. Head & Spinal Injuries |
| 16. Cardio-Pulmonary Resuscitation | 32. Pediatric Emergencies |
| 16. Skeletal System | 33. Fractures & Dislocations |
| 17. Gastrointestinal System | 34. Dressings & Bandaging |
| 18. Genitourinary System | 35. Medical Emergencies |
| 20. Burns | 36. Patients & Drug Overdose |

LAB MODULES

- | |
|-----------------------------------|
| 6. Lifting Techniques |
| 10. Assessment of Vital Signs |
| 11. Patient Assessment |
| 18. C.P.R. |
| 20. M.A.S.T. |
| 21. Management of Spinal Injuries |
| 23. Gelling |
| 24. Dressings & Bandaging |
| 26. Artificial Ventilation |
| 41. Airway & Suction Devices |
| 42. Oxygen Administration |

The Program Delivery Mode

The EMT-Ambulance Program is offered by SAIT in several communities throughout the province. Since this is a computer managed learning program, each learning centre is complete with a computer terminal which is directly linked to the main computer at SAIT. Students study on their own at home or in the centre, using the reference material and video tapes provided in the Learning Centre.

Regular visits are made to each outreach learning centre by a SAIT Instructor. During these visits students are encouraged to attend a short workshop. Students will also be given the opportunity to ask questions and receive personalized instruction if they choose.

The EMT-Ambulance Program is a competency based program. This means that each student can proceed through the program at his own rate within reason. As soon as he has mastered one topic he then moves to the next topic. However, each student must complete the program within one year.

Locations

The outreach learning centres are located in various communities throughout the province. Each centre remains in place for one academic year - from September until June. There are no centres during July or August.

In addition to the outreach centres, there will be two permanent centres, one in Edmonton and one in Calgary. These centres are also operational from September until June each year.

Pre-requisites

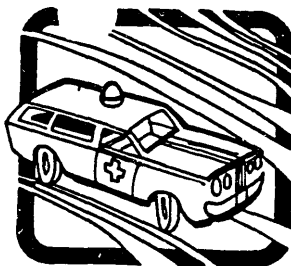
Students must be 18 years of age and be employed with a municipal ambulance service. This employment can be full time, part time or volunteer, as long as the student actually provides patient care.

Costs

The cost of the course is \$100.00. The required textbooks will be approximately \$60.00.

Further information and applications can be obtained from:

EMT-Ambulance Program
Southern Alberta Institute of Technology
1301 - 16th Avenue N.W.
Calgary, Alberta
T2M 0L4



EMERGENCY MEDICAL TECHNICIAN- AMBULANCE

Department Head **N. J. Senn**

284-8481

Program Coordinator — J. Williams 284-8633

EDUCATIONAL PREREQUISITES

This program is available to those people who are presently involved with providing emergency ambulance care in Alberta. The EMT-Ambulance Program is not designed as a pre-employment training course. There are no specific educational requirements for this course.

LENGTH OF PROGRAM

This is an individualized program and the student is allowed to progress at his/her own rate. Most students complete the course in about four and one half months if they are studying part time. Full time students complete the course in eight weeks. There is a maximum time limit of one year from the registration date.

FEES AND EXPENSES (1983)

The cost of the program is \$93.00 (subject to change) which includes registration fee, module study guide and use of all equipment including the computer. Text books cost approximately \$50.00.

The Program

The EMT-Ambulance Program provides upgrading for emergency personnel involved in providing ambulance care in Alberta. The ambulance attendant is likely the patient's first contact with the medical community and the care that he/she provides is critical to the patient and often determines the patient's length of stay in the hospital and degree of recovery.

COURSE CONTENT

This program covers all aspects of pre hospital emergency care right from the time the call is received, including driving skills to use in responding to the call, patient assessment and care, professional communication with the hospital staff and the required procedure for charting and recording. The student will learn basic Anatomy and Physiology and will learn the proper emergency care for a variety of medical emergencies.

In addition to a theory portion of the course, there is also a practical component. This section is in the form of labs which cover such skills as patient assessment, CPR and use of resuscitation equipment.

THE PROGRAM DELIVERY MODULE

The EMT-Ambulance Program is offered by SAIT in several communities throughout the province. Since this is a computer managed learning program, each learning center is complete with a computer terminal which is directly linked to the main computer at SAIT. Students study on their own at home or in the center, using the reference material and video tapes provided in the Learning Center.

When the student feels he/she fully understands a module he/she asks for an exam from the computer.

The computer issues students' exams, marks the exam and gives instant feedback to the student identifying his problem areas.

Regular visits are made to each Outreach Learning Center by a SAIT Instructor. During these visits, students can arrange personalized instruction and evaluation.

Although the student can work independently, they are not isolated from an instructor. A SAIT instructor can be contacted by computer or by telephone.

The province has been divided into 10 regions and every attempt has been made to maintain a Learning Center in each region. In this way students can gain access to a Learning Center without extensive travel. These centers remain in the area given community for a period of one academic year (September until June). In addition to these ten Outreach Learning Centers there are permanent centers located in Calgary and Edmonton.

COURSE CONTENT

The following areas are covered within the course:

THEORY MODULES

Introduction to Emergency Medical Services
Legal Aspects to Emergency Care
Ethics
Medical Terminology
Anatomical Planes, Surfaces, Directions
Patient Assessment
Diagnostic Signs
Lifting Techniques & Transportation
Reports & Records
Circulatory System
Respiratory System
Cardio-Pulmonary Resuscitation
Artificial Ventilation
Resuscitation Equipment
Oxygen Administration
Shock
Heart Attack
Skeleton System
Muscular System
Fractures & Dislocations
Bleeding & Soft Tissue Injuries
Dressings & Bandaging

Nervous System
Head & Spinal Injuries
Special Senses
Facial Injuries
Stroke
Gastrointestinal System
Diabetes Mellitus
Genitourinary System
Poison & Drug Overdose
Unconscious States
Reproductive System
Childbirth
Medical Emergencies
Chest & Abdominal Injuries
Pediatric Emergencies
Burns
Hyper-Hypo Thermia
I.V. Fluids
Behavioral Patterns
Rescue & Extrication
Emergency Driving
Communication

LAB MODULES

Patient Assessment
Assessment of Vital Signs
Lifting Techniques
C.P.R.
Artificial Ventilation
Airway & Suction Device

Oxygen Administration
M.A.S.T.
Splinting
Dressing & Bandaging
Management of Spinal Injuries

APPENDIX 8

GUIDELINES FOR AMBULANCE VEHICLES

- I. LEVEL I VEHICLES
- II. LEVEL II VEHICLES
- III. LEVEL III VEHICLES

AMBULANCE DESIGN AND CONSTRUCTION - LEVEL I

The standards outlined here should apply fully only to new and replacement vehicles. Existing vehicles should be upgraded to the extent that is practical.

1. The external dimensions of an ambulance (i.e. the wheel base, and tracking width of the front wheels) should be such as to ensure adequate stability, handling and comfort while the vehicle is in operation.
2. Ambulance vehicles should have four-wheel drive capability.
3. The internal dimensions of the patient compartment of an ambulance should provide:
 - (a) adequate space between floor and ceiling;
 - (b) for the placement and transport of one stretcher patient on the left side of the patient compartment;
 - (c) for a bench seat along the right side of the patient compartment that can accommodate either four sitting passengers or one stretcher;
 - (d) for seating in the patient compartment for at least one attendant with one such attendant's seat at the head of the principal or main stretcher patient;
 - (e) readily accessible and sanitary storage space for medical equipment.

4. The internal dimensions of an ambulance should provide for:
 - (a) a full width partition, providing access from the driver's compartment to the patient compartment through a sliding door or curtain; and
 - (b) easy loading of stretcher patients by means of a door or doors at the rear of the vehicle, and easy loading of ambulatory patients by means of a door or doors on the right side.

5. Any door opening into or out of the patient compartment should be designed and equipped to permit such door to be opened from the inside of the vehicle, and such opening mechanism should:
 - (a) contain instructions for the opening thereof on or adjacent thereto; and
 - (b) be designed to prevent inadvertent opening.

6. A lap-type safety seat belt conforming to the standards prescribed in the regulations under the Motor Vehicle Safety Act (Canada) should be provided for each seating position in the vehicle, and such belt locking mechanism and mounting device should be properly maintained and in good working order.

7. Every ambulance should provide:
 - (a) adequate comfort and safety for patients being transported with the chassis so sprung as to provide maximum riding comfort in the patient compartment;

- (b) adequate temperature regulation and ventilation;
- (c) interior lighting adequate for the care of patients;
- (d) a rear flood light designed and attached to light the area immediately to the rear of the ambulance automatically upon opening of the rear door or doors; and
- (e) such storage for ambulance equipment as to prevent or minimize projections and sharp edges, and to keep such equipment readily available for use.

8. Every ambulance should have:

- (a) a distinctive signal lighting system;
- (b) an audio warning (siren) device; and
- (c) a public address system

approved by the Department of Health.

9. The controls for the signals and devices in section 8 should be readily accessible to the driver such that they can be operated by him while seated in the driving position.
10. Every ambulance should display the word "Ambulance" in block letters of retro-reflective material at least 7 inches (17.50 centimetres) in height, with the lines making up the letter at least 1 inch (2.5 centimetres) in thickness on the rear of the vehicle, and where applicable relative to the design of the vehicle, on the front thereof.

AMBULANCE DESIGN AND CONSTRUCTION - LEVEL II

1. The internal dimensions of the patient compartment of an ambulance should provide:
 - (a) for the placement and transport of two stretcher patients;
 - (b) for the placement and transport of at least one sitting patient when only one stretcher is in use;
 - (c) for seating in the patient compartment for at least one attendant with one such attendant's seat at the head of the principal or main stretcher patient;
 - (d) readily accessible and sanitary storage space for medical equipment.

2. The internal dimensions of an ambulance should provide for easy loading of stretcher patients by means of a door or doors at the rear of the vehicle, and easy loading of ambulatory patients by means of a door or doors on the right side.

3. Any door opening into or out of the patient compartment should be designed and equipped to permit such door to be opened from the inside of the vehicle, and such opening mechanism shall be designed to prevent inadvertent opening.

4. A lap-type safety seat belt conforming to the standards prescribed in the regulations under the Motor Vehicle Safety Act (Canada) should be provided for each seating position in the vehicle, and such belt locking mechanism and mounting device shall be properly maintained and in good working order.

LEVEL III AMBULANCE VEHICLES

No dedicated ambulance vehicles should be required in Level III communities. Vehicle and transportation arrangements currently used in these communities should be formalized. Ideally, vehicles used for ambulance services should have capacity for transporting patients comfortably on stretchers in an enclosed space protected from the elements.

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APPENDIX 9

GUIDELINES FOR AMBULANCE EQUIPMENT

| EQUIPMENT KITS AND CONTENTS | Level III | Level II | | Level I | |
|--|------------|----------|------------|---------|------------|
| | In Storage | In Car | Jump Kit | In Car | Jump Kit |
| A. PATIENT TRANSPORT EQUIPMENT | | | | | |
| Main Cot: - 7 Level with safety straps | - | | 1 | | 1 |
| Cardiac Board | - | | 1 | | 1 |
| Foam Rubber Mattress - divided | - | | 1 | | 1 |
| Small Pillow: | | | | | |
| - hypoallergenic | 2 | | 4 | | 4 |
| Large Pillow: | | | | | |
| - hypoallergenic | 1 | | 1 | | 1 |
| Pillow cases | 3 | | 5 | | 5 |
| Sheets: | | | | | |
| - paper | 2 | | 4 | | 4 |
| - linen | 2 | | 6 | | 6 |
| - Surgi-Lift (if carried) | - | | 2 | | 2 |
| Blankets: | | | | | |
| - wool | 3 | | 6 | | 6 |
| - Thermal | - | | 3 | | 3 |
| - emergency | - | | 2 | | 2 |
| - space | 4 | | 2 | | 2 |
| I.V. Pole to fit Main Cot | - | | 1 | | 1 |
| Stretcher: | | | | | |
| - emergency (F.W. #9 with straps) | 2 | | 2 | | 2 |
| - F.W. #109 | - | | 1 | | 1 |
| - Robertson (Orthopaedic F.W. #66) | - | | 1 | | 1 |
| - scoop | - | | | | |
| Restraining straps for: | | | | | |
| - Robertson Stretcher | - | | 3 | | 3 |
| Spine Board - full length | 1 | | 1 | | 1 |
| Restraining straps - 10' | 4 | | 4 | | 4 |
| - 8' | 4 | | 4 | | 4 |
| Sand Bags: | | | | | |
| - positioning - 5 lb. | 2 | | 2 | | 2 |
| - 10 lb. | 2 | | 2 | | 2 |
| Leather restraints | - | | 1 set | | 1 set |
| B. FRACTURE KIT | | | | | |
| Cervical collar: | | | | | |
| - assorted S., M., L., XL. | 1 per size | | 2 per size | | 2 per size |
| Neck roll | 1 | | 2 | | 2 |
| 3M tape - rolls - 1" | 2 | | 2 | 1 | 2 |
| Splint padded board: | | | | | |
| - adult femur | - | | 1 | | 1 |
| - adult tib-fib | - | | 1 | | 1 |
| - child's femur | - | | 1 | | 1 |
| - child's tib-fib | - | | 1 | | 1 |
| Splint - metallic | - | | 4 | | 4 |
| Foam 1" X 3" X 24" | - | | | | |
| - to fit metallic splint | - | | 2 | | 2 |
| Splint: | | | | | |
| - pillow | - | | 1 | | 1 |
| - assorted Colies | - | | 1 per size | | 1 per size |
| C. OXYGEN EQUIPMENT | | | | | |
| Oxygen tank for piped in supply (H) | - | | - | | 1 |
| Oxygen Tanks (portable)(E) | 2 | | 2 | | 2 |
| Oxygen Regulator: | | | | | |
| - piped in system 50 psi preset | - | | - | | 1 |
| - on yoke with press and flow meter | 1 | | 2 | | 2 |

| EQUIPMENT KITS AND CONTENTS | Level III | Level II | | Level I | |
|--|------------|------------|------------|------------|------------|
| | In Storage | In Car | Jump Kit | In Car | Jump Kit |
| C. OXYGEN EQUIPMENT (continued) | | | | | |
| Oxygen flowmeter - wall mount | - | - | - | 2 | - |
| Wrench or handwheel for: | | | | | |
| - D or E cylinders | 2 | 2 | 1 | 2 | 1 |
| Bag Mask Resuscitator - Adult | 1 | 1 | | 1 | |
| Facepiece - Adult to fit | 1 | 1 | | 1 | |
| - Child's to fit | 1 | 1 | | 1 | |
| Bag Mask Resuscitator: | | | | | |
| - Paediatric | 1 | 1 | | 1 | |
| Infant facepiece to fit | 1 | 1 | | 1 | |
| Oxygen Reservoir to fit | 1 | 1 | | 1 | |
| Brooks Professional Resuscitator | - | 1 | | 1 | |
| Oxygen Mask Adult: | | | | | |
| - Disposable c/w tubing | 2 | 2 | 1 | 2 | 1 |
| Oxygen Mask Child: | | | | | |
| - Disposable c/w tubing | 2 | 2 | 1 | 2 | 1 |
| Oxygen Mask - Multi-Vent | 1 | 1 | | 1 | |
| Oxygen tubing 84" - c/w connectors | 1 | 2 | | 2 | |
| Oxygen nasal cannula: | | | | | |
| - Disposable c/w tubing | - | 2 | 1 | 2 | 1 |
| Oxygen humidifier: | | | | | |
| - aquasack disposable | | | | 1 | |
| - adapter disposable | | | | 1 | |
| D. AIRWAY AND SUCTION EQUIPMENT | | | | | |
| Airway Kit 0-6 | | 1 per size | 1 per size | 1 per size | 1 per size |
| Assorted Airways 00-6 | | 1 per size | 1 per size | 1 per size | 1 per size |
| Portable suction - electric | | | 1 | | 1 |
| Suction system piped in vehicle | | | | 1 | |
| Suction instrument - | | | | 1 | |
| Yankauer c/w tubing | | 1 | | 2 | |
| Suction tip - Yankauer | | 2 | | | |
| Assorted catheters: | | | | 2 each | 1 each |
| - suction 6, 8, 10, 14, 18 | | 2 each | 1 each | 2 | |
| Water bottle - suction flush | | 2 | | 2 | |
| Water bottle - suction flush 250 ml | | 2 | | 1 | |
| Savlion 1/30 - 250 ml | | 1 | | 1 | |
| Savlion 1/100 - 250 ml | | 1 | | 1 | |
| Savlion 1/200 - 250 ml | | 1 | | | |
| E. TRAUMA KIT | | | | | |
| Surgical gloves | 3 | | | 3 | |
| Tissues | 1 | | 3 | 1 | |
| Tongue depressors | 10 | | 1 | 10 | |
| Syringe - Ear - 28 ml | 1 | | 1 | 1 | |
| - 85 ml | | | 1 | 1 | |
| 2" Kling bandage | 3 | | 1 | 6 | 3 |
| 3" Kling bandage | 3 | | 6 | 6 | 3 |
| 4" Kling bandage | 3 | | 6 | 6 | 3 |
| 6" Kling bandage | 3 | | 6 | 6 | 3 |
| 1/2" Adhesive tape | - | | 2 | 2 | 1 |
| 1" Adhesive tape | 2 | | 2 | 2 | |
| 3" Adhesive tape | 2 | | 2 | 2 | |
| 5 X 9 sterile drainage dressing | 5 | | 10 | 20 | 7 |
| 8 X 10 sterile drainage dressing | 5 | | 10 | 20 | 7 |
| 10 X 30 sterile trauma dressing | | | 10 | 1 | |
| 3 X 3 gauze sponges - bulk | | | 1 | 25 | 10 |
| 4 X 4 gauze sponges - bulk | | | 25 | 20 | |
| Esmarch bandage | | | 20 | 1 | |
| 3 X 3 sterile gauze pads: | | | 1 | | |
| - individual pack | | | | 20 | |
| 4 X 4 sterile gauze pads: | 20 | | 20 | 20 | 10 |
| - individual pack | | | 20 | | |

| EQUIPMENT KITS AND CONTENTS | Level III | Level II | | Level I | |
|---|------------|----------|----------|---------|----------|
| | In Storage | In Car | Jump Kit | In Car | Jump Kit |
| E. TRAUMA KIT (continued) | | | | | |
| 3" pressure dressing | 3 | 3 | 1 | 6 | 1 |
| 4" pressure dressing | 3 | 3 | 1 | 6 | 1 |
| 6" compress trauma bandage | 3 | 3 | 1 | 6 | 1 |
| triangular bandage | 10 | 18 | 6 | 18 | 6 |
| safety pins | 12 | 24 | 6 | 24 | 6 |
| butterfly bandage, closure medium | 3 | 6 | 3 | 6 | 3 |
| butterfly bandage, closure large | 3 | 6 | 3 | 6 | 3 |
| scissors - acid proof - black handle | 1 | 1 | | 1 | |
| F. EYE INJURY KIT | | | | | |
| | | 2 | 1 | 2 | 1 |
| a. sterile eye pad | | | | | |
| b. eye shield | | | | | |
| c. pontecain pain reliever | | | | | |
| G. MATERNITY KIT | | | | | |
| | 1 | 1 | | 1 | |
| a. sterile drainage pad. | | | | | |
| b. sterile drapes | | | | | |
| c. mask for attendant | | | | | |
| d. clamps for clamping umbilical cord | | | | | |
| e. ball suction | | | | | |
| f. scissors | | | | | |
| g. sponges | | | | | |
| h. placenta bag | | | | | |
| i. towelette | | | | | |
| j. alcohol swabs for: | | | | | |
| - sterilisation of scissors | | | | | |
| k. aluminum foil for wrapping infant | | | | | |
| H. BURN KIT | | | | | |
| | | 1 | | 1 | |
| a. four sterile paper sheets | | | | | |
| b. two pillow cases | | | | | |
| c. petroleum gauze | | | | | |
| d. forceps | | | | | |
| e. dressings | | | | | |
| f. cleaning agent | | | | | |
| I. POISON KIT | | | | | |
| | 1 | 1 | | 1 | |
| a. poison book | | | | | |
| b. Ipecac syrup | | | | | |
| c. activated charcoal | | | | | |
| J. ISOLATION KIT | | | | | |
| | | 1 | | 1 | |
| a. gown for attendant | | | | | |
| b. mask for attendant | | | | | |
| c. gloves | | | | | |
| d. boots | | | | | |
| e. hairnet or cover | | | | | |
| K. OTHER PATIENT CARE EQUIPMENT AND SUPPLIES | | | | | |
| Emesis basin - savaday | 3 | 3 | | 6 | |
| Kidney basin - plastic | 1 | 3 | | 3 | |
| Bed pan - plastic | 1 | 1 | | 1 | |
| Urinal - male | 1 | 2 | | 2 | |
| Hot water bottle | | 1 | | 1 | |
| Denture cups | | 5 | | 5 | |
| Stethoscope | | | 1 | | 1 |
| Sphygmomanometer - Aneroid: | | | | | |
| - Hand held Adult cuff/Child's cuff | | 1 | | 1 | |
| Thermometer - disposable | 6 | 12 | | 12 | |

| EQUIPMENT KITS AND CONTENTS | Level III | Level II | Level I |
|---|------------|--------------------|--------------------|
| | In Storage | In Car Jump Kit | In Car Jump Kit |
| K. OTHER PATIENT CARE EQUIPMENT AND SUPPLIES (continued) | | | |
| Terry cloth towels | 2 | 2 | 2 |
| Burial pouch | | 1 | 1 |
| Baggies - small | | 1 | 1 |
| Baggies - large | | 1 | 1 |
| Asbestos gloves | 2 | 2 | 2 |
| First Aid Box | 1 | 1 | 1 |
| Incontinence pads | 3 | 5 | 5 |
| L. ACCESSORY EQUIPMENT AND TOOLS | | | |
| spare tire and wheel plus tire changing equipment | | 1 | 1 |
| 50-foot length of polypropylene rope (2 cm in diameter) | 1 | 2 | 2 |
| flashlights | 1 | 2 | 2 |
| fire extinguishers (CO ₂) | 1 | 2 | 2 |
| reflectors or flares | | 3 | 3 |
| adjustable wrench | 1 | 1 | 1 |
| screwdriver set | 1 | 1 | 1 |
| hacksaw | | 1 | 1 |
| pliers (vise-grip) | 1 | 1 | 1 |
| five-pound hammer | | 1 | 1 |
| heavy-duty come-along (5-ton) | | 1 | 1 |
| one shovel, pointed blade | | 1 | 1 |
| tin snips | | 1 | 1 |
| hard hat and safety goggles | | 2 | 2 |
| fire axe | | 1 | 1 |
| wrecking bar (24-inch) | | 1 | 1 |
| crowbar | | 1 | 1 |
| bolt cutter | | 1 | 1 |
| tire chains (optional) | | 2 | 2 |
| Kendricks Extrication Device | | 1 | 1 |
| booster cables (pair) | 1 | 1 | 1 |
| gas-line anti-freeze | 1 | 1 | 1 |

Some of the above items may be replaceable by a single forceable entry tool.

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APPENDIX 10
AIR NAVIGATION ORDERS

AIR NAVIGATION ORDER, SERIES II, No. 8
ORDER RESPECTING LIFE-SAVING EQUIPMENT FOR
AIRCRAFT OPERATING OVER WATER

Short Title

1. This Order may be cited as the Life-Saving Equipment Order.

Application

2. This Order applies to the operation of all Canadian aircraft.

General

3. No person shall authorize or commence a flight during which an aircraft described in an item of Column I of Schedule I may engage in the type of operation described in Column II of that item, unless that aircraft carries the equipment specified in Column III of that item.

Standards

4. (1) Every life raft required to be carried on board an aircraft pursuant to these Regulations shall meet or exceed the technical, manufacturing and performance standards of the United States Federal Aviation Administration Regulations (Technical Standards Orders C12C or c70; dated April 11, 1967).
(2) Every life jacket required to be carried on board an aircraft pursuant to these Regulations shall meet or exceed the technical, manufacturing and performance standards of the United States Federal Aviation Administration Regulations (Technical Standards Orders C13C; dated April 11, 1967).
(3) On or after May 1, 1987, in addition to the provisions of the United States Federal Aviation Administration Regulations (Technical Standards Orders C13C; dated April 11, 1967), an adult life jacket required to be carried on board an aircraft must be capable of providing a total buoyancy of not less than 15.9 kg and its gas inflation system must provide a buoyancy of not less than 14.5 kg.

Amendment No. 82
13/05/82

Stowing Equipment

5. (1) Subject to subsection 4(2), every life jacket required to be carried on board an aircraft pursuant to these Regulations shall be stowed in such a manner as to be easily accessible to the person for whose use it is intended.

(2) Where an aircraft crew includes a cabin attendant and where specified life jackets are intended for use by infants, the life jackets shall be stowed in such manner as to be easily accessible to the cabin attendant.

Informing Passengers

6. No person shall fly an aircraft en route over water where life-saving equipment is required to be carried on board an aircraft pursuant to these Regulations for the over water portion of the flight unless, prior to commencing the over water portion of the flight, all passengers are informed of the location and method of use of the life-saving equipment carried for their use.

Life Jacket Illumination

7. Effective January 1, 1984, every life jacket required to be carried on board an aircraft pursuant to these Regulations shall be equipped with a means of illumination for the purpose of facilitating the location of persons in water.

Maintaining Equipment

8. Every operator of an aircraft shall maintain all life-saving equipment required to be carried on board an aircraft in a serviceable condition in the manner recommended by the manufacturer of the life-saving equipment.

SCHEMULE I

(s. 3)

Life-Saving Equipment Requirements

| Item | Column I Aircraft | Column II Type of Operations | Column III Equipment Required on Board an Aircraft |
|------|---|---|---|
| 1. | Single-engined Aircraft | 1. (1) Operating beyond gliding distance from shore or taking off from or landing on water. (2) Operating more than 50 nautical miles from shore. | 1. (1) One life jacket for each person on board. (2) The equipment specified in Schedule II in addition to the life jacket referred to in subsection (1). |
| 2. | Multi-engined aircraft unable to maintain flight with critical engine failed | 2. (1) Operating beyond gliding distance from shore or taking off from or landing on water. (2) Operating more than 50 nautical miles from shore. | 2. (1) One life jacket for each person on board. (2) The equipment specified in Schedule II in addition to the life jacket referred to in subsection (1). |
| 3. | Multi-engined aircraft able to maintain flight with critical engine failed | 3. (1) Operating more than 50 nautical miles from shore or taking off from or landing on water. (2) Operating more than 300 nautical miles from shore. | 3. (1) One life jacket for each person on board. (2) The equipment specified in Schedule II in addition to the life jacket referred to in subsection (1). |
| 4. | Turbo jet aircraft with three or more engines used on over water flights and with two engines inoperative are capable of continuing from any point along the route to an aerodrome suitable for landing | 4. (1) Operating more than 50 nautical miles from shore or taking off from or landing on water. (2) Operating at a greater distance than can be covered in two hours at the cruising speed selected for the flight or 400 nautical miles, whichever is the lesser. | 4. (1) One life jacket for each person on board. (2) The equipment specified in Schedule III in addition to the life jacket referred to in subsection (1). |

SCHEDULE II

(s. 3)

Emergency Equipment

1. Life rafts sufficient in total rated capacity to accommodate all persons on board an aircraft, stowed in such a manner as to be easily accessible for use in the event that the aircraft makes a ditching, fitted with

- (a) water, or a means of desalting or distilling salt water, sufficient to provide at least one pint of water per person at the rated capacity of the life raft;
- (b) a water bag;
- (c) water purification tablets;
- (d) food that
 - (i) is in the form of carbohydrate,
 - (ii) has a calorific value of at least 500 calories per person at the rated capacity of the life raft,
 - (iii) is not subject to deterioration by heat or cold;
- (e) flares (at least three per raft);
- (f) hole plugs;
- (g) a bail bucket and sponge;
- (h) a signal mirror;
- (i) a whistle;
- (j) a knife;
- (k) a survival at sea manual;
- (l) waterproof flash lights (minimum two per raft);
- (m) a first aid kit containing eye ointment, burn ointment, compresses, bandages, methiolate and sea sick pills; and
- (n) a dye marker.

2. The equipment required by paragraphs 1(a) and (d) may be stored and carried in appropriate containers separate from the rafts if the containers can be readily and quickly attached to the rafts.

SCHEDULE III

(s. 3)

Emergency Equipment

1. Life rafts sufficient in total rated capacity to accommodate all persons on board an aircraft, stowed in such a manner as to be easily accessible for use in the event that the aircraft makes a ditching, fitted with

- (a) a water bag;
- (b) a water desalting kit (at least one per raft);
- (c) flares (at least three per raft);
- (d) hole plugs;
- (e) a bail bucket and sponge;
- (f) a signal mirror;
- (g) a whistle;
- (h) a knife;
- (i) a survival at sea manual;
- (j) waterproof flash lights (minimum two per raft);
- (k) a first aid kit containing eye ointment, burn ointment, compresses, bandages, methiolate and sea sick pills; and
- (l) a dye marker.

SOR/76-562
Registered on 31 August 1976

ANO V, No. 12/CRCc.-65
Page 1 of 5

AIR NAVIGATION ORDER, SERIES V, NO. 12/CRCc.-65
ORDER RESPECTING THE CARRIAGE OF EMERGENCY EQUIPMENT AND
RADIO COMMUNICATION SYSTEMS IN SPARSELY SETTLED AREAS

Short Title

1. This Order may be cited as the Sparsely Settled Areas Order.

Interpretation

2. (1) In this Order,
"sparsely settled area" means an area listed in Schedule I;
"multi-engine aircraft" means an aircraft having two or more engines that is capable of maintaining flight in the event of failure of the critical engine;
"operating base" of an aircraft means an aerodrome
- (a) that is frequently used by the aircraft,
(b) at which shelter and means of sustaining life are available, and
(c) at which there is a responsible person with whom the pilot-in-command may leave information concerning any proposed flight;

"approved" means approved by the Minister.

- (2) All other words and expressions used in this Order have the same meaning as in the Air Regulations.

General

3. Subject to sections 4 and 5, no person shall operate an aircraft on any flight wholly or partly within a sparsely settled area unless the aircraft is equipped with the emergency equipment described in Schedule II and an approved, serviceable and functioning radio capable of two-way radio communication with a ground station from any point along the route during flight.

4. Where a radio described in section 3 malfunctions or becomes inoperative during the course of a planned itinerary, the aircraft may be operated in accordance with the planned itinerary until it reaches an aerodrome where the radio may be repaired or replaced.

ANO V, No. 1/CRCC.-65
page 2 of 5

Exceptions

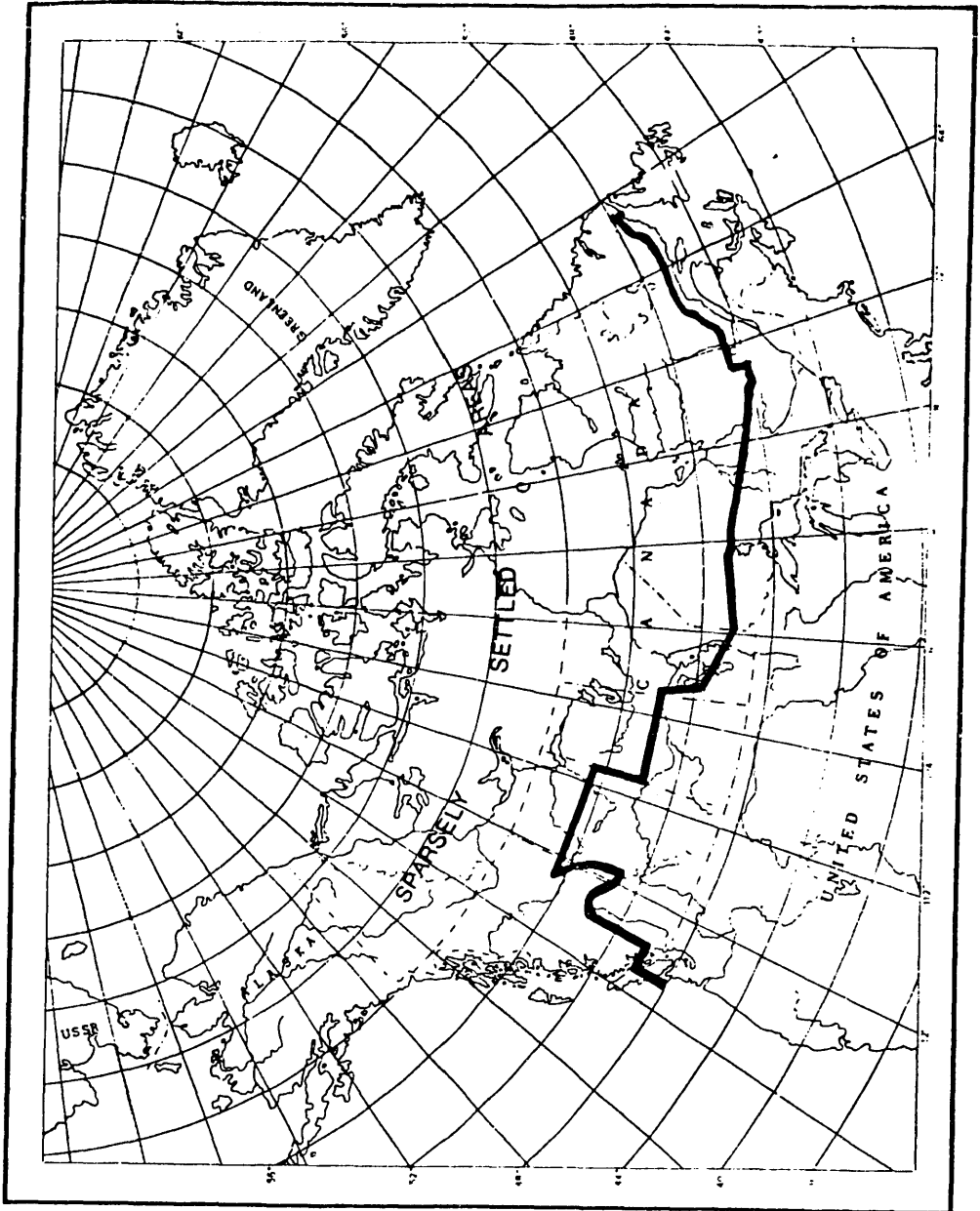
5. (1) An aircraft on a flight described in section 3 need not be equipped with the emergency equipment described in Schedule II if the aircraft is operated

- (a) within 25 nautical miles of an airport or its operating base;
- (b) by an air carrier on a commercial air service and is otherwise equipped for the operation as authorized in the air carrier's operations manual; or
- (c) in the case of a multi-engine aircraft, under IFR within controlled airspace or along designated air routes and south of 66°30' north latitude.

(2) An aircraft on a flight described in section 3 need not be equipped with the radio described in that section if the aircraft is

- (a) a private aircraft operated under VFR; or
- (b) a commercial aircraft operated under VFR within 25 nautical miles of an airport or its operating base.

Amendment No. 53
5/10/76



Amendment No. 53
5/10/76

SCHEDULE I

(s. 2)

SPARSELY SETTLED AREAS

1. The Territory of Labrador.
2. That part of Canada lying to the North of a line commencing at the point on the boundary of Quebec and Labrador 25 miles inland from the Strait of Belle Isle; THENCE, westward along a line 25 miles inland from the North shore of the St. Lawrence River as far as the 49th parallel of latitude; THENCE, westward along the 49th parallel to the 73rd meridian; THENCE, due South to the 48th parallel of latitude; THENCE, westward along a line 25 miles North of the line of the Canadian National Railway passing through La Tuque, Sénneterre, Kapuskasing, Sioux Lookout and Minaki to the 95th meridian; THENCE, in a straight line to Winnipegosis, Manitoba; THENCE, in a straight line to 54°00' North, 101°00' West; THENCE, westward along the 54th parallel to the boundary of Alberta and Saskatchewan; THENCE, due North to 56°30' North; THENCE, due West to the Alaska Highway; THENCE, along the Alaska Highway to Dawson Creek; THENCE, South along the highway to the town of Beaverlodge; THENCE, in a straight line to the Town of Jasper; THENCE, West along the Canadian National Railway passing through Yellowhead, Tete Jaune, McBride and Prince George to the 123rd meridian; THENCE, due South to the 50th parallel and THENCE, due West to the 125th meridian.
3. All that part of Canada lying West of the 125th meridian.

SCHEDULE II

(ss. 3 and 5)

EMERGENCY EQUIPMENT FOR FLIGHTS SPARSELY SETTLED AREAS

1. Food having a calorific value of a least 10,000 calories per person carried, not subject to deterioration by heat or cold and stored in a sealed waterproof container bearing a tag or label on which the operator of the aircraft or his representative has certified the amount and satisfactory condition of the food in the container following an inspection made not more than 6 months prior to the flight.
2. Cooking utensils.
3. Matches in a waterproof container.
4. A stove and a supply of fuel or a self-contained means of providing heat for cooking when operating north of the tree line.
5. A portable compass.
6. An axe of at least 2 1/2 pounds or 1 kilogram weight with a handle of not less than 28 inches or 70 centimetres in length.
7. A flexible saw blade or equivalent cutting tool.
8. Snare wire of at least 30 feet or 9 metres and instructions for its use.
9. Fishing equipment including still fishing bait and a gill net of not more than a 2 inch or 5 centimetre mesh.
10. Mosquito nets or netting and insect repellent sufficient to meet the needs of all persons carried when operating in an area where insects are likely to be hazardous.
11. Tents or engine and wing covers of suitable design, coloured or having panels coloured in international orange or other high visibility colour, sufficient to accommodate all persons carried when operating north of the tree line.
12. Winter sleeping bags sufficient in quantity to accommodate all persons carried when operating in an area where the mean daily temperature is likely to be 7°C or less.
13. Two pairs of snow shoes when operating in areas where the ground snow cover is likely to be 12 inches or 30 centimetres or more.
14. A signalling mirror.
15. At least 3 pyrotechnical distress signals.
16. A sharp jack-knife or hunting knife of good quality.
17. A suitable survival instruction manual.
18. Conspicuity panel.

Amendment No. 53
5/10/76

APPENDIX 11

STANDARDS FOR PORTABLE EQUIPMENT
AND SUPPLIES, AIR AMBULANCE SERVICES

| <u>1. CATHETER KIT - AS NEEDED</u> | <u>NUMBER</u> |
|------------------------------------|---------------|
| BAGS, PAPER | 2 |
| BAGS, PLASTIC | 2 |
| CATHETER DRAINAGE BAG WITH TUBING | 1 |
| CATHETER, FOLEY - #12 | 1 |
| CATHETER, FOLEY - #14 | 1 |
| CATHETER, FOLEY - #16 | 1 |
| GLOVES, STERILE - SINGLE USE | 2 |
| SAFETY PINS | 2 |
| SCISSORS, BANDAGE | 1 |
| TAPE, DERMICEL, 0.5" | 1 |
| DISPOSABLE PACK | |
| DRESSINGS | 6 |
| LUBRICANT | 1 TUBE |
| SAVLON, 1:100 (100 ML) | 1 |
| SYRINGE, 5 ML | 1 |

2. DIAGNOSTIC KIT - EVERY MEDIVAC

| | |
|-----------------------------------|---|
| FLASHLIGHT WITH 2 EXTRA BATTERIES | 1 |
| PEN AND PAPER PAD | 1 |
| PENLIGHT | 1 |
| SPHYGMOMANOMETER, ADULT | 1 |
| SPHYGMOMANOMETER, PAEDIATRIC | 1 |
| STETHOSCOPE | 1 |
| THERMOMETER, ORAL | 1 |
| THERMOMETER, RECTAL | 1 |
| TONGUE DEPRESSORS | 4 |

3. GENERAL DRUG KIT - EVERY MEDIVAC

| <u>GENERIC NAME</u> | <u>TRADE NAME</u> | <u>UNIT AMOUNT</u> | <u>SIZE</u> | <u>FORM</u> | <u>NUMBER</u> |
|------------------------|-------------------|--------------------|-------------|-------------|---------------|
| AMINOPHYLLINE INJ | | 500 mg | 2 ml | ampule | 2 |
| AMPICILLIN INJ | | 1000 mg | | dry vial | 2 |
| ATROPINE SULFATE | | 0.5 mg | 1 ml | syringe | 2 |
| CALCIUM CHLORIDE, INJ | | 1 g | 10 ml | syringe | 2 |
| CALCIUM GLUCONATE | | 10% | 10 ml | vial | 2 |
| DEXAMETHAZONE | decadron | 4 mg | 1 ml | 5 ml vial | 2 |
| DEXTROSE | | 25 g | 50 ml | syringe | 2 |
| DEXTROSE IN N SALINE | | 5% | 500 ml | bag | 1 |
| DEXTROSE IN WATER | | 5% | 500 ml | bag | 1 |
| DIAZEPAM | valium | 5 mg | 2 ml | syringe | 2 |
| DIAZOXIDE | hyperstat | 300 mg | 20 ml | ampule | 1 |
| DIMENHYDRINATE | gravol | 50 mg | 1 ml | ampule | 2 |
| DIPHENHYDRAMINE HCl | benadryl | 50 mg | 1 ml | syringe | 2 |
| DIPHENYLHYDANTOIN | dilantin | 50 mg | 2 ml | ampule | 2 |
| DRESSINGS, STERILE 2X2 | | | | | 10 |
| EPINEPHRINE | adrenaline | 0.001% | 1 ml | syringe | 4 |
| EPINEPHRINE | adrenaline | 0.0001% | 10 ml | IC syr. | 1 |
| FILE | | | | | 2 |
| FUROSEMIDE | lasix | 10 mg | 1 ml | ampule | 2 |
| HYDROCORTISONE | solu-cortef | 1000 mg | | vial | 1 |
| ISOPROTERENOL HCl | isuprel | 0.0002 % | 1 ml | ampule | 2 |

3. GENERAL DRUG KIT - EVERY MEDIVAC (continued)

| <u>GENERIC NAME</u> | <u>TRADE NAME</u> | <u>UNIT AMOUNT</u> | <u>SIZE</u> | <u>FORM</u> | <u>NUMBER</u> |
|------------------------|-------------------|--------------------|-------------|-------------|---------------|
| LIDOCAINE HCl | xylocaine | 2% | 5 ml | syringe | 1 |
| LIDOCAINE HCl | xylocaine | 2% | 10 ml | syringe | 2 |
| MANNITOL | | | 500 ml | bag | 1 |
| MEDICATION LABELS | | | | | |
| NALOXONE HCl | narcan | 0.4 mg | 1 ml | ampule | 10 |
| NEEDLES, #18 | | | | | 2 |
| NEEDLES, #20 | | | | | 3 |
| NEEDLES, #21 | | | | | 3 |
| NEEDLES, #23 | | | | | 3 |
| NEEDLES, #25 | | | | | 3 |
| NITROGLYCERINE | | 0.3 mg | | sl tab | 12 |
| PENICILLIN G | | | | vial | 1 |
| PHENOBARBITAL | luminal | 120 mg | 1 ml | ampule | 2 |
| SALBUTAMOL | ventolin | | | nebulizer | 2 |
| SODIUM BICARBONATE INJ | | 3.75 g | 50 ml | syringe | 2 |
| SODIUM CHLORIDE | | 0.9% | 20 ml | | 2 |
| SYRINGES, 3 ML | | | | | 2 |
| SYRINGES, 5 ML | | | | | 2 |
| SYRINGES, 10 ML | | | | | 2 |
| TAPE, DERMICEL - 0.5" | | | | | 1 |
| TETRACAINE | pontocaine | 0.5% | 15 ml | dropper | 1 |
| WATER FOR INJECTION | | | 10 ml | | 2 |
| WIPES, ALCOHOL | | | | | 10 |

4. OBSTETRIC DRUG KIT - AS NEEDED

| | | | | | |
|------------------------|------------|---------|-------|-------------|---|
| ATROPINE SULFATE | | 0.5 mg | 1 ml | syringe | 2 |
| CALCIUM GLUCONATE | | 10% | 10 ml | vial | 2 |
| DEXTROSE | | 25 g | 50 ml | syringe | 2 |
| DIMENHYDRINATE | gravol | 50 mg | 1 ml | ampule | 2 |
| DRESSINGS, STERILE 2X2 | | | | | 4 |
| ERYTHROMYCIN UNG | | | | sd tube | 2 |
| ISOXSUPRINE HCl | vasodilan | 5 mg | 1 ml | 8 ml ampule | 2 |
| LIDOCAINE HCl | xylocaine | 2% | 50 ml | vial | 2 |
| MAGNESIUM SULFATE | | 10% | 50 ml | | 2 |
| NALOXONE HCl | narcan | 0.4 mg | 1 ml | ampule | 2 |
| NALOXONE NEONATAL | narcan | 0.02 mg | 1 ml | | 2 |
| NEEDLES, #16 | | | | | 2 |
| NEEDLES, #18 | | | | | 2 |
| NEEDLES, #20 | | | | | 2 |
| NEEDLES, #21 | | | | | 2 |
| NEEDLES, #23 | | | | | 2 |
| NEEDLES, #25 | | | | | 2 |
| OXYTOCIN | syntocinon | 10 I.U. | 1 ml | ampule | 2 |
| SODIUM CHLORIDE | | 0.9% | 20 ml | | 2 |
| SYRINGES, 3ML | | | | | 2 |
| SYRINGES, 5ML | | | | | 2 |
| SYRINGES, 10ML | | | | | 2 |
| SYRINGES, 50ML | | | | | 1 |
| TAPE, DERMICEL - 0.5" | | | | | 1 |
| VITAMIN K1 | konakin | 2 mg | 1 ml | 0.5 ml amp. | 4 |
| WIPES, ALCOHOL | | | | | 6 |

5. PEDIATRIC DRUG KIT - AS NEEDED

| <u>GENERIC NAME</u> | <u>TRADE NAME</u> | <u>UNIT AMOUNT</u> | <u>SIZE</u> | <u>FORM</u> | <u>NUMBER</u> |
|------------------------|-------------------|--------------------|-------------|-------------|---------------|
| ACETAMINOPHEN | tempora | | | drops | 1 |
| AMPICILLIN INJ | | 500 g | | dry vial | 1 |
| CALCIUM GLUCONATE | | 10% | 10 ml | vial | 2 |
| CHLORAMPHENICOL | | | | | 2 |
| DIAZEPAM | valium | 5 mg | 2 ml | syringe | 2 |
| DIPHENHYDRAMINE HCl | benadryl | 10 mg | 1 ml | 10 ml vial | 1 |
| DRESSINGS, STERILE 2X2 | | | | | 4 |
| EPINEPHRINE | adrenaline | 0.001% | 1 ml | syringe | 4 |
| NALOXONE NEONATAL | narcan | 0.02 mg | 1 ml | | 2 |
| NALOXONE NEONATAL | narcan | 0.4 mg | 1 ml | | 2 |
| NEEDLES, #18 | | | | | 2 |
| NEEDLES, #20 | | | | | 2 |
| NEEDLES, #21 | | | | | 2 |
| NEEDLES, #23 | | | | | 2 |
| NEEDLES, #25 | | | | | 2 |
| SODIUM BICARBONATE INJ | | 3.75 g | 50 ml | syringe | 2 |
| SODIUM CHLORIDE | | 0.9% | 20 ml | | 2 |
| SODIUM CHLORIDE | | 0.9% | 20 ml | ampule | 1 |
| SYRINGES, 1 ML | | | | | 2 |
| SYRINGES, 3 ML | | | | | 2 |
| SYRINGES, 5 ML | | | | | 2 |
| TAPE, DERMICEL - 0.5" | | | | | 1 |
| WATER FOR INJECTION | | | | | 1 |
| WIPES, ALCOHOL | | | | | 4 |

6. HYGIENE KIT - EVERY MEDIVAC

| | | | | | |
|---------------------|--|--|--|--|--------|
| BAGS, PAPER | | | | | 2 |
| BAGS, PLASTIC | | | | | 2 |
| BEDPAN | | | | | 1 |
| KIDNEY BASIN | | | | | 1 |
| TISSUES | | | | | 1 |
| TISSUES, TOILET | | | | | 1 |
| URINAL | | | | | 1 |
| WIPES, DISPOSAL WET | | | | | 1 |
| SAFETY PINS | | | | | 4 |
| STRING | | | | | 1 roll |

7. ADULT INTUBATION KIT - AS NEEDED

| | | | | | |
|--|--|--|--|--|---|
| AIRWAYS, - 0, 1, 2, 3 | | | | | 4 |
| AMBUBAG MASK AND TUBING | | | | | 1 |
| CATHETERS, SUCTION | | | | | 2 |
| DRESSINGS - 4X4 | | | | | 6 |
| ENDOTRACHEAL TUBES - #5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5 | | | | | 8 |
| FORCEPS, MAGILL ENDOTRACHEAL | | | | | 1 |
| LARYNGOSCOPE WITH BLADES - SMALL, MEDIUM, LARGE | | | | | 3 |
| SPATULA, PADDED | | | | | 1 |
| SYRINGE, 5 ML | | | | | 1 |
| TAPE ADHESIVE - 0.5" | | | | | 1 |
| TISSUES | | | | | 1 |
| TONGUE DEPRESSORS | | | | | 4 |

8. PEDIATRIC INTUBATION KIT - AS NEEDED

| | <u>UNIT</u> | <u>AMOUNT</u> | <u>SIZE</u> | <u>NUMBER</u> |
|---|-------------|---------------|-------------|---------------|
| AIRWAYS - 0,00,000 | | | | 3 |
| AMBUBAG MASKS - 0,1,2 | | | | 3 |
| AMBUBAG, WITH CONNECTOR AND TUBING | | | | 1 |
| BAGS, PAPER | | | | 2 |
| ENDOTRACHEAL TUBES - #2.5,3,3.5,4,4.5,5.,5.5 | | | | 7 |
| FORCEPS, MAGILL ENDOTRACHEAL | | | | 1 |
| LARYNGOSCOPE | | | | 1 |
| LARYNGOSCOPE BLADES - CURVED #1, STRAIGHT #0. ST.SHORT #0 | | | | 3 |
| LARYNGOSCOPE INTRODUCER | | | | 1 |
| SYRINGE, 5 ML | | | | 1 |
| TISSUES | | | | 1 |

9. ADULT INTRAVENOUS KIT - AS NEEDED

| | | | | |
|-------------------------------|------|--|-------|---|
| ADMINISTRATION SETS, BLOOD | | | | 2 |
| ADMINISTRATION SETS, MINIDRIP | | | | 2 |
| ADMINISTRATION SETS, SOLUTION | | | | 2 |
| ADMINISTRATION SETS, YS | | | | 2 |
| ARMBOARD, ADULT | | | | 1 |
| BAGS, PAPER | | | | 2 |
| FLOOD PUMP | | | | 2 |
| BURETROL | | | | 2 |
| DRESSINGS, STERILE - 2X2 | | | | 6 |
| NEEDLES, #16 | | | | 2 |
| NEEDLES, #18 | | | | 2 |
| NEEDLES, #20 | | | | 2 |
| NEEDLES, #21 | | | | 2 |
| NEEDLES, #23 | | | | 2 |
| SODIUM CHLORIDE | 0.9% | | 20 ml | 2 |
| SYRINGES, 3ML | | | | 2 |
| SYRINGES, 5ML | | | | 2 |
| SYRINGES, 10 ML | | | | 2 |
| TAPE, DERMICEL - 0.5" | | | | 1 |
| TOURNIQUET | | | | 1 |
| WATER, BACTERIOSTATIC | | | | 1 |
| WIPES, ALCOHOL | | | | 1 |

10. PEDIATRIC INTRAVENOUS KIT - AS NEEDED

| | | | | |
|-------------------------------|--|--|--|---|
| ADMINISTRATION SETS, BLOOD | | | | 2 |
| ADMINISTRATION SETS, MINIDRIP | | | | 2 |
| ADMINISTRATION SETS, SOLUTION | | | | 2 |
| ADMINISTRATION SETS, YS | | | | 2 |
| ARMBOARD, COVERED PEDIATRIC | | | | 1 |
| BAGS, PAPER | | | | 2 |
| BLOOD PUMP | | | | 2 |
| BURETROL | | | | 2 |
| DRESSINGS, STERILE - 2X2 | | | | 6 |
| NEEDLES, #18 | | | | 2 |
| NEEDLES, #20 | | | | 2 |
| NEEDLES, #21 | | | | 2 |
| NEEDLES, #23 | | | | 2 |
| NEEDLES, #25 | | | | 2 |
| NEEDLES, #27 | | | | 2 |

10. PEDIATRIC INTRAVENOUS KIT - AS NEEDED (continued)

| <u>GENERIC NAME</u> | <u>TRADE NAME</u> | <u>UNIT AMOUNT</u> | <u>SIZE</u> | <u>FORM</u> | <u>NUMBER</u> |
|-----------------------|-------------------|--------------------|-------------|-------------|---------------|
| SODIUM CHLORIDE | | 0.9% | 20 ml | | 1 |
| SYRINGES, 1ML | | | | | 2 |
| SYRINGES, 3ML | | | | | 2 |
| SYRINGES, 5ML | | | | | 2 |
| TAPE, DERMICEL - 0.5" | | | | | 1 |
| TOURNIQUET | | | | | 1 |
| WATER, BACTERIOSTATIC | | | | | 1 |
| WIPES, ALCOHOL | | | | | 4 |

11. MISCELLANEOUS PEDIATRIC KIT - AS NEEDED

| | | | | | |
|----------------------------------|--|--|--|--|---|
| BAGS, PAPER | | | | | 2 |
| BAGS, PLASTIC | | | | | 2 |
| DIAPERS | | | | | 4 |
| OXYGEN ADAPTER AND WASHERS | | | | | 1 |
| OXYGEN MASK, PAEDIATRIC (HUDSON) | | | | | 1 |
| SCISSORS, BANDAGE | | | | | 1 |
| THERMAL BUNTING | | | | | 1 |
| TUBE, FEEDING | | | | | 1 |
| URINE BAG | | | | | 1 |
| WIPES, ALCOHOL | | | | | 4 |

12. NARCOTIC KIT - EVERY MEDIVAC

| | | | | | |
|------------------|----------|--------|------|---------|---|
| ALPHAPRODINE HCl | nisentil | 50 mg | 1 ml | ampule | 4 |
| MORPHINE SULFATE | | 15 mg | 1 ml | syringe | 4 |
| PETHIDINE | | 100 mg | 1 ml | ampule | 6 |

13. NASOGASTRIC KIT - AS NEEDED

| | | | | | |
|--------------------------|--|--|--|--|---|
| DRAINAGE BAG WITH TUBING | | | | | 1 |
| KIDNEY BASIN | | | | | 1 |
| LUBRICANT | | | | | 1 |
| SAFETY PINS | | | | | 1 |
| SUMP, SALEM - #14,16,18 | | | | | 1 |
| SYRINGE, 50 ML | | | | | 1 |
| TAPE, ADHESIVE - 0.5" | | | | | 1 |
| TAPE, DERMICEL | | | | | 1 |
| TISSUES | | | | | 1 |

14. OBSTETRIC KIT - AS NEEDED

| | | | | | |
|--------------------------------|--|--|--|--|---|
| BABY BLANKET | | | | | 1 |
| BABY GOWN | | | | | 1 |
| BAGS, PAPER | | | | | 1 |
| BAGS, PLASTIC | | | | | 1 |
| CATHETER PACK | | | | | 1 |
| CLAMPS, KELLY | | | | | 1 |
| DIAPERS | | | | | 1 |
| FETAL STETHOSCOPE | | | | | 1 |
| FORCEPS, TISSUE | | | | | 1 |
| GLOVES, STERILE - #5.5,7,7.5,8 | | | | | 4 |

14. OBSTETRIC KIT - AS NEEDED continued

| | <u>NUMBER</u> |
|------------------------------|---------------|
| GLOVES, STERILE - SINGLE USE | 4 |
| MUCOUS TRAP | 2 |
| NEEDLE DRIVER | 1 |
| OBSTETRIC PACK | 1 |
| PADS, SANITARY | 6 |
| SAVLON, 1:100 | 1 |
| SCISSORS, EPISIOTOMY | 1 |
| SCISSORS, SUTURE | 1 |
| SHEET, FLANNELETTE | 1 |
| SUTURES, 3-0 PLAIN | 1 |
| SUTURES, 4-0 CHROMIC | 1 |
| THERMAL BUNTING | 1 |
| TUBES, RED TOP | 4 |

15. FLUIDS KIT - EVERY MEDIVAC

| | <u>CONCENTRATION</u> | <u>AMOUNT</u> | <u>NUMBER</u> |
|----------------------|----------------------|---------------|---------------|
| DEXTROSE IN N SALINE | 5 % | 1000ml bag | 1 |
| DEXTROSE IN N SALINE | 5 % | 500ml bag | 1 |
| DEXTROSE IN WATER | 5 % | 500ml bag | 1 |
| DEXTROSE IN WATER | 5 % | 1000ml bag | 1 |
| LACTATED RINGER'S | | 500ml bag | 1 |
| LACTATED RINGER'S | | 1000ml bag | 1 |
| SODIUM CHLORIDE | 0.9 % | 250ml bag | 1 |
| SODIUM CHLORIDE | 0.9 % | 500ml bag | 1 |

16. SUTURE KIT - AS NEEDED

| | |
|--|----|
| BAGS, PAPER | 2 |
| DRESSINGS, ADHESIVE - SMALL, MEDIUM, LARGE | 12 |
| DRESSINGS, STERILE - 2X2 | 6 |
| DRESSINGS, STERILE - 4X4 | 6 |
| FORCEPS, MOSQUITO | 1 |
| FORCEPS, TISSUE | 1 |
| GLOVES, STERILE - #6.5,8 | 2 |
| NEEDLE DRIVER | 1 |
| SCALPEL, #10 BLADE | 1 |
| SCISSORS, MAYO | 1 |
| SUTURES, 3-0 PLAIN | 1 |
| SUTURES, 4-0 SILK | 1 |
| TAPE, ADHESIVE - 0.5" | 1 |
| TAPE, DERMICEL - 0.5" | 1 |

17. TRAUMA KIT - AS NEEDED

| | |
|----------------------|----|
| BANDAGE, KLING - 2" | 3 |
| BANDAGE, KLING - 3" | 2 |
| BANDAGE, TRIANGULAR | 2 |
| BANDAGES, GAUZE - 2" | 3 |
| BANDAGES, GAUZE - 3" | 3 |
| CERVICAL COLLARS | 1 |
| DRESSING, SHELL - 6" | 4 |
| DRESSINGS - 2X2 | 12 |

17. TRAUMA KIT - AS NEEDED continued

| | <u>NUMBER</u> |
|--------------------------|---------------|
| DRESSINGS - 4X4 | 12 |
| DRESSINGS, STERILE - 2X2 | 6 |
| DRESSINGS, STERILE - 4X4 | 6 |
| HAEMOSTATS, CURVED | 2 |
| NASAL PACK | 1 |
| RAZOR | 1 |
| SCISSORS, BANDAGE | 1 |
| SPLINTS | 2 |
| TAPE, ADHESIVE - 0.5" | 2 |
| TAPE, ADHESIVE - 1" | 2 |
| TAPE, WATERPROOF - 1" | 1 |

18. ADDITIONAL MEDIVAC EQUIPMENT

| | <u>EVERY MEDIVAC</u> | <u>AS NEEDED</u> | <u>NUMBER</u> |
|---|----------------------|------------------|---------------|
| BATTERY PACK, INCUBATOR | | X | 1 |
| BEDPAN | X | | 1 |
| ELECTRICAL CORDS - aircraft specific | X | | prn |
| GAUGE, OXYGEN | X | | 1 |
| INCUBATOR | | X | 1 |
| KIDNEY BASINS | X | | 2 |
| OXYGEN CYLINDERS | X | | 2 |
| SCISSORS, BANDAGE | X | | 1 |
| SLEEPING BAGS, FIVE STAR - for each patient | X | | 1 |
| SPINAL BOARD | | X | 2 |
| SPLINTS, DISPOSABLE | | X | 2 |
| STRETCHER, OF CHOICE | X | | 1 |
| SUCTION, ALTERNATE | X | | 1 |
| SUCTION, ELECTRIC AND/OR BATTERY | X | | 1 |
| TAPE, ADHESIVE - 0.5", 1" | X | | 1 |

APPENDIX 12

COST OF RECOMMENDATIONS

COST OF RECOMMENDATIONS

I. Scheme 1

Under Scheme 1, the staffing of the ambulance service in Yellowknife would include six full-time attendants. In each of the other seven Level I communities, the staffing would include one full-time attendant and a corps of volunteers.

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|---|--------------------|------------------|------------------|------------------|------------------|
| | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 1,323,800 | 1,554,200 | 1,784,600 | 2,068,600 | 2,352,600 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 2,193,300 | 2,383,370 | 2,618,750 | 2,838,380 | 3,083,000 |

I. Scheme 1 (continued)

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|---|--------------------|------------------|------------------|------------------|------------------|
| | <u>1992/93</u> | <u>1993/94</u> | <u>1994/95</u> | <u>1995/96</u> | <u>1996/97</u> |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 13,000 | 58,000 | 58,000 | 58,000 | 13,000 |
| Level II | 16,500 | 16,500 | 16,500 | 16,500 | 16,500 |
| Level III | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |
| Total | 45,500 | 90,500 | 90,500 | 90,500 | 45,500 |
| Storage Facilities | | | | | |
| Level II | - | - | - | - | - |
| Training Programs | | | | | |
| Computer Equipment | | | | | |
| TOTAL | 45,500 | 90,500 | 90,500 | 90,500 | 45,500 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | | | | | |
| Level II | | | | | |
| Level III | | | | | |
| TOTAL | 2,352,600 | 2,352,600 | 2,352,600 | 2,352,600 | 2,352,600 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 85,000 | | | | |
| Course materials and Tuition | 9,680 | | | | |
| Travel | 17,000 | | | | |
| Other | 16,500 | | | | |
| TOTAL | 128,180 | 128,180 | 128,180 | 128,180 | 128,180 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | - | - | - | - | - |
| TOTAL | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION (G.N.W.T.)</u> | | | | | |
| | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 2,705,080 | 2,750,080 | 2,750,080 | 2,750,080 | 2,705,080 |

II. Scheme 2

Under Scheme 2, the staffing of ambulance services in all eight Level I communities would include six full-time attendants.

| COST ITEMS | FISCAL YEAR | | | | |
|---|------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| CAPITAL | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| OPERATING COSTS | | | | | |
| Level I | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 2,576,000 | 2,806,400 | 3,036,800 | 3,320,800 | 3,604,800 |
| TRAINING COSTS | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and | | | | | |
| Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| EMERGENCY RESPONSE TEAMS | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| CENTRAL ADMINISTRATION (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 3,445,500 | 3,635,570 | 3,870,950 | 4,090,580 | 4,335,200 |

II. Scheme 2 (continued)

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|--|--------------------|------------------|------------------|------------------|------------------|
| | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 13,000 | 58,000 | 58,000 | 58,000 | 13,000 |
| Level II | 16,500 | 16,500 | 16,500 | 16,500 | 16,500 |
| Level III | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |
| Total | 45,500 | 90,500 | 90,500 | 90,500 | 45,500 |
| Storage Facilities | | | | | |
| Level II | - | - | - | - | - |
| Training Programs | | | | | |
| Computer Equipment | - | - | - | - | - |
| TOTAL | 45,500 | 90,500 | 90,500 | 90,500 | 45,500 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | | | | | |
| Level II | | | | | |
| Level III | | | | | |
| TOTAL | 3,604,800 | 3,604,800 | 3,604,800 | 3,604,800 | 3,604,800 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 85,000 | | | | |
| Course materials and Tuition | 9,680 | | | | |
| Travel | 17,000 | | | | |
| Other | 16,500 | | | | |
| TOTAL | 128,180 | 128,800 | 128,800 | 128,800 | 128,800 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 3,957,280 | 4,002,900 | 4,002,900 | 4,002,900 | 3,957,280 |

CAPITAL COSTS

Notes

1. All figures are 1985 dollars.
2. Equipment is treated separately from vehicles.
ie. the cost of a new vehicle is the vehicle only - equipment is not included. Equipment is simply transferred from an old vehicle to a new one.
3. The cost of upgrading a partially equipped vehicle to fully-equipped status, Level I, is assumed to be \$5,000.
4. The cost of equipment for a new Level I ambulance is assumed to be \$10,000; for Level II \$5,000, Level III \$3,500.
5. In Level I, all operators are allotted \$1,000 per year for equipment, after equipment has been brought up to standard.
6. In Level II, all operators are allotted \$750 per year for equipment, after equipment has been brought up to standard.
7. In Level III, all operators are allotted \$500 per year for equipment, after equipment has been brought up to standard.
8. Ambulance vehicles (both Levels I and II) are assumed to have a useful life of ten (10) years.
9. The cost of a new ambulance (Level I) is assumed to be \$45,000 (\$3,000 more in Frobisher Bay for extra shipping costs). In Level II the cost of a new vehicle is assumed to be \$25,000 (average, including shipping costs).

CAPITAL COSTS

| ITEM | FISCAL YEAR | | | | |
|--------------------------|----------------|----------------|----------------|----------------|----------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| <u>Vehicles</u> | | | | | |
| Level I | 135,000 | 135,000 | 135,000 | 48,000 | - |
| Level II | 100,000 | 100,000 | 100,000 | 125,000 | 125,000 |
| TOTAL | 235,000 | 235,000 | 235,000 | 173,000 | 125,000 |
| <u>Equipment</u> | | | | | |
| Level I | 41,000 | 22,000 | 13,000 | 13,000 | 13,000 |
| Level II | 20,000 | 23,000 | 26,000 | 34,000 | 37,750 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,000 |
| TOTAL | 82,000 | 69,000 | 66,000 | 80,500 | 87,750 |
| <u>Vehicle Storage</u> | | | | | |
| <u>Facilities</u> | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| <u>Training Programs</u> | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTALS | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |

| ITEM | FISCAL YEAR | | | | |
|--------------------------|---------------|---------------|---------------|---------------|---------------|
| | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 |
| <u>Vehicles</u> | | | | | |
| Level I | - | 45,000 | 45,000 | 45,000 | - |
| Level II | - | - | - | - | - |
| TOTAL | - | 45,000 | 45,000 | 45,000 | - |
| <u>Equipment</u> | | | | | |
| Level I | 13,000 | 13,000 | 13,000 | 13,000 | 13,000 |
| Level II | 16,500 | 16,500 | 16,500 | 16,500 | 16,500 |
| Level III | 16,000 | 16,000 | 16,000 | 16,000 | 16,000 |
| TOTAL | 45,500 | 45,500 | 45,500 | 45,500 | 45,500 |
| <u>Vehicle Storage</u> | | | | | |
| <u>Facilities</u> | | | | | |
| Level II | - | - | - | - | - |
| <u>Training Programs</u> | | | | | |
| Computer Equipment | - | - | - | - | - |
| TOTALS | 45,500 | 90,500 | 90,500 | 90,500 | 45,500 |

AMBULANCE VEHICLES

LEVEL I

| Community | Current Vehicles | | Replacement Year and Cost | | | | | | | | |
|---------------|------------------|-------|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Year | Model | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 |
| Frobisher Bay | 1979 | | | | | 48,000 | | | | | |
| Fort Smith | 1974 | | | | 45,000 | | | | | | |
| | 1986 | | 45,000 | | | | | | | | |
| Fort Simpson | 1975 | | | | 45,000 | | | | | | |
| Hay River | 1966 | | 45,000 | | | | | | | | |
| | 1973 | | | 45,000 | | | | | | | |
| Pine Point | 1977 | | | | 45,000 | | | | | | |
| | 1987 | | | 45,000 | | | | | | | |
| Edzo | 1984 | | | | | | | | 45,000 | | |
| Yellowknife | 1973 | | | 45,000 | | | | | | | |
| | 1984 | | | | | | | | | | 45,000 |
| Inuvik | 1973 | | 45,000 | | | | | | | | |
| | 1982 | | | | | | | 45,000 | | | |
| TOTALS | | | 135,000 | 135,000 | 135,000 | 48,000 | | | 45,000 | 45,000 | 45,000 |

AMBULANCE EQUIPMENT

LEVEL 1

| Community | Vehicles | Current Equipment Standards | Year for Upgrading, and Cost | | |
|---------------|----------|-----------------------------------|------------------------------|---------|------------------------------|
| | | | 1987/88 | 1988/89 | 1989/90 and Continuing |
| Frobisher Bay | 1979 | full | 1,000 | 1,000 | 1,000 |
| Fort Smith | 1974 | partial | 5,000 | 1,000 | |
| | 1986 | full | 10,000 | 1,000 | |
| Fort Simpson | 1975 | partial | 5,000 | 1,000 | |
| Hay River | 1966 | partial | 5,000 | 1,000 | |
| | 1973 | partial | 5,000 | 1,000 | |
| Pine Point | 1977 | partial | 5,000 | 1,000 | |
| | 1987 | full | - | 10,000 | |
| Edzo | 1984 | full | 1,000 | 1,000 | |
| Yellowknife | 1973 | full | 1,000 | 1,000 | |
| | 1984 | full | 1,000 | 1,000 | |
| Inuvik | 1973 | full | 1,000 | 1,000 | |
| | 1982 | full | 1,000 | 1,000 | |
| TOTALS | | | 41,000 | 22,000 | 13,000 |

AMBULANCE VEHICLES AND EQUIPMENT

LEVEL II

22 communities in Level II, one vehicle per community.
Five-year period for phasing in.

First Year - 1987/88

Projected life-time per vehicle - 10 years.

Price per vehicle: \$25,000 (1985 dollars,
based on cost of Chevrolet Suburban, 4 W.D.).

Cost of equipment per vehicle: \$5,000.

After equipment in place: \$750 per community per year.

| | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> | <u>1992/93 and Continuing</u> |
|--------------------|----------------|----------------|----------------|----------------|----------------|-----------------------------------|
| No. of Communities | 4 | 4 | 4 | 5 | 5 | 22 |
| Vehicles | 100,000 | 100,000 | 100,000 | 125,000 | 125,000 | - |
| Equipment | 20,000 | 20,000 | 20,000 | 25,000 | 25,000 | - |
| Equipment Replace | - | 3,000 | 6,000 | 9,000 | 12,750 | 16,500 |
| TOTALS | 120,000 | 123,000 | 126,000 | 159,000 | 162,750 | 16,500 |

AMBULANCE EQUIPMENT

LEVEL III

31 communities
Phase-in period: 5 years
Cost per community: \$3,500
After equipment in place: \$500 per year per community.

| | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> | <u>1992/93 and Continuing</u> |
|--------------------------|----------------|----------------|----------------|----------------|----------------|-----------------------------------|
| No. of Communities | 6 | 6 | 6 | 7 | 7 | 32 |
| Cost of new equipment | 21,000 | 21,000 | 21,000 | 24,500 | 24,500 | - |
| Equipment Replacement | - | 3,000 | 6,000 | 9,000 | 12,500 | 16,000 |
| TOTALS | 21,000 | 24,000 | 27,000 | 33,500 | 37,000 | 16,000 |

CAPITAL COSTS

Storage Facilities for Vehicles and Equipment

- Level I - Existing facilities.
- Level II - Development of facilities required.
Rental of existing space may be possible in some communities.
- Level III - Existing Facilities.

Level II. Vehicle Storage Facilities

For those communities where there is space to be leased, there will be no capital costs. In communities where no such space is available, facilities will have to be constructed, probably at a considerable cost.

- Assumptions:
1. 10 communities where facilities will have to be constructed.
 2. Cost per facility: \$70,000.
 3. Phase-in period: 5 years (2 per year).

| <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> |
|----------------|----------------|----------------|----------------|----------------|
| 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |

OPERATING COSTS: AMBULANCE SERVICES

I. Scheme 1

Under Scheme 1, Budget (\$114,200) would apply to the ambulance services in Rae Edzo, Fort Simpson, Fort Smith, Frobisher Bay, Hay River, Inuvik and Pine Point. Budget 2 (\$293,200) would apply to Yellowknife.

| LEVEL | FISCAL YEAR | | | | 1991/92 and Continuing |
|------------------------------------|------------------|------------------|------------------|------------------|------------------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | |
| I. Number of Communities Cost | 8 1,093,400 | 8 1,093,400 | 8 1,093,400 | 8 1,093,400 | 8 1,093,400 |
| II. Number of Communities Cost | 4 182,400 | 8 364,800 | 12 547,200 | 17 775,200 | 22 1,003,200 |
| III. Number of Communities Cost | 6 48,000 | 12 96,000 | 18 144,000 | 24 200,000 | 31 256,000 |
| TOTAL | 1,323,000 | 1,553,400 | 1,783,800 | 2,067,800 | 2,351,800 |

II. Scheme 2

Under Scheme 2, Budget 2 (\$293,200) would apply to all eight Level I communities.

| LEVEL | FISCAL YEAR | | | | 1991/92 and Continuing |
|------------------------------------|------------------|------------------|------------------|------------------|------------------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | |
| I. Number of Communities Cost | 8 2,345,600 | 8 2,345,600 | 8 2,345,600 | 8 2,345,600 | 8 2,345,600 |
| II. Number of Communities Cost | 4 182,400 | 8 364,800 | 12 547,200 | 17 775,200 | 22 1,003,200 |
| III. Number of Communities Cost | 6 48,000 | 12 96,000 | 18 144,000 | 25 200,000 | 32 256,000 |
| TOTAL | 2,576,000 | 2,806,400 | 3,036,800 | 3,320,800 | 3,604,800 |

Level I - Operating and Maintenance Budget

Budget 1

Under Budget 1, the staffing for Level I ambulance services, except Yellowknife, would consist of one staff member with EMT-A certification, and a corps of volunteers. Staffing costs aside, all other costs would be the same as those in Budget 2 (following page).

| <u>Personnel</u> | \$ |
|---|--------|
| 1 EMT-A | 36,800 |
| .5 Clerical | 12,600 |
| Volunteers (honoraria) | 20,000 |
| Benefits (15 percent of wages and salaries) | 7,400 |

Vehicles

| | |
|--|--------|
| Maintenance, Repair, Fuel (\$6,400 per vehicle) | 12,800 |
| Storage (rental of space) (\$315 per vehicle per month) | 7,700 |
| Insurance (\$630 per vehicle) | 1,300 |

Ambulance Supplies 5,300

Administration (10% of other costs) 10,400

TOTAL 114,300

Level I - Operating and Maintenance Budget

Budget 2

| | \$ |
|--|---------------|
| <u>Personnel</u> | |
| 1 EMT-A | 36,800 |
| 5 Advanced First Aid/CPR @ \$31,500 | 157,500 |
| .5 Clerical | 12,600 |
| Volunteers | 10,000 |
| <u>Benefits (15% of wages and salaries)</u> | 32,500 |
| <u>Vehicles</u> | |
| Maintenance, Repair, Fuel (\$6,400 per vehicle) | 12,800 |
| Storage (rental of space) (\$320 per vehicle per month) | 7,700 |
| Insurance (\$650 per vehicle) | 1,300 |
| <u>Ambulance Supplies</u> | 5,300 |
| <u>Administration (10% of other costs)</u> | <u>26,700</u> |
| TOTAL | \$293,200 |

Level II - Operating and Maintenance Budget

| | |
|---------------------------|--------------|
| <u>Staffing</u> | \$ |
| 1 Coordinator | 22,000 |
| Volunteers | 5,000 |
| Benefits | 3,300 |
| | |
| <u>Vehicles</u> | |
| Maintenance, repair, fuel | 4,200 |
| Storage | 3,800 |
| Insurance | 1,100 |
| | |
| <u>Ambulance Supplies</u> | 2,100 |
| | |
| <u>Administration</u> | <u>4,200</u> |
| | \$45,600 |

Level III

| | |
|--------------|---------|
| Annual Grant | \$8,000 |
|--------------|---------|

TABLE 1. TRAINING COSTS - SUMMARY

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | | <u>1992/93 and Continuing</u> |
|---|--------------------|----------------|----------------|----------------|----------------|---------------------------------------|
| | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91</u> | <u>1991/92</u> | |
| <u>PERSONNEL</u> | | | | | | |
| Coordinator | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 |
| First Aid Training staff (2) | 80,000 | 80,000 | 80,000 | 80,000 | 80,000 | 40,000 |
| <u>COURSE MATERIALS AND TUITION</u> | | | | | | |
| EMT-A Program | 2,400 | 3,520 | 3,750 | 2,080 | 2,080 | 2,080 |
| First Aid Program | 5,300 | 6,850 | 8,000 | 8,200 | 9,575 | 5,400 |
| Emergency Response Team | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 | 2,200 |
| <u>TRAVEL COSTS</u> | | | | | | |
| EMT-A Program | 5,000 | 5,000 | 5,000 | 2,500 | 2,500 | 2,500 |
| First Aid Program | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 | 12,000 |
| Emergency Response Team | 5,000 | 5,000 | 5,000 | 2,500 | 2,500 | 2,500 |
| <u>OTHER COSTS</u> | | | | | | |
| EMT-A Program | 10,000 | 10,000 | 10,000 | 5,000 | 5,000 | 5,000 |
| First Aid Program | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 | 9,000 |
| Emergency Response Team | 5,000 | 5,000 | 5,000 | 2,500 | 2,500 | 2,500 |
| TOTALS | 199,300 | 201,970 | 206,650 | 184,980 | 186,355 | 128,180 |

TRAINING COSTS

I. Personnel (EMT-A, First Aid, Emergency Response Teams)

A. During Phase-In Period

| | |
|---|---------|
| 1. Coordinator | 45,000 |
| 2. Instructors (\$40,000 per year each) | 80,000 |
| TOTAL ANNUAL COST | 125,000 |

B. Continuing After Phase-In Period

| | |
|-------------------|--------|
| 1. Coordinator | 45,000 |
| 2. Instructor | 40,000 |
| TOTAL ANNUAL COST | 85,000 |

II. Course Materials and Tuition

- A. EMT-A Program
Tuition and books - \$160 per student
(See TABLE 2)
- B. First Aid Program
Course materials - \$ 25 per student per course
(See TABLE 3)
- C. Emergency Response Teams
Survival Training - \$250 per person
Emergency Care Training - \$300 per person
(See TABLE 4)

III. Travel Costs

A. Phase-In Period

| | |
|--------------------------|--------|
| EMT-A Program | 5,000 |
| First Aid Program | 20,000 |
| Emergency Response Teams | 5,000 |
| TOTAL ANNUALLY | 30,000 |

B. Continuing After Phase-In Period

| | |
|--------------------------|--------|
| EMT-A Program | 2,500 |
| First Aid Program | 12,000 |
| Emergency Response Teams | 2,500 |
| TOTAL ANNUALLY | 17,000 |

IV. Other Operating Costs

A. Phase-In Period

| | |
|--------------------------|--------|
| EMT-A Program | 10,000 |
| First Aid Program | 15,000 |
| Emergency Response Teams | 5,000 |
| TOTAL ANNUALLY | 30,000 |

B. Continuing After Phase-In Period

| | |
|--------------------------|--------|
| EMT-A Program | 5,000 |
| First Aid Program | 9,000 |
| Emergency Response Teams | 2,500 |
| TOTAL ANNUALLY | 16,500 |

TRAINING COSTS

TABLE 2. EMT-A TUITION COSTS

Cost of tuition and books = \$160 per person per year

Phase-in: 2 communities in the first year, 3 in each of the second and third years for Level I.

Continuing: 1 person per community per year in Level I communities.

Level II: 5 persons per year in total.

| <u>NUMBER OF STUDENTS</u> | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91 and Continuing</u> |
|-----------------------------------|----------------|----------------|----------------|---------------------------------------|
| LEVEL I | 10 | 17 | 20 | 8 |
| LEVEL II | 5 | 5 | 5 | 5 |
| TOTAL | 15 | 22 | 25 | 13 |
| COST | 2,400 | 3,520 | 3,750 | 2,080 |

TRAINING COSTS

TABLE 3. FIRST AID PROGRAMS - NUMBER OF STUDENTS

I. Communities - Phase-In Period

| LEVEL | NUMBER OF COMMUNITIES | | | | |
|-----------|-----------------------|---------|---------|---------|---------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| LEVEL I | 2 | 3 | 3 | | |
| LEVEL II | 4 | 4 | 4 | 5 | 5 |
| LEVEL III | 6 | 6 | 6 | 7 | 7 |

II. Students

| LEVEL | NUMBER OF STUDENTS | | | | | | | | | | | |
|-----------|--------------------|------|---------|------|---------|------|---------|------|---------|------|------------------------------|------|
| | 1987/88 | | 1988/89 | | 1989/90 | | 1990/91 | | 1991/92 | | 1992/93 and Continuing | |
| | Std. | Adv. | Std. | Adv. | Std. | Adv. | Std. | Adv. | Std. | Adv. | Std. | Adv. |
| LEVEL I | 20 | 20 | 34 | 34 | 40 | 40 | 16 | 16 | 16 | 16 | 16 | 16 |
| LEVEL II | 64 | 24 | 72 | 32 | 80 | 40 | 104 | 54 | 114 | 64 | 44 | 44 |
| LEVEL III | 72 | 12 | 84 | 18 | 96 | 24 | 108 | 30 | 134 | 39 | 64 | 32 |
| TOTALS | 156 | 56 | 190 | 84 | 216 | 104 | 228 | 100 | 264 | 119 | 124 | 92 |

Phase-In Period

- Level I: 10 people per community to take training to Advanced Level.
- Level II: 10 people per community to take Standard level, 6 to take Advanced level.
- Level III: 10 people per community to Standard level, 2 to Advanced level.

Continuing After Phase-In

- Level I: 2 people per year per community to take Standard and Advanced First Aid.
- Level II: 2 people per year per community to take training to Standard and Advanced Levels.
- Level III: 2 people per year per community to take training to Standard Level, 1 to Advanced Level.

TRAINING COSTS

TABLE 4. EMERGENCY RESPONSE TEAMS

Six people per hospital, rotating on call.
Seven hospitals.

Phase-in period: 3 years; two hospitals in first and second
year, three in third year.

Initial Training Costs: \$250 per person - survival
\$300 per person - emergency care.

Continuing After
Phase-In Period: 4 people per year at \$550 each, \$2,200 total per year.

| <u>COST ITEMS</u> | <u>1987/88</u> | <u>1988/89</u> | <u>1989/90</u> | <u>1990/91 and Continuing</u> |
|-------------------|----------------|----------------|----------------|---------------------------------------|
| TRAINING COST | 6,600 | 6,600 | 9,900 | 2,200 |

ANNUAL CENTRAL ADMINISTRATIVE COSTS

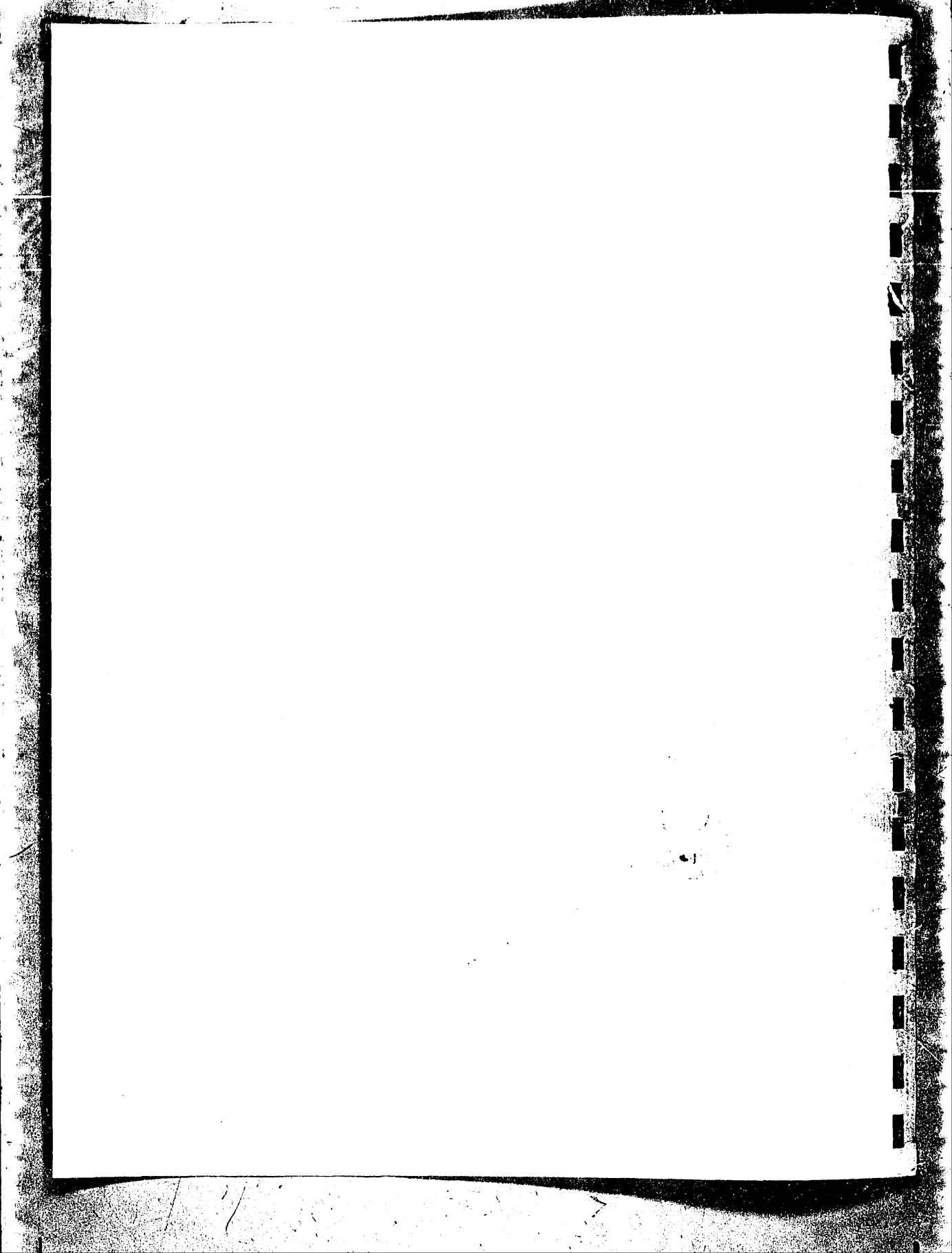
Staffing

| | |
|-------------------|-----------------|
| 1 Program Officer | \$46,800 |
| 1 Secretary | \$31,500 |
| 1 Claims Clerk | \$31,500 |
| 1 Inspector | <u>\$36,800</u> |
| | \$146,600 |

Other Costs

| | |
|--|-----------------|
| Telephone, Computing, materials, etc. | \$15,000 |
| Travel | <u>\$15,000</u> |
| | 30,000 |

| | |
|--------------------------------|--------------------|
| TOTAL, CENTRAL ADMIN. COSTS | \$176,600 ===== |
|--------------------------------|--------------------|



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ጅም ስለሚለፍ ከሆነ ደግሞ ስርዓተ-መግቢያው ለመከላከል እና ለማጥፋት ለተጠቃሚው የሚያስፈልጉትን ጥንቃቄዎች ለማወቅ ስርዓተ-መግቢያው ለማጥፋት ማስፈሰፍ ይኖርበታል።

ሆኖም የሕግ ስርዓተ-መግቢያው ለማጥፋት ማስፈሰፍ ለማድረግ ለመጠቀም የሚያስፈልጉትን ጥንቃቄዎች ለማወቅ ስርዓተ-መግቢያው ለማጥፋት ማስፈሰፍ ይኖርበታል።

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PHASING OF RECOMMENDATIONS

| RECOMMENDATION | SCHEDULE FOR PHASING RECOMMENDATIONS | | | | | | | | | | | | | |
|--|--------------------------------------|-------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
| | Feb 1 86 | Apr 1 86 | June 1 86 | Sept 1 86 | Dec 31 86 | Apr 1 87 | June 1 87 | Sept 1 87 | Mar 31 88 | Mar 31 89 | Mar 31 90 | Mar 31 91 | Mar 31 92 | Subsequent Years |
| A. INDIVIDUAL AND COMMUNITY PREPAREDNESS FOR HEALTH EMERGENCIES | | | | | | | | | | | | | | |
| 1. Assessment of resources | ----- | | | | | | | | | | | | | |
| 2. Planning and upgrading | ----- | | | | | | | | | | | | | |
| B. AMBULANCE LEGISLATION | | | | | | | | | | | | | | |
| Recommendations 3-8 | ----- | | | | | | | | | | | | | |
| 9. Encouragement of volunteerism | | | | | | | | Indefinite | | | | | | |
| C. TRAINING PROGRAMS | | | | | | | | | | | | | | |
| Recommendations 10 and 11 | ----- | | | | | | | | | | | | | |
| D. VEHICLE AND EQUIPMENT STANDARDS | | | | | | | | | | | | | | |
| 12. Level III vehicles | | | | | | | | Indefinite | | | | | | |
| E. PROVISION OF GROUND AMBULANCE SERVICES | | | | | | | | | | | | | | |
| 13. By operators able to meet standards | | | | | | | | | | | | | | |
| 14. Volunteer organizations, Levels II and III | | | | | | | | | | | | | | |
| 15. Level I Emergency Response Teams | | | | | | | | | | | | | | |
| F. FUNDING GROUND AMBULANCE SERVICES | | | | | | | | | | | | | | |
| Recommendations 16 to 23 | ----- | | | | | | | | | | | | | |
| G. HIGHWAY AMBULANCE SERVICES | | | | | | | | | | | | | | |
| Recommendations 24 and 25 | ----- | | | | | | | | | | | | | |
| H. AIR AMBULANCE SERVICES AND STANDARDS | | | | | | | | | | | | | | |
| 26. Provision by private carrier | | | | | | | | Indefinite | | | | | | |
| 27. Voluntary compliance | | | | | | | | | | | | | | |
| 28. Medical and Survival training for health care personnel | | | | | | | | | | | | | | |
| I. COORDINATION | | | | | | | | | | | | | | |
| 29. Dept. of Health - planning | | | | | | | | | | | | | | |
| 30. Communications inventory | | | | | | | | | | | | | | |
| 31. One common communications system for emergency health services | | | | | | | | Indefinite | | | | | | |
| 32. N.C.M.P. dispatching for highway ambulance services | | | | | | | | | | | | | | |
| 33. Dept. of Health - public education and information | | | | | | | | Indefinite | | | | | | |

Dotted lines indicate periods of planning, development.
 Solid lines indicate periods of implementation.

COST OF RECOMMENDATIONS1. Scheme 1

Under Scheme 1, the staffing of the ambulance service in Yellowknife would include six full-time attendants. In each of the other seven Level I communities, the staffing would include one full-time attendant and a corps of volunteers.

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|---|--------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 | 1,093,400 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 1,323,800 | 1,554,200 | 1,784,600 | 2,068,600 | 2,352,600 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 2,193,300 | 2,383,370 | 2,618,750 | 2,838,380 | 3,083,000 |

Continued.

11. Scheme 2

Under Scheme 2, the staffing of ambulance services in all eight Level I communities would include six full-time attendants.

| <u>COST ITEMS</u> | <u>FISCAL YEAR</u> | | | | |
|---|--------------------|------------------|------------------|------------------|------------------|
| | 1987/88 | 1988/89 | 1989/90 | 1990/91 | 1991/92 |
| <u>CAPITAL</u> | | | | | |
| Vehicles and Equipment | | | | | |
| Level I | 176,000 | 157,000 | 148,000 | 61,000 | 13,000 |
| Level II | 120,000 | 123,000 | 126,000 | 159,000 | 162,000 |
| Level III | 21,000 | 24,000 | 27,000 | 33,500 | 37,750 |
| Total | 317,000 | 304,000 | 301,000 | 253,500 | 212,750 |
| Storage Facilities | | | | | |
| Level II | 140,000 | 140,000 | 140,000 | 140,000 | 140,000 |
| Training Programs | | | | | |
| Computer Equipment | 30,000 | - | - | - | - |
| TOTAL | 487,000 | 444,000 | 441,000 | 393,500 | 352,750 |
| <u>OPERATING COSTS</u> | | | | | |
| Level I | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 | 2,345,600 |
| Level II | 182,400 | 364,800 | 547,200 | 775,200 | 1,003,200 |
| Level III | 48,000 | 96,000 | 144,000 | 200,000 | 256,000 |
| TOTAL | 2,576,000 | 2,806,400 | 3,036,800 | 3,320,800 | 3,604,800 |
| <u>TRAINING COSTS</u> | | | | | |
| Personnel | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Course materials and | | | | | |
| Tuition | 14,300 | 16,970 | 21,650 | 12,480 | 13,850 |
| Travel | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Other | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 199,300 | 201,970 | 206,650 | 197,480 | 198,850 |
| <u>EMERGENCY RESPONSE TEAMS</u> | | | | | |
| Training Costs | | | | | |
| TOTAL | 6,600 | 6,600 | 9,900 | 2,200 | 2,200 |
| <u>CENTRAL ADMINISTRATION</u> (G.N.W.T.) | 176,600 | 176,600 | 176,600 | 176,600 | 176,600 |
| TOTALS | 3,445,500 | 3,635,570 | 3,870,950 | 4,090,580 | 4,335,200 |