A Quiet Crisis: Minnesota's Rural Ambulance Services at Risk

Minnesota Department of Health

December 2002

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Report to the Minnesota Legislature

A Quiet Crisis: Minnesota's Rural Ambulance Services at Risk

December 2002

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December 19, 2002

Cloquet Community Memorial Hospital
512 Skyline Boulevard
Cloquet, MN 55720

Jan K. Malcolm
Commissioner
Minnesota Department of Health
85 East Seventh Place
St. Paul, MN 55101

Dear Commissioner Malcolm:

The 2001 Minnesota Legislature charged the Governor-appointed Rural Health Advisory Committee (RHAC) to complete a study of the workforce and financial challenges facing Minnesota's rural ambulance services and to develop recommendations to the Commissioner of Health to address those challenges. We are pleased to present you with the attached report, which represents the outcome of the Committee's investigation of these issues.

To address the legislative charge, RHAC convened a work group composed of 19 members familiar with emergency medical services in Minnesota. The work group developed a plan to include both statewide data and community-level input, including a statewide survey of all ambulance services and case studies in three rural communities.

The work group met six times to create and oversee implementation of a plan for collecting information needed to more fully understand the issues facing rural ambulance services. The work group's strategy included statewide data collection coupled with a community level focus. How communities support their ambulance services and what other types of supports are available to ambulance services was examined through a combination of a statewide survey, case studies, and key informant interviews.

Workforce and financial issues were examined through statewide data collected from local ambulance services about their current staff and their needs for additional staff and shift coverage. In addition, focus groups were conducted with ambulance directors and captains, with EMT's and paramedics, and with local community residents to better understand how ambulance personnel are recruited and retained, the role of communities in supporting these workforce efforts, and issues making such recruitment and retention difficult. Focus group members were also asked to suggest ways in which recruitment and retention of ambulance personnel could be improved and in what other ways the community or region could support the delivery of emergency medical services.

Analysis of data collected for this study shows that rural communities make extraordinary contributions of time and talent through their ambulance services personnel, a majority of whom are volunteers. Financial rewards for these personnel are minimal and ambulance crew members make many personal sacrifices to maintain an emergency response presence in their communities.

Under the new Medicare fee schedule, many ambulance services will see reduced reimbursements; this will hit rural communities with disproportionately large elderly populations particularly hard. Since the fee schedule will be implemented over five years, the full impact is not known at this time. RHAC recommends continued monitoring of fee schedule implementation in order to understand the full impact of these changes on rural communities and their ability to maintain emergency preparedness.

The report concludes with recommendations to address the financial and workforce challenges uncovered during this study. Three categories of recommendations are included:

- state level policy changes;
- state, federal, and foundation support recommendations, and
- state and/or regional technical assistance and support to rural ambulance services.

The report also contains numerous suggestions for local approaches to address ambulance issues. (See page 60 of the report for a complete list of recommendations and suggested local approaches).

As you will see, several of our recommendations have financial implications. We recognize that it may not be possible for the Legislature to act on these recommendations during this time of severe financial challenges for the state. However, as the Committee believes that steps to maintain and improve ambulance operations and build our emergency response system will need to take place over a number of years, we have included both low- and no-cost recommendations that could be implemented immediately, as well as some recommendations that might require additional public funds in the future.

As always, we appreciate your consideration of these issues and recommendations. We believe this report sheds important new light on the issues and challenges facing ambulance services throughout rural Minnesota and will make an important contribution to EMS system planning efforts of the state, communities, and service providers.

Sincerely,

Rick Breuer, Chair
Rural Health Advisory Committee
Cloquet, Minnesota

Michael A. Mulder, Chair
Rural Ambulance Services Work Group
Trimont, Minnesota

MINNESOTA
MDH
DEPARTMENT OF HEALTH

Protecting, maintaining and improving the health of all Minnesotans

December 2002

Dear Colleague:

It is my great pleasure to provide you with this copy of *A Quiet Crisis: Minnesota's Rural Ambulance Services at Risk*. The 2001 Minnesota Legislature directed the Governor-appointed Rural Health Advisory Committee to complete a study of the workforce and financial challenges facing Minnesota's rural ambulance services and to develop recommendations to the Commissioner of Health to address those challenges. *A Quiet Crisis* represents the outcome of the Committee's investigation of these important issues.

To address the legislative charge, the Rural Health Advisory Committee convened a work group composed of 19 members familiar with emergency medical services in Minnesota. The work group developed a plan to include both statewide data and community-level input, including a statewide survey of all ambulance services and case studies in three rural communities. The Department is grateful to the Rural Ambulance Services Work Group and the Rural Health Advisory Committee for their insights, wisdom, and other valuable contributions to this study.

Analysis of data collected for this study shows that rural communities make extraordinary contributions of time and talent through their ambulance services personnel, a majority of whom are volunteers. Financial rewards for these personnel are minimal and ambulance crew members make many personal sacrifices to maintain an emergency response presence in their communities. Particularly in this era of heightened emphasis on emergency preparedness, it is critical that we recognize the value of the contributions of ambulance services and their staff, all across the state.

Under the newly implemented Medicare ambulance fee schedule, many ambulance services will see reduced reimbursements; this will hit rural communities with disproportionately large elderly populations particularly hard. Since the fee schedule will be implemented over five years, its full impact is not known at this time. The Rural Health Advisory Committee and the Department recommend continued monitoring of fee schedule implementation in order to understand the full impact of these changes on rural communities and their ability to maintain emergency preparedness.

Included in the report are recommendations addressing financial and workforce challenges uncovered during this study. Three categories of recommendations are included:

- state level policy changes;
- state, federal, and foundation support recommendations, and
- state and/or regional technical assistance and support to rural ambulance services.

The report also contains numerous suggestions for local approaches to address ambulance issues.

Several recommendations outlined in this report have financial implications. We recognize that, given the severe financial challenges facing the state, this may not be the time for the Legislature to act on these particular recommendations. However, as the Department believes that steps to maintain and improve ambulance operations and build our emergency response system will need to take place over a number of years, we have included both low- and no-cost recommendations that could be implemented immediately, as well as some recommendations that might require additional public funds in the future.

I congratulate the Rural Health Advisory Committee and its Rural Ambulance Services Work Group on completion of this report. We believe it sheds important new light on the issues and challenges facing ambulance services throughout rural Minnesota and will make an important contribution to EMS system planning efforts of the state, communities, and service providers.

Questions and comments on the report can be directed to the Office of Rural Health and Primary Care at 651-282-3838.

Sincerely,

Jan K. Malcolm
Commissioner of Health

Cc: Rick Breuer, Chair, Rural Health Advisory Committee
Mike Mulder, Chair, Rural Ambulance Services Work Group

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The Department would also like to give special thanks to the ambulance services that responded to the statewide survey. Their willingness to take the time to complete and submit the survey resulted in a response rate of over 90 percent. The thoroughness with which ambulance services completed the survey provided a wealth of information for this study. Thanks also to the ambulance services and community members who participated in the case studies, focus groups, and vignette interviews. Their willingness to share their time, thoughts, and experiences contributed enormously to this report.

Finally, thanks to the many individuals who contributed ideas, suggestions, information, and support in the preparation, research, and completion of this report.

Executive Summary

Introduction

In an attempt to understand the challenges facing ambulances services in rural areas in Minnesota, the 2001 Minnesota Legislature charged the Governor-appointed **Rural Health Advisory Committee (RHAC)** to complete a study of the challenges facing Minnesota's rural ambulance services and to develop recommendations to the Commissioner of Health to address those challenges (Appendix A). Included in the charge were an examination of personnel challenges, including volunteer, part-time, full-time and paid staff; funding for ambulance services; and the financial impact of the federal Balanced Budget Act of 1997 on rural ambulance services. The Legislature further charged the committee to identify existing state, regional, and local resources that support the provision of local ambulance services in rural areas.

To address this legislative charge, RHAC convened a work group composed of members familiar with emergency medical services (EMS) in Minnesota and representative of those groups interested in rural health and emergency medical services. The work group developed a plan to include both **statewide data and community-level input,** including a combination of a statewide survey of all ambulance services and case studies in three rural communities.

The **history** of EMS in Minnesota dates back to the 1800s, when horses were the mode of transportation. In the first half of the 20th century, community funeral homes performed ambulance functions, using the hearse for dual functions. The 1960s and 1970s brought significant changes to the system. Today, ambulance services in Minnesota reflect a great diversity of ownership, organizational structure, and operational styles, and rely on both volunteer and paid staff, both part-time and full-time. The variety of ownership, funding and staffing creates unique and diverse challenges in maintaining quality of and access to emergency medical services, especially in rural areas of Minnesota.

Rural Ambulances Services in Minnesota: System Overview

The **Emergency Medical Services Regulatory Board** (EMSRB) was established by the Minnesota Legislature in 1995 and began operations in 1996 after becoming independent from the Minnesota Department of Health. The EMSRB is responsible for regulation, policy development and grant support for EMS in Minnesota. Minnesota's ambulance services are organized at the state, regional and local level. The EMSRB is responsible for the regulation of both ambulance services and ambulance personnel.

In 2002, Minnesota's ambulance services held a total of **310 licenses** of which **308 are currently active**. For purposes of ambulance service coverage, the state is divided into **primary service areas (PSAs),** with each ambulance service licensed to serve a specific PSA. Ambulance services are licensed as **Basic Life Support (BLS)** (199), **Advanced Life Support (ALS)** (72), **Part-Time Advanced Life Support** (ALS-P) (7), and **Specialized Life Support** (which includes air ambulance service) (30). An additional two licenses are currently not active — one has expired and the other has not been allocated. Each license type has different licensing standards and is required to provide differing levels of care.

EMSRB licenses ambulance services and certifies all **ambulance personnel** in Minnesota. There are **four levels of certification** for EMS personnel in Minnesota: **first responder, EMT-B (basic)**, **EMT-**

I (intermediate) and **EMT-P (paramedic)**. All ambulance services are also required to have a medical director, and most have an ambulance service director.

Minnesota is divided into **eight EMS regions** that receive financial assistance through the Emergency Medical Services (EMS) Fund. Other sources of funding are: seat belt fine revenue; General Fund support for personnel training; local tax support and subsidies; service charges; the Revenue Recapture Act; insurance, and public programs including Medicare, Medicaid, GAMC, and MinnesotaCare.

Survey Results & Discussion

The **Minnesota Ambulance Service Survey** was developed with assistance from the Rural Ambulance Services Work Group in late 2001 and sent to all ambulance services in early January 2002 (Appendix B), with follow-up contact, through phone calls, faxes and additional survey mailing between February and September 2002. The survey was designed to gather information on the ambulance workforce, operations and finances.

The findings are based on the responses of 98 percent of ambulance services in the state. Some services were unable to complete all of the questions on the survey, especially those relating to service operations and finances, so a portion of surveys are incomplete. The findings are presented with an emphasis on exploring the differences and similarities between services in different regions and areas of the state.

Geographic Distribution

Eighty-five percent of ambulance services are located outside of the state's urbanized areas. Close to 70 percent of rural services are BLS services, while roughly half of urban services are BLS. The southeast and southwest regions account for one-third of all ambulance services, with the fewest services in the northwest region (7.4 percent). Reflecting the uneven distribution of services across the state is the variation in maximum carry distance, varying from two miles in a metropolitan county to 70 miles in northern Minnesota.

Workforce

Ambulance personnel currently on the rosters of ambulance services in Minnesota total 6,983. Of this number, 59 percent are volunteers, 25 percent are full-time paid staff, and 16 percent are part-time paid staff. The state's services have, on average, a total roster of 26 personnel, with a **median of 19**. BLS services average 20 personnel, mostly volunteer, while ALS services generally have a much larger staff (39 on average), with three-fourths paid. Somewhat predictably, rural areas are more likely to have volunteer staff (77 percent volunteer) than their urban counterparts, who have more paid staff (54 percent paid).

The **characteristics** of ambulance personnel also vary statewide. Two-thirds of all ambulance service personnel are male, with a larger proportion of female staff in rural areas (41 percent) than in urban areas (20 percent), and a larger proportion of female ambulance personnel are volunteers (67 percent females v. 55 percent males). The age distribution of ambulance staff goes from 18 through 70+ years, with most staff between the ages of 20 and 50. Rural personnel are more likely to be over the age of 40 (45 percent), when compared to urban staff (34 percent). Paid staff tends to have fewer years on the job than volunteer staff. Rural staff is likely to have been on the job more years than their urban counterparts.

Recent staffing additions were reported to be highest in rural areas; 70 percent of rural services added new staff in 2001, and 75 percent report a need to add staff. When viewed with the higher proportion

of volunteer staff in rural services, this is not surprising. Rural services reported experiencing more difficulty in covering all of their shifts than urban services, particularly during the daytime, with 67 percent of rural services indicating difficulty versus 38 percent of urban services. Weekend and holiday coverage also appears more challenging for rural services.

In summary, the survey findings suggest that staffing shortages are an issue. Many services, especially those located in rural areas of the state, have problems covering shifts, and rely significantly more on volunteers. The problem may be more acute in specific regions. Still, how staffing shortages are distributed among services, whether they are systemic or the result of a maldistribution of ambulance personnel, is unclear.

Operations and Finance

Ambulance services were asked to provide detailed operations and financial information including: number of service runs made, percent of charges billed to Medicare, total operating and personnel expenses, total net revenue and revenue sources, and information regarding the ambulance fleet. The data describe a wide diversity of services across the state, from rural services with small operations and few runs to large providers with many runs. Although the response on this portion of the survey was not complete, available data offers some helpful insights into the state's ambulance industry.

In 2000, the state's ambulance services made a **total of 371,944 runs**, with urban services reporting an average 6,693 runs versus rural services at 480 runs. As predicted, ambulance services in smaller PSAs have a smaller volume of runs. Run volume alone may be deceptive, however, since this may suggest that services with lower volumes may not be actively engaged in providing services. When run volume is examined on a **per capita basis**, there is no meaningful difference between urban and rural services or between services by PSA. Almost two-thirds of services reported operating one or two ambulances. The median age of the state's **ambulance fleet** is 6 years, with 11 percent reporting ambulances of 12 twelve years or older. Radios in these vehicles ranged from less than one year to 25 years old, with the average just slightly over six years.

Close to one-quarter of all ambulances services did not report an annual estimate of **operating expenses** on the statewide survey. The information collected showed broad variation in operating expenses, ranging from a reported $1,000 to $35.9 million annually. Services located in urban areas spent, on average, close to 20 times more than services located in rural areas. Of those reporting, **rural services** averaged $211,000 in operating expenses, with a median of **$92,000**. Rural BLS services (136) reported a median of $64,000, with rural ALS services (35) reporting a median $618,000 in operating expenses. This compares to a median of **$1,238,000** for the 22 **urban services** that provided this information. Personnel expenses, on average, account for roughly 60 percent of services' total operating expenses, with a slightly higher rate for urban areas. Education and training expenses accounted for an average expenditure of 15 percent of total personnel expenditures.

Ambulance service funding comes from five major sources: Medicare reimbursement, insurance coverage, private- or self-pay, Medical Assistance and contract services. Medicare is the largest of these, representing about forty percent of ambulance service revenue. Funding generated from other sources, including grants, training reimbursements, public subsidies, and interest dividends from pension investments, also support service operations. There are several notable geographical differences for revenue sources within the state. In particular, Medicare reimbursement tends to play a more important role in the revenue picture of rural services where it, on average, accounts for 41 percent of revenue compared to 31 percent for urban services. By contrast, the average proportion of revenue from private pay and Medical Assistance is slightly higher for urban services. In addition,

services in several regions, including the northwest, southwest, west central and central regions, reported Medicare as a source of revenue at a higher rate than the state average.

Total system cost

A complete understanding of the financial and operational challenges that ambulance services in Minnesota face is not easy to delineate. The survey findings reveal an ambulance system that is diverse in capacity and resources. For example, the range of annual runs in the state ranges from 3[1] to 50,000, with a median of 292. The cost of providing ambulance service in the state varies greatly by region and by service. On average, an ambulance run in rural Minnesota costs $415. However, in northwestern Minnesota, where the runs are longer and the operating costs are higher, a run costs closer to $575. Calculating a total current estimate of operating expenses for all ambulance services in Minnesota is thus somewhat challenging (Appendix C), and therefore was approached from two perspectives.

- **Total operating expense analysis** uses the average cost per run and the total ambulance runs performed in 2000. This method produces a total expense range for the state in the **range of $188 million to $200 million per year**.
- **In-kind volunteer contribution estimate** includes the assignment of value to the thousands of volunteer hours that are contributed to the rural ambulance system, relying upon the median wage ($10.44) for EMTs/Paramedics outside of the MSA (Metropolitan Statistical Area). Assuming two staff on hand for each shift in rural ground-based services, the estimate of potential total system value for volunteer labor is approximately **$37 million per year.**

Case Study and Vignettes

To further understand and describe the variety of ambulance service operations in Minnesota, a case study approach was developed to supplement information from the statewide survey. The case study involved site visits to three rural communities and additional phone interviews with ambulance captains and staff in several other communities. The site visits included interviews with the directors, focus groups and short surveys with EMTs and paramedics, and community focus groups. The case studies and interviews were critical in understanding the data, and indeed provided a view of the rich diversity of resources and challenges experienced by Minnesota's rural ambulance services and their communities. Several issues formed a common thread throughout each of the ambulance service visits and interviews: recruitment and retention of personnel, ambulance garages/quarters, hazards, and long-term financial viability.

Recruitment and Retention of Personnel

EMTs and paramedics in each of the case study sites were asked why they volunteer and how they view their work as well as their future involvement. In answer to why they volunteered, 36 percent responded that they wanted to help people or their community and 32 percent expressed a previous or current interest in medicine. A sense of community pride and civic responsibility were clear. Ninety-one percent of case study respondents agreed that being on the ambulance service was a good use of their time. However, **barriers to recruitment/retention** were identified and are listed below.

- **Nature of the work.** There is fear of responding to serious accidents or injuries, even though many ambulance runs are for chest pain, shortness of breath or other less traumatic causes.

[1] Total annual runs per service generally begin at 20. Services with fewer than 20 annual runs are specialized service providers.

- **Changing demographics and selective volunteerism.** Increasing elderly populations and difficulty retaining young families in communities place multiple demands upon the volunteers' time, including work and families.
- **Invisibility.** Due to the confidential nature of ambulance work, it is difficult for volunteers to share their work with others and generate interest.
- **Time and training demands.** Time commitment for calls (up to 60 hours per month for some services) and training (both the 110 hour initial training and ongoing required refresher courses) rank as top challenges.
- **Training issues.** Many volunteers felt that refresher course requirements were too frequent and repetitive. Balancing training requirements and increasing skill expectations with optimal patient care was a concern
- **High stress and menial tasks.** These include encountering serious accidents and injuries, and then being responsible for ambulance cleaning and maintenance.
- **Fear of errors and the need for high quality medical direction.** Ambulance personnel expressed need for consistent medical direction, high quality ambulance protocols, and refresher testing based on helping ambulance personnel maintain and improve their skills.
- **Employment concerns.** Some volunteers expressed concern over employers' unwillingness to release employees for ambulance calls. This contributes to difficulty in covering daytime weekday ambulance shifts.
- **Compensation.** There is great disparity in the ability of communities to compensate their ambulance volunteers. Pay varies per service from no pay to $20 per run regardless of time or distance to $12.00 per hour for paramedics who are hospital or county employees released for ambulance runs.
- **Retirement.** Retirement compensation programs, such as the Longevity Award and Incentive Program, do not adequately reflect the contribution made by ambulance volunteers

In the current environment of changing demographics and difficulties recruiting volunteers in general, it is hard to predict how well ambulance services will be able to recruit volunteers over the next five to ten years. Many of those interviewed were deeply concerned about their towns becoming retirement communities, with few people available to work on the ambulance squad. Rural economic development and the availability of local ambulance staff are clearly linked.

Quality of Ambulance Garages/Facilities

This issue was identified in several case study communities, arising from a not infrequent use of older or hand-me-down buildings to house ambulance facilities. Specifically, concerns were directed toward:

- **Air quality.** Housing personnel and fire/ambulance vehicles together is problematic for personnel. Many facilities do not meet OSHA standards.
- **Training facilities.** Many ambulance services don't have training space, so equipment must be moved to other locations for training, away from the ambulance garage.
- **Sleeping quarters.** Increased travel time in rural areas creates hardships and affects recruitment of personnel from neighboring towns. Residents of neighboring communities could be recruited by an ambulance service if there were kitchen facilities and sleeping quarters available for the long hours of call shifts.
- **Hazards.** Those mentioned include:
    - Methamphetamine labs, which are being discovered at an increasing rate across Minnesota.
    - Blood borne pathogens, and lack of protective clothing and equipment. Some

ambulance services have no uniforms or receive hand-me-down uniforms from neighboring services. Many are not composed of current technologically advanced materials to prevent pathogens from penetrating the fabric.

- Chemicals. Trucks and trains carrying hazardous or flammable materials are an ongoing concern.

Financial and Reimbursement Issues

Several issues are threatening the long-term financial viability of ambulance services in Minnesota. These include:

- **Impact of the new Medicare fee schedule.** With increasing elderly populations, there is concern about reduced reimbursements and their impact on ongoing costs.
- **Inconsistent billing practices.** Minimal staff training, coupled with complex coding systems for reimbursement, may result in services not receiving run compensation they are due.
- **Rising costs.** Insurance, fuel, training and supplies were mentioned specifically. Beside the rising costs of insurance, some services fear losing coverage due to insurers dropping this line of business.
- **Bad debt**. A rising rate of bad debt was reported by several ambulance services. Medicare assignment may alleviate some of this because services will receive payment directly from Medicare. However, this will not affect bad debt for non-Medicare patients, some of whom question why they have to pay for "volunteer" ambulance service.
- **Mandates and requirements.** Compliance with HIPAA and Medicare assignment without support from the regulating authorities are a particular stress to volunteer services.
- **Unloaded miles.** Long ambulance runs to transport patients to the nearest facility or to facilities offering higher levels of care, especially in the northern part of the state, are costly. The ambulance services receive no reimbursement for the portions of the trip before and after the patient is en route to the facility.
- **License Fees.** For the very smallest services, even the $150 license fee and additional $96 per ambulance every two years, can be a hardship.

Recommendations

Recommendations Involving State Level Policy Changes

Note: Some of these recommendations have financial implications.

- **Tax credits or exemptions for ambulance volunteers**

  Recommendation 1: Ambulance volunteers' service-related income, up to the statutory limit on "volunteer income" (currently $3,000 per year), should be made exempt from state income taxes, and that the volunteer income cap be eliminated.

- **Training related improvements**

  Recommendation 2: Ambulance personnel training should be shifted from "training for the sake of training" to an approach involving skills-based testing, and training targeted to refreshing only those skills where a need for improvement is identified. The EMSRB has already done some exploration of this approach. The Committee recommends that the EMSRB continue to explore and formulate proposals for furthering this approach.

Recommendation 2a: The EMSRB should explore training delivery methods that could be more efficient than the current system, including greater use of electronic delivery mechanisms such as the Internet. In addition, any required "variance training" or other specialized training such as CPR be incorporated into the basic refresher course rather than being offered separately.

- **Improvements to the Longevity Program**

  Recommendation 3: Current statute places an upper limit of 20 on the years of service for which an ambulance volunteer can receive credit through the Ambulance Service Longevity Award and Incentive Program. This 20-year limit should be eliminated. In addition, the Emergency Medical Services Regulatory Board should conduct further review and analysis of possible improvements to the program.

  Recommendation 3a: An analysis of the longevity program, PERA enrollment, or other retirement options for paid and volunteer ambulance staff should be conducted to identify which vehicle would provide the most appropriate incentives for retaining paid ambulance personnel.

- **Training reimbursement and cost saving strategies**

  Recommendation 4: The hourly training stipend ambulance services receive for staff training (currently $5.50/hour) should be increased to an amount that more closely represents the value of employees' time, and an additional allowance should be made for the cost of required training materials.

  Recommendation 4a: The amount of time ambulance squads must wait for reimbursement after an employee is trained should be reduced from one year to six months, in order to allow re-use of training funds on a more frequent basis.

- **Strengthen involvement of medical directors in ambulance service operations**

  Recommendation 5: The EMSRB is encouraged to work with regional EMS programs, the Minnesota Academy of Family Physicians, the Minnesota Medical Association, and others as appropriate to develop incentives for medical directors to participate in available national and state training opportunities, and to develop as necessary additional training opportunities that better meet the needs of rural medical directors.

  Recommendation 5a: Public recognition of the contributions medical directors make to the operation of the local ambulance service should be encouraged by the EMSRB.

- **Variances for health, child care, and other local employers with staffing ratio issues**

  Recommendation 6: Implementation of a variance or exemption for staffing ratios for health and childcare facilities, schools, and other employers during the period of time that an employee is staffing an ambulance run, up to a certain limit (possibly two hours), would help meet daytime ambulance volunteer needs.

  Recommendation 6a: A child care provider exemption should be structured to allow for unannounced drop-off of the children of ambulance personnel from their community during the time the ambulance staff member is on a run.

- **Include ambulance personnel in health legislation and analysis**

  Recommendation 7: The Legislature and the Minnesota Departments of Health and Human Services are encouraged to consistently include references to ambulance services and personnel in health workforce policy directives and health workforce analysis.

Recommendations Involving Direct State, Federal or Foundation Financial Support

- **Support for federal legislation**

  Recommendation 8: The Legislature, the Commissioners of Health and Human Services, the EMSRB, and other state policy makers should support federal efforts to improve reimbursement and provide other supports to rural ambulance services.

- **Grant and/or loan programs**

  Recommendation 9: A grant and/or loan program to meet capital, clothing, and equipment needs of rural ambulance services is recommended.

- **Fee or tax related strategies**

  Recommendation 10: Further exploration of fee-related strategies to support rural ambulance services is recommended.

  Recommendation 10a: The EMSRB and/or the Department of Revenue should develop ways to encourage city and county operated ambulance services to take full advantage of the Revenue Recapture Act, which provides a mechanism for services to collect unpaid charges out of tax refunds or lottery prizes.

Recommendations Involving State and/or Regional Technical Assistance and Support to Rural Ambulance Services

Recommendation 11: The EMSRB and regional EMS programs should explore and, where appropriate, develop implementation plans addressing the following identified needs:

- Standardized accounting system
- Specialized training
- Intensive support for struggling ambulance services
- Mutually supportive roles of health care facilities and ambulance services
- Regional communication systems
- Centralized ambulance repair support

Introduction

Legislative Charge

In 2001, the Minnesota Legislature charged the Rural Health Advisory Committee (RHAC) to complete a study and develop recommendations related to the financial and workforce challenges facing Minnesota's ambulance services (see Appendix A for the full Legislative charge). RHAC is a Governor-appointed advisory committee that "serves as a statewide forum for rural health concerns. Their duties, as defined in statute, are as follows:

- Advise the Commissioner of Health and other state agencies on rural health issues;
- Provide a systematic and cohesive approach toward rural health issues and planning, at both a local and statewide level;
- Develop and evaluate mechanisms to encourage greater cooperation among rural communities and among providers;
- Recommend and evaluate approaches to rural health issues that are sensitive to the needs of local communities; and
- Develop methods of identifying individuals who are underserved by the rural health care system."[2]

Approach to Study

To address this legislative charge, RHAC convened a work group composed of members familiar with the emergency medical services system in Minnesota and representative of those groups interested in rural health and emergency medical services. According to the legislative charge, "such groups may include:

- Local elected officials;
- Ambulance and emergency medical services associations;
- Hospitals and nursing homes;
- Physicians, nurses, and mid-level practitioners;
- Rural health groups; the emergency medical services regulatory board and regional emergency medical services boards; and
- Fire and sheriff's departments."

This group, known as the Rural Ambulance Services (RAS) Work Group,[3] was convened in August 2001. The group met six times to create a workable plan for collecting information needed to understand the financial and workforce issues facing ambulance services, as well as other pressing issues impacting the delivery of emergency medical services in Minnesota and to review draft materials as they were developed. The RAS workgroup's strategy included statewide data collection, but also focused at the community level to examine these issues. How communities support their ambulance services and what other supports are being used by ambulance services was examined through a combination of a statewide survey, case studies, and key informant interviews.

[2] Minnesota Statutes 2002, Section 144.1481.
[3] See Page v for a complete list of work group members.

As part of this plan, workforce issues were examined through statewide data collected from local ambulance services about their current staff and their needs for additional staff and shift coverage. In addition, focus groups were conducted with ambulance directors or captains, with EMTs and paramedics, and with local community residents to better understand how ambulance personnel are recruited and retained, the role of communities in supporting these workforce efforts, and issues making such recruitment and retention difficult. In addition, focus group members were asked to suggest ways in which recruitment and retention of ambulance personnel could be improved and in what other ways the community or region could support the delivery of emergency medical services.

To address the financial issues facing ambulance services, a number of approaches were applied. Currently, there is no consistent source of information regarding the financial status, revenues and expenses, or budgets of local ambulance services. Because of this, it was important to obtain information from each ambulance service about their current financial condition. As will be seen later in this discussion, this proved impossible for many small ambulance services. In addition, the Office of Rural Health and Primary Care, as staff to the Rural Health Advisory Committee, submitted a Freedom of Information Act (FOIA) request to the Centers for Medicare and Medicaid Services (CMS) to receive data related to Medicare payments for ambulance services provided to seniors. At the time of completion of this report, ORHPC had not yet received data under this request. Other sources of statewide information were pursued as well, including city and county data on expenditures related to ambulance services from the State Auditor. Data from the State Auditor could not be compared to information collected through the statewide survey because individual ambulance services do not directly correspond to units of government. Data collected by the State Auditor, principally the enterprise funds, was useful because it provided a standard for the data elements that should be collected in order to gauge the financial state of the ambulance system. Finally, as part of the community-level focus groups, ambulance directors were asked about sources of support for the ambulance service, including informal mechanisms such as pancake breakfasts and support from local civic organizations.

These data, coupled with extensive work describing the emergency medical services system, its regulatory structure and sources of state and federal funding, comprise the basis for the RAS report. The study methodology is described in greater detail below.

Statewide Ambulance Survey

The Minnesota Ambulance Service Survey was designed to gather information on the ambulance workforce, operations and finances for the ambulance services across the state.

The development of a survey to collect this detailed information was initiated in October 2001. With assistance from the Rural Ambulance Services Work Group, a subgroup of the state Rural Health Advisory Committee, other state ambulance service experts, and the response from a short pre-test of the instrument, a final draft of the survey was completed and sent to all services in early January 2002 (see Appendix B – Minnesota Ambulance Services Survey). Extensive follow-up contacts, through phone calls, faxes and additional survey mailings, were completed between February and September 2002. This comprehensive follow-up approach proved to be necessary given the difficulty contacting some of the services.

Four services did not reply to the survey during the formal contact process. The final survey response rate is 98 percent. Some services did not respond to all of the questions on the survey. In particular, for operations and finance related questions, many services provided little or no response to that portion of the survey questionnaire — 81.6 percent of respondents replied to nearly all of the questions

in that section of the report (see Appendix D for Response Rates).

Case Studies and Vignettes

In addition to the statewide ambulance survey that formed the foundation for information on workforce and financial issues, a case study was developed to gather community-level input and better inform the findings from the statewide survey. Three communities were selected based on geographic location, ownership, type of service and other characteristics. (see Appendix E on Case Study Communities for descriptions of the involved communities). These three communities were studied in depth with respect to their ambulance operations. Key informants provided information about ambulance operations in the communities. Each community was site visited in order to gather information from local ambulance staff and community residents. Interviews were conducted with the ambulance director or captain, and focus groups were conducted with ambulance staff and volunteers as well as with community residents.

In addition to the intense work in these three communities, interviews were conducted with ambulance directors and personnel in several other communities. These additional communities were geographically dispersed, had differing ambulance operational and ownership characteristics, and represented a range of services from those struggling with recruitment and retention or financial issues to those who were doing well in their day-to-day personnel and financial operations. These additional interviews helped to support and extend the findings from both the statewide survey and the intensive case study work conducted at the three community sites. The result is a well-rounded picture of ambulance operations, including similarities across services, but also variation based on geography and locally based features.

The three major pieces of this work, the EMS system overview, the statewide survey of ambulance services, and the intensive case studies and shorter vignette interviews, combine to provide a picture of ambulance operations in Minnesota and the challenges they face for the future. They demonstrate the range of problem-solving taking place at the local level to try to ensure ongoing ambulance operations. They also provide the context for how ambulance services fit into the larger state and local regulatory and reimbursement picture. These views at the local, state, and system level provide information necessary to plan for the future of Minnesota's emergency medical services system.

History of Emergency Medical Services

Emergency Medical Services (EMS) provide urgent "medical assistance and transportation to a medical facility, as well as make available coordinated inpatient and outpatient treatment so that the most seriously ill or injured are quickly triaged to specialty facilities."[4] Ambulance services have operated in Minnesota since the 1800s, when horses brought the ambulance to an ill or injured person's location. In the first half of the 20th century, community funeral homes operated many ambulance services. Hearses were used to transport sick and injured persons to the hospital, as well as those individuals who died to the funeral home.[5] Hearses were designed to transport human bodies in a horizontal position, precisely what was required of an ambulance. At that time, ambulances were merely a source of transportation to the hospital. Mortuary staff had no training in first aid or emergency care.

[4] "Emergency Medical Services In Rural Areas: How Can States Ensure Their Effectiveness?" *Rural Health Brief*. National Conference of State Legislatures. August 2000. <http://www.ncsl.org/programs/ health/Forum/ruralems.htm> (October 22, 2002).
[5] "SGMC EMS Celebrates 30 Years Serving You." South Georgia Medical Center, Mobile Care Services. <http://www.sgmc.org/services/emshistory.htm> (October 29, 2002).

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Minnesota's First Ambulance, 1890

During the 1960's a series of initiatives changed ambulance services dramatically. In 1964, the President's Commission on Highway Safety called for emergency care and transportation of the sick and injured. In 1965, the National Academy of Sciences/National Research Council published *Accidental Death and Disability: The Neglected Disease of Modern Society*. The report outlined the lack of uniformity, poor quality, lack of training and resources that plagued the ambulance system. In 1966 Public Law 89-563, the National Traffic and Motor Vehicle Safety Act, was enacted. Though the law focused primarily on highway traffic accident victims, it was the first step toward establishing guidelines for the quality of emergency medical care.

The last years of the 1960's saw the development of further regulations and guidelines for emergency care. At the federal level, agencies developed standardized training requirements, including the first textbook for EMS personnel, equipment and vehicle upgrades and the first step toward making EMS more than transportation. The 1973 EMS Systems Act (Public Law 93-154) added Title XII to previous legislation and paved the way for EMS as we know it today by authorizing money for expanding and improving EMS systems and creating a formal structure within the federal government to oversee EMS.[6,7]

In 1996, the federal government recognized the skills and strengths of prehospital professionals and the importance of superior EMS care. The National Highway Traffic Safety Administration and the Health Resources and Services Administration joined with leaders from the EMS community to create a strategic plan for building the EMS system into the twenty-first century. The *EMS Agenda for the Future* (U.S. Department of Transportation, National Highway Traffic Safety Administration, 1996) is a vision for EMS in the United States that builds on the strengths of this country's diverse emergency resources and expands the emergency medical safety net. The "Agenda" examines the means to further develop fourteen key EMS attributes: integration of health services, EMS research, legislation and regulation, system finance, human resources, medical direction, education systems, public

[6] "Emergency Medical Services Regulation in Texas: A Brief Review FY 2000." Texas Department of Health, Bureau of Emergency Management. 2000.
[7] Mohr, Penny E. et al. "Establishing a Fair Medicare Reimbursement for Low-volume Rural Ambulance Providers." *Policy Analysis Brief*. Project HOPE Walsh Center for Rural Health Analysis. July 2001.

education, prevention, public access, communication systems, clinical care, information systems, and evaluation.

Ambulance Services in Minnesota Today

Today, ambulance services in Minnesota reflect a great diversity of ownership, organizational structure, and operational styles. Some are part of fire departments, while others are owned by the local hospital or by the city or county. A small number of services have paid employees. Most services are operated by volunteers whose "pay" ranges from a small stipend in a retirement fund to payment for on-call time or a small stipend for each ambulance run in which they are involved. In some communities, all of the ambulance volunteers are on call 24-7. Many others have 12-hour shifts, while some try to accommodate the competing demands of work and family with shorter shifts that fit into people's lives, but create an administrative headache.

The picture of a paramedic waiting on call at an ambulance garage, getting "toned out", and driving for a minute or two to reach the ill or injured person who is then transported to a hospital a few miles away is not the reality for the bulk of ambulance services in Minnesota. Instead, picture a volunteer being paged at work or in the middle of the night, driving to the ambulance garage, taking the ambulance to the scene (where first responders might have already arrived), and preparing the patient for a drive that might take 30 minutes to more than an hour to reach a local hospital. There the person might be stabilized and then put back in the ambulance to be transported to a facility that provides more specialized services. In some areas, a paramedic from an ALS squad owned by a different ambulance service might jump on the BLS ambulance along the way to provide some medications or airway management, depending on the needs of the patient. If the patient is a senior, perhaps the EMTs have to shovel the driveway before they can attend to the patient's needs. Add a few inches or feet of snow, icy conditions, and gravel roads with no shoulders to complete the picture. If the patient is an injured snowmobiler, they may have to wait for a snowmobile and rescue sled to arrive at the scene to evacuate the individual. On the shores of Lake Superior, perhaps the ambulance crew has to come via boat to an inaccessible portion of the shoreline or rappel down the rocks to reach the patient.

Issues Facing EMS

Currently, EMS systems around the country and in Minnesota are struggling to remain both financially sound and fully staffed. Changes resulting from the Balanced Budget Act of 1997 and the subsequent creation of a national Medicare ambulance fee schedule have EMS providers very concerned. The new fee schedule requires mandatory Medicare assignment and also, in Minnesota, reimburses providers at lower rates than the old system. This means that providers have to accept whatever Medicare reimburses as payment in full. They are not allowed to bill Medicare patients for any costs in excess of Medicare's reimbursement. This is especially damaging to rural Minnesota because Medicare eligible patients are the single largest segment of ambulance service users.

Staffing shortages are intensified by rural EMS providers' traditional reliance on volunteer labor, which is becoming increasingly unavailable. The aging rural population and the tendency of younger people to move into urban centers exacerbate labor difficulties. Changing family composition, including the increase in single-parent homes and full-time dual earners, leaves people with less free

time for volunteerism. Since most rural personnel are volunteers with full-time jobs, and many work outside of the community they reside in, it is difficult to respond to calls during daytime hours. [8]

Recent federal and state EMS policy initiatives have moved toward improving the quality of service, increasing the demands and level of training required of EMTs and paramedics. "For example, the American Heart Association has very specific response time and patient care guidelines for EMS. Increasingly it seems that [EMS providers] are being compared to these national standards."[9] Especially in rural areas, training has often been unable to keep pace with these increased demands and regulations. This raises the question of whether the EMS system should be held to the same standards in rural and urban areas, and if not, how the differing standards should be set.

A tension exists between EMS' role as a public safety function and its role as a health care provider. Some of this tension appears to be attributable to varying EMS organizational arrangements at all levels of government. Most public safety officers (police and fire) play a dual role as first responders, since they have basic emergency medical skills in addition to their firefighting or law enforcement training. In some communities, public safety departments such as fire or police provide ambulance service. Other community EMS systems may be operated by hospitals, for-profit corporations or non-profit corporations. There can be competition for dollars between fire departments and non fire-based ambulance services. Similar tensions between the public safety and health care sectors occur to varying degrees at the state and national level.

Historically, reimbursement has been tied primarily to the transportation function of EMS and not necessarily to the delivery of emergency medical care.[10] Rural areas do not have the same level of public transportation infrastructure that urban and suburban areas have. This can sometimes result in a rural elderly beneficiary calling 911 because no other non-emergency transport option is available, resulting in a transport that does not meet Medicare coverage criteria.[11] Without the ability to bill patients directly for uncompensated care, ambulance services can be left in a financial bind.

Finally, experts agree that the largest cost for ambulance services is the cost of preparedness, including all of the fixed costs related to purchasing and maintaining communication systems, vehicles and equipment, personnel training and continuing education, etc.[12] Since rural ambulance services generally have lower call volume than those in more densely populated areas, they have fewer runs over which to spread the fixed costs.

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[8] Gagnon, 2001 states, "With families and two jobs per household, EMS is a commitment that many people can't make. For departments, retaining the qualified, trained personnel becomes a real challenge, and the reward of the annual banquet dinner or Christmas party has lost much of its appeal. So much so that managing a volunteer department has become a real art as technology keeps pushing the training demands made on all EMS personnel. As the EMS system diversifies to include specialty tasks such as hazardous materials, mass trauma, and terrorism response, the need for expensive, high-tech equipment becomes a costly reality." Gagnon, Paul. "EMS Enhancement Study." Connecticut Office of Rural Health, 2001.

[9] "Volunteer EMS in America." *Rural Health EMS System Review: Livingston and Steuben Counties.* <http://www.ruralhealthresources.com/EMSreview/Volunteer_EMS_in_America.htm> (October 22, 2002).

[10] *Rural and Frontier EMS Toward the Year 2000*. National Rural Health Association. May 1997.

[11] Rural Ambulances: Medicare Fee Schedule Payments Could Be Better Targeted. General Accounting Office. July 17, 2000. (GAO/HEHS-00-115).

[12] *Emergency Medical Services: Agenda for the Future*. National Highway Traffic Safety Administration. Health Resources and Services Administration, Maternal and Child Health Bureau.

Rural Ambulance Services in Minnesota: System Overview

In Minnesota, the Emergency Medical Services Regulatory Board (EMSRB or Board) was established by the Minnesota Legislature in 1995 and began operations on July 1, 1996. Prior to 1996, the Minnesota Department of Health was in charge of EMS oversight and administration. The EMSRB was created largely through the efforts of Minnesota's ambulance providers who lobbied the Legislature to create an independent board for the purpose of focusing on EMS issues. Minnesota is among a handful of states with an independent EMS agency and has served as a model for other states (e.g., Kentucky) that have developed a similar structure. The EMSRB is responsible for regulation, policy development and grant support for EMS in Minnesota.

Scope of Practice and Authority

The scope, authority, and organizational structure of Minnesota's EMS system, including ambulance services, are defined in Minnesota Statutes 2002, Chapter 144E. In Minnesota, ambulance service is defined as "transportation and treatment which is rendered or offered to be rendered preliminary to or during transportation to, from, or between health care facilities for ill or injured persons or expectant mothers."[13]

Minnesota's ambulance services are organized at the state, regional, and local level. The EMSRB is the state licensing agency for both ambulance services and ambulance personnel. The Board consists of 15 members (seven of whom must reside outside the seven-county metro area) appointed by the Governor; designees for the Commissioners of Health and Public Safety; and a state representative and senator (the representative and senator have no voting authority). The EMSRB is responsible for reviewing applications and providing advice on state and federal funding; making recommendations to the legislature on improving access, delivery, and the effectiveness of the EMS system; defining primary service areas; establishing procedures for investigating, hearing, and resolving complaints against EMS providers; developing a biennial work plan; and other duties.[14] To carry out these duties, the EMSRB annually receives approximately $5,000,000 in state funding, $100,000 in federal grant funds, and occasional other grant funding as it becomes available. Of these amounts, approximately 27 percent accounts for the agency's operational budget; the remainder is paid out in a variety of grant programs to support EMS.

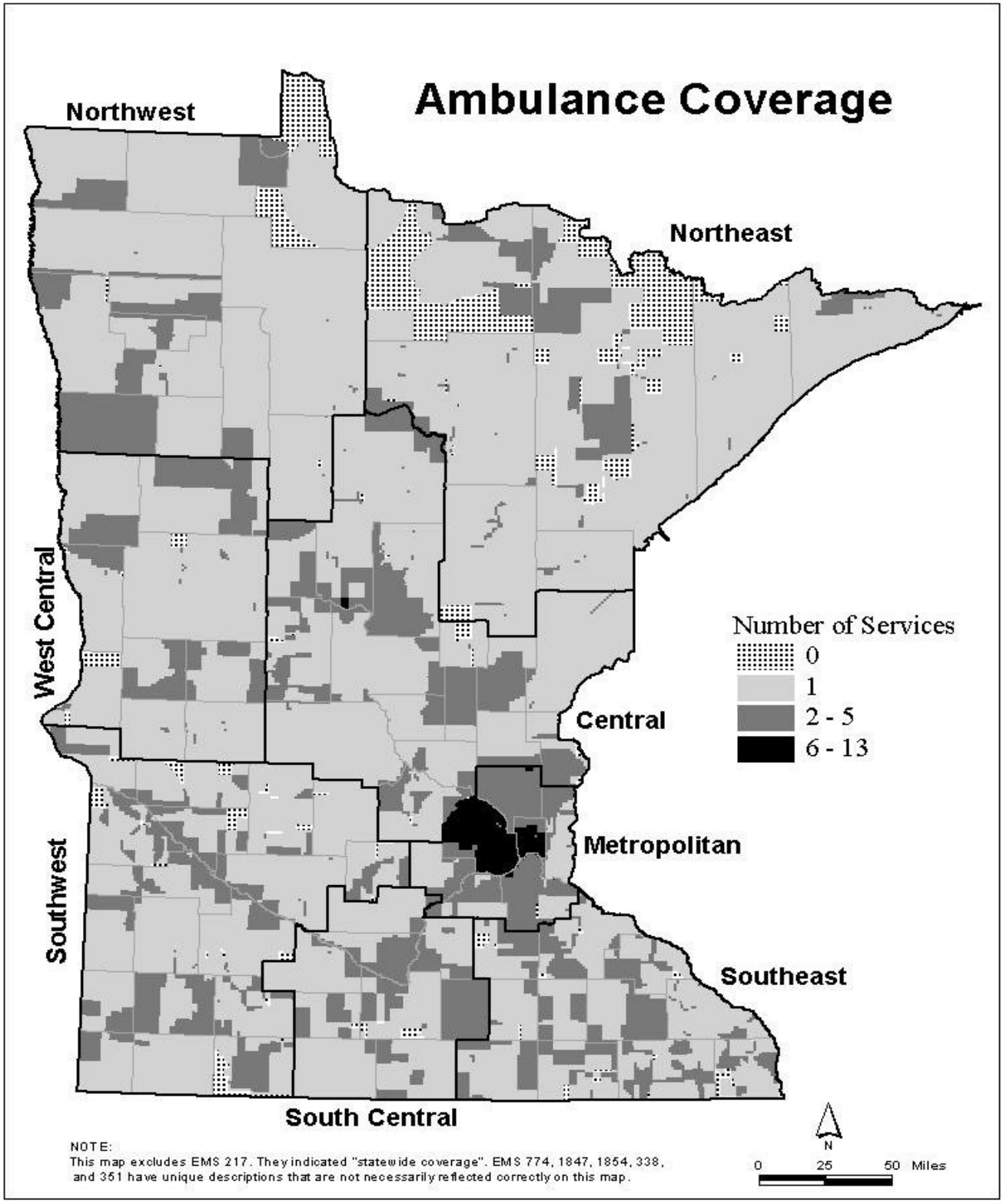
Primary Service Areas

In 2002, there are 310 ambulance licenses, of which 308 are currently held by an ambulance service. See Table 1. (The number of active ambulance services is actually closer to 288, as some services hold more than one license authorizing them to provide different levels of service. See Appendix D.) For purposes of ambulance service coverage, the state is divided into primary service areas (PSAs). Each ambulance service is licensed to serve a specific PSA. According to EMSRB, while there are no geographic areas within the state that do not have ambulance service coverage, several areas of the state are not covered by an official PSA designation at the EMSRB. See Map 1. Although there is some overlap in ambulance services serving a PSA, efforts are continually underway to eliminate this.[15] Ambulance services are licensed to respond to needs within a PSA;

[13] Minnesota Statutes 2002, Section 144E.001, Subdivision. 3.
[14] Minnesota Statutes 2002, Section144E.01.
[15] Minnesota Statutes 2002, Section 144E.101.

however, transportation or care can be provided from one PSA to another, upon the request of a transferring physician, due to medical necessity of the client, and/or if the ambulance service serving the PSA is unavailable to provide services. Emergency medical services response times vary across the state largely due to geographic size of the PSA and logistical issues. In remote areas, it is not unusual for response times to be 30 to 40 minutes greater than in less remote areas.

Map 1



Licensing

Ambulance services are licensed as basic life support (BLS), advanced life support (ALS), part-time advanced life support (ALS-P), and/or specialized life support (which includes air ambulance service). See Table 1. Each license type has different licensing standards and is required to provide differing levels of care; however, there are some standards that are not unique. For example, all ambulance services are required to meet the following:[16]

- Provide services 24 hours per day, every day of the year, unless they are licensed as a part-time advanced life support service or a specialized life support service (typically for transfers only).
- Be staffed with personnel that are certified according to the type of ambulance service being provided, drivers that hold a current driver's license and have attended an emergency vehicle driving course, and have a medical director.
- Have at least one ambulance service provider in the patient compartment when a patient is being transported.
- Provide emergency ambulance services to anyone needing service, regardless of ability to pay.
- Maintain staffing rosters and personnel qualifications information.
- Maintain at least two ambulance service personnel on a written on-call schedule.
- Hold "mutual aid agreements" with at least one other ambulance service indicating that the ambulance service will provide for service coverage during times when the other service is unable to provide services.
- Renew their license every two years.
- Adhere to equipment requirements.[17]
- Provide specific pre-hospital data to the EMSRB.
- Establish and implement written operational procedures.

Each licensing category sets the floor for what is required for that type of service provision; however, ambulance services can elect to provide additional/enhanced services as appropriate. Each ambulance service pays $150 every two years for an initial license and renewal along with $96 every two years for each ambulance. Ambulance service licensing and vehicle fees totaled $60,885 in fiscal year 2002 and were deposited in the state's general fund.

Table 1 summarizes staffing requirements by ambulance service type and the number of current licenses for each ambulance service type in Minnesota.

An on-call schedule must be maintained by each service, with at least two qualified personnel on-call at all times. When transporting a patient from one hospital to another, a physician, registered nurse, or physician assistant trained in ambulance protocols can be substituted for one ambulance staff person.

[16] Minnesota Statutes 2002, Section 144E.101.
[17] Minnesota Statues 2002, Section 144E.103.

Table 1: Staffing Requirements and Number of Current Licenses By Ambulance Service Type		
Ambulance Service Type	**Description of Staffing**	**Number of Licenses in State**
Basic Life Support (BLS)	Staffed with 2 EMTs.[18]	199
Advanced Life Support (ALS)	Staffed with 1 EMT and 1 EMT-P.[19]	72
Part-time Advanced Life Support (ALS-P)	Same staffing as ALS and BLS but provides ALS services part of the day and BLS the remainder.	7
Specialized Life Support (BLS-S or ALS-S)	Same staffing as ALS but restricted to operate less than 24 hours per day and/or serve designated segments of the population, certain medical conditions, or air ambulance service.	21
Air Ambulance (rotor wing or fixed wing)	Staffing based on type of service provided, regulated by the Federal Aviation Administration and the Minnesota Department of Transportation.	9
License is Currently Unallocated or Expired		2

Source: Minnesota Statutes 2002, 144E.101 and EMSRB.

In addition, all ambulances must be equipped with the following: oxygen; equipment for airway maintenance, splinting, and determining vital signs; dressings, bandages, and bandaging equipment; an emergency obstetric kit; stretcher; defibrillator, and a fire extinguisher. Advanced life support units must carry drugs and drug administration equipment and supplies.

Local units of government have the authority to establish additional standards/requirements for their ambulance services, if approved by the EMSRB based on criteria outlined in statute. Currently, the only unit of government that has enacted such an ordinance is Hennepin County. This county-wide ordinance requires that ambulance services operating within county boundaries staff ALS rigs with a minimum of two EMT-Paramedics (rather than the one EMT-B and one EMT-Paramedic required by state law) and contains other requirements pertaining to response times and data reporting as well.

Examples of Services Provided by BLS and ALS Ambulance Services

Basic Life Support (BLS)

A Basic Life Support (BLS) licensee has ambulances staffed by at least two EMT-Basic personnel. The function of a BLS ambulance is to provide a basic level of patient care so as to assure that:

- Life threatening situations and potentially serious injuries are recognized
- Patients are protected from additional hazards

[18] A registered nurse (RN) or physician assistant (PA) with skills deemed equivalent by the EMSRB can serve as one of the two EMTs. Also, temporary staffing variances may be granted for up to one year if the ambulance service can demonstrate a hardship. If a variance is granted, the ambulance may operate with one EMT and one first responder.

[19] An RN or PA who is an EMT and passed the practical skills component of the EMT-P exam may serve as the EMT-P.

- Basic treatment to reduce the seriousness of emergency situations is provided
- Patients are transported to an appropriate medical facility for treatment

A BLS ambulance is equipped with all the necessary equipment to carry out the above functions, and in addition provides airway management, automatic external defibrillation, and under authority of the licensee's medical director may provide medical anti-shock trousers and start intravenous infusion for fluid volume replacement (salt, sugar, and electrolyte solutions). In 2002, a requirement for all ambulances to be equipped with epinephrine pens was implemented, as required by the legislature. At the time of publication of this report, implementation of this requirement was nearly complete statewide, including training for ambulance staff on use of the epi pen. Additionally, with a variance granted by the EMSRB, the licensee may provide additional basic medications such as nebulizers, nitroglycerine pills, and glucagon for the alleviation of diabetic symptoms.

Advanced Life Support (ALS)

An Advanced Life Support (ALS) licensee is staffed by at least two persons: 1) one EMT-B and one EMT-P; 2) one EMT and one practicing registered nurse who is an EMT with demonstrated paramedic skills; or 3) one EMT and one physician assistant who is an EMT with demonstrated paramedic skills. An ALS ambulance is equipped and provides basic life support as stated above, and provides advanced airway management such as intubation, manual defibrillation, and administration of intravenous fluids and pharmaceuticals (medications). Additional equipment and advanced medical procedures may be provided as authorized by the medical control physicians for the ALS licensee.

A newer variation of the ALS licensure level in Minnesota is now the option for a *Part-time ALS* license. This level of licensure enables an ambulance service to acquire an ALS license and provide this level of care with EMT-Paramedics on an on-call, as available basis. This option is a great asset to smaller community ambulance services in Greater Minnesota, where the expense of full time ALS capability is beyond the capacity of the local BLS ambulance service.

Specialized License

A variation in the BLS and ALS licensure levels in Minnesota is a type of license called "specialized." This type of license permits time-sensitive, scheduled ambulance service, not dispatched by 911 emergency centers. This type of BLS and ALS license includes, for example, inter-facility transfers and other medical transportation service for patients authorized by physicians and hospitals. Air ambulance services, including fixed-wing and helicopter, are licensed as "specialized" ambulance services, in order to distinguish their availability on a less than 24-hour a day basis. For example, helicopter air ambulance services are not dispatched by 911 emergency centers as primary, "first out" ambulance response. Too many factors, such as weather, limit their response capability in some emergency situations.

Intercepts

Sometimes it is necessary for one ambulance service to coordinate with another ambulance service in order to provide care to patients. Examples of this include an ALS or BLS provider seeking assistance from an air ambulance or an ALS service intercepting a patient on a BLS run. Intercepts occur for many reasons, for example:

- a patient needs a different level of care than what can be provided by the initial ambulance service,
- more highly trained staff are needed on the transporting vehicle,
- travel distance issues, and/or
- a long ambulance run is needed and the initial ambulance cannot be away from its originating

community for an extended period of time because no other ambulance is available.

When an intercept occurs patients and/or staff may move from one vehicle to another. In some instances the ambulance services swap vehicles so the patient does not need to be moved.

Ambulance Service Staffing, Education and Certification

EMSRB licenses ambulance services and certifies all ambulance personnel in Minnesota. There are four levels of certification for EMS personnel in Minnesota: first responder, EMT-B (basic), EMT-I (intermediate) and EMT-P (paramedic).

First Responders

First responders require the smallest amount of training of the four categories of EMS personnel. First responders are not licensed providers but may voluntarily register with the EMSRB. In Minnesota, 19,243 first responders have been registered since 1997.[20] As of August 2002, 15,482 first responders are registered with the EMSRB. The First Responder Program is a 40-hour course intended to provide a basic understanding of human body systems and lifesaving emergency care procedures. This program is designed for use by individuals such as fire service or industrial and law enforcement personnel and other volunteers who may be the first person to arrive at the scene of a medical emergency but who do not provide emergency medical services as their main job duty. First responders, like all EMS personnel, must renew their registration every two years by completing a 16-hour EMSRB-approved training program.

EMT-B

The majority of active licensed EMS ambulance personnel in Minnesota are EMT-Bs (emergency medical technician basic). In Minnesota, 10,472 EMT-Bs have been certified by the EMSRB since 1997.[21] As of August 2002, 9,558 EMT-Bs are certified. EMT-Bs receive general training in all areas of human body systems and learn about pre-hospital care for a variety of life threatening conditions. The EMT-B course requires a minimum of 110 hours of classroom and skills instruction plus ten hours of clinical observation in a hospital or pre-hospital setting.

EMT-Bs wishing to renew their certification have two options: either a 24-hour refresher course through an approved training program or 48 hours of continuing education in the EMT-Basic curriculum, plus renewed CPR certification and a practical exam at an EMSRB-approved training program.[22]

The EMT-B functions in the prehospital setting in three key areas:

- Controlling life-threatening situations, including maintaining an open airway, providing artificial ventilation to sustain life, controlling severe bleeding, and treating shock. In Minnesota, the EMT-B is also taught the use of an automatic external defibrillator to help patients in cardiac arrest, how to start intravenous lines for the use of certain fluids other than medications (e.g. saline and sugar solutions), and may, as an attendant for a licensed ambulance service with a proper variance, administer certain basic medications (epinephrine auto-injectors, nebulizers, nitro pills, and glucagon).

[20] *EMSRB Certification Statistics: 1997-2001*. Emergency Medical Services Regulatory Board.
[21] Ibid.
[22] Teske, Debra. Emergency Medical Services Regulatory Board Education Specialist. Personal Communication

- Stabilizing non-life threatening situations, including dressing and bandaging wounds, splinting injured extremities, delivering and caring for infants, and dealing with stressful situations encountered by the patient, family members, neighbors, and fellow workers.
- Using non-medical skills, including emergency driving, maintaining supplies and equipment in proper working order, using good communication skills, keeping good records and recording data from ambulance runs, radio and telephone communications with emergency rooms, knowing proper extrication techniques, and coping with administrative and legal issues.

EMT-I

An EMT-I, or intermediate, is taught more advanced procedures than an EMT-B but less than a paramedic. This training usually includes greater emphasis on emergency medical services systems, medical/legal considerations, medical terminology, radio and telephone communications, patient assessment, and management of shock. An individual must be certified as an EMT-B before training to become an EMT-I. Intermediate certification requires an additional 52 hours of training beyond basic training; renewal requires 48 hours of continuing education over two years. Students must pass a written and practical exam for certification. In Minnesota, 446 EMT-I's have received certification since 1997.[23] As of August 2002, 270 EMT-I's are certified by the EMSRB.

Paramedic

Paramedics (EMT-P's) receive training at the highest level of pre-hospital advanced life support care. Paramedics have an extensive foundation of knowledge in emergency care. A paramedic can perform advanced interventions of patient care, including starting intravenous lines, administering medications, inserting endotracheal tubes, decompressing the chest cavity, reading electrocardiograms, using manual defibrillators, cardiac pacing, and other advanced patient care techniques approved by emergency physicians.

An individual must be certified as an EMT-B or EMT-I to enroll in the paramedic program. Paramedic training has no set length requirement. Students take courses on the additional skills listed above until the curriculum is finished, with courses lasting from nine months to two years. Some programs give a certificate; others offer a 2-year associate degree.[24] To be certified, students must pass the National Registry Paramedic written and practical examination. In Minnesota, 4,304 paramedics have received certification since 1997.[25] As of August 2002, 1,813 EMT-P's are certified by the EMSRB.

Medical Director

All ambulance services in Minnesota are required to have a medical director; a Minnesota licensed physician with experience in and knowledge of emergency care of acutely ill or traumatized patients, and familiarity with the design and operation of local, regional, and state EMS systems.[26] The medical director is responsible for approving staff training and orientation and equipment purchasing standards that affect patient care; establishing standing orders for pre-hospital care; approving triage, treatment, and transportation protocols; participating in the development and operation of continuous quality improvement programs; establishing procedures for the administration of drugs; and maintaining quality of care based on standards and procedures.

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[23] *EMSRB Certification Statistics: 1997-2001*. Emergency Medical Services Regulatory Board.
[24] Teske, Debra. Emergency Medical Services Regulatory Board Education Specialist. Personal Communication
[25] *EMSRB Certification Statistics: 1997-2001*. Emergency Medical Services Regulatory Board.
[26] Minnesota Statutes 2002, Section 144E.265.

Ambulance Service Director

For most ambulance services, the ambulance service director is responsible for ambulance service operations. The ambulance service director may be paid or volunteer; trained as an EMT-B, EMT-I, EMT-P, or not at all; appointed, elected, or hired; serve one or more ambulance services; and may or may not manage financial operations and billing. Ambulance service directors' roles, responsibilities and employment status vary across the state, and are discussed further in a later section of this report.

Compensation for ambulance service personnel varies widely across the state, with some receiving no direct pay and others receiving some combination of call and/or run pay.

The current EMS system in Minnesota relies heavily on trained and dedicated volunteers, as well as on trained paid personnel. It is vital to this industry that recruitment and retention of personnel be an ongoing effort. This includes not only response personnel, but also physicians for medical direction of EMS systems and resources. Creative and innovative incentives for volunteer ambulance personnel are essential, as is access to timely and proper training and appropriate equipment. Medical directors, particularly in Greater Minnesota, volunteer primarily from the ranks of family practice physicians. Training incentives such as the Minnesota medical director's course and continuing education opportunities are critical to encouraging physician participation in the EMS system.

Ambulance Operations, Support, and Reimbursement

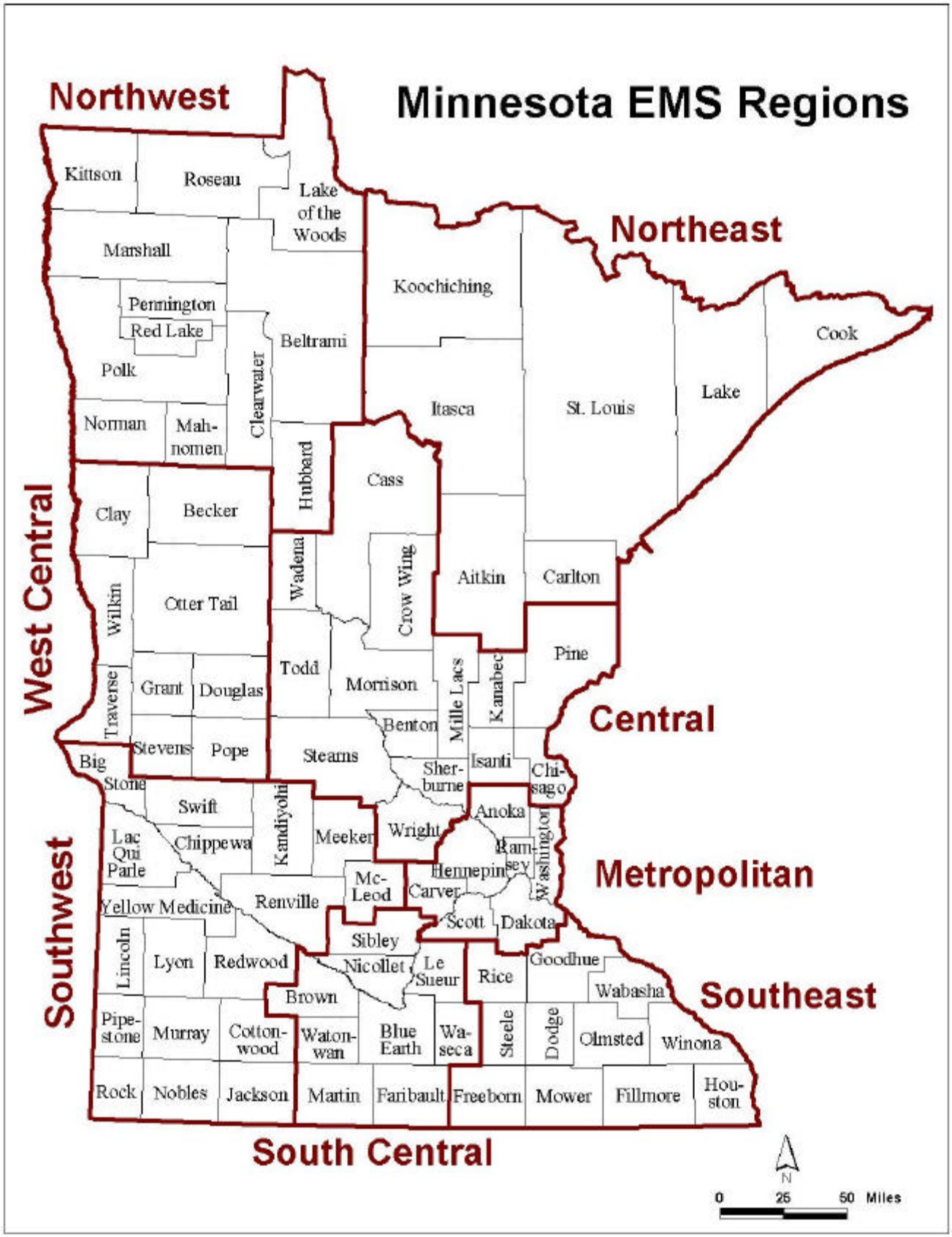
All ambulance services are unique. Each ambulance service operates differently, uses different staffing models, has a different payer mix, and has a differing level of community support. All of these differences affect the financial and workforce viability of ambulance service operations.

To be maximally efficient and cost-effective, an ambulance service needs to be organized around a population center. This provides economies of scale (lower per ambulance run costs because of larger volume), and shorter response times (shorter distances and travel times). These economies of scale are by definition more difficult to realize in rural than in urban areas. In addition, certain fixed costs (staff, equipment and storage) are necessary for all ambulance services, regardless of the number of runs they perform. This means there are few fixed costs that can be cut to improve the efficiency of operations. For rural ambulance services, which are primarily staffed by volunteers, there are even fewer ways to cut costs and increase efficiencies since there are no or few paid staff.

Regional Programs

Minnesota's emergency medical services system is currently divided into eight regions (see Map 2). It should be noted that each regional program has geographic boundaries. These boundaries, established in the 1970's, have not changed over the past 30 years. The regional programs are supported both financially and through technical assistance provided by the EMSRB. Each region receives funding from the Emergency Medical Services Fund through its regional program. They include: Arrowhead EMS Association, Duluth; Central Minnesota EMS Region, St. Cloud; Greater Northwest EMS Program, Bemidji; Metropolitan 911 Board, St. Paul; South Central Minnesota EMS Joint Powers, Mankato; Southeastern Minnesota EMS Joint Powers, Rochester; Southwest Minnesota EMS Corporation, Granite Falls; and West Central Minnesota EMS Corporation, Alexandria. For a description of current regional program emphases, see Appendix H.

Map 2


Minnesota EMS Regions
Northwest
Northeast
West Central
Central
Southwest
Metropolitan
Southeast
South Central
Kittson
Roseau
Lake of the Woods
Marshall
Koochiching
Pennington
Red Lake
Beltrami
Cook
Polk
Clearwater
Itasca
St. Louis
Lake
Norman
Mah-nomen
Hubbard
Cass
Clay
Becker
Wadena
Crow Wing
Aitkin
Carlton
Wilkin
Otter Tail
Todd
Morrison
Mille Lacs
Kanabec
Pine
Traverse
Grant
Douglas
Benton
Stevens
Pope
Stearns
Isanti
Chi-sago
Big Stone
Sher-burne
Swift
Kandiyohi
Anoka
Lac Qui Parle
Chippewa
Meeker
Wright
Ram-sey
Washington
Mc-Leod
Hennepin
Carver
Yellow Medicine
Renville
Scott
Dakota
Sibley
Lincoln
Lyon
Redwood
Nicollet
Le Sueur
Rice
Goodhue
Wabasha
Brown
Pipe-stone
Murray
Cotton-wood
Waton-wan
Blue Earth
Wa-seca
Steele
Dodge
Olmsted
Winona
Rock
Nobles
Jackson
Martin
Faribault
Freeborn
Mower
Fillmore
Hou-ston
N
0
25
50 Miles

Emergency Medical Services (EMS) Fund

The Emergency Medical Services Fund, established in 1985 and administered by the EMSRB, is one key resource that supports ambulance services statewide. As stated in Minnesota Statutes 2002, Section 144E.50 the fund is for the following:

- Promoting systematic, cost-effective delivery of emergency medical care throughout the state;
- Identifying common local, regional, and state emergency medical system needs and providing assistance in addressing those needs;
- Providing discretionary grants for emergency medical service projects with potential regionwide significance;
- Providing for public education about emergency medical care;
- Promoting the exchange of emergency medical care information;
- Ensuring ongoing coordination of regional emergency medical services systems; and
- Establishing and maintaining training standards to ensure consistent quality of emergency medical services throughout the state.

The Emergency Medical Services Fund consists of a state General Fund appropriation of $696,264 per year, 93.3 percent of which is divided among the regions. All eight regions are eligible for an equal portion of those funds. If a region does not apply for funding or applies only for partial funding, remaining funds are disbursed equally to all other regions. In addition, 6.7 percent of the Emergency Medical Services Fund is used by the EMSRB to support region-wide reporting systems and to provide other regional administration and technical assistance.[27]

To obtain state funding, the eight regional programs must support local and regional EMS, with an emphasis on trauma and cardiac care and training. No part of a region's portion of the Emergency Medical Services fund may be used to directly subsidize ambulance service or rescue service operations or to purchase vehicles or vehicle parts for an ambulance or rescue service.[28] Every two years, regional programs (both existing and potential) submit an application of intent to the EMSRB indicating how the funding will be used. For example in southeastern Minnesota, funding is currently being used to support a consortium of medical directors who serve all of the ambulance services in the region. In the Metro Area funding is being used for research and planning purposes. The success of applications is determined by the EMSRB.

The EMSRB requires that some of the Emergency Medical Services fund revenue be used for statewide projects. Recently, the EMSRB completed development of an Internet-based ambulance data collection system, known as MNSTAR (Minnesota State Ambulance Reporting). The regional EMS programs are providing support to ambulance services in their respective regions to assist with statewide implementation. Once all ambulance services are reporting data from their ambulance runs into the database (April 1, 2003 is the date all services will be reporting) the system will allow access to data that has historically not been available on a statewide or regional basis. Policymakers and ambulance personnel will have access to the numbers and types of ambulance calls and what interventions actually improve outcomes for patients. In addition, ambulance services will have immediate access to their own data in a variety of report formats in order to assist with quality assurance and improvement activities. When implemented statewide, the new data system will be capable of producing a vast amount of information that will contribute to future decisions about emergency medical services.

[27] Minnesota Statutes 2002, Section 144E.50, Subdivision 5.
[28] Minnesota Statutes 2002, Section 144E.50, Subdivision 4.

Seat Belt Fine Revenue

Regional programs designated by the EMSRB receive funding from the EMS Relief Account, funded by seat belt fines collected statewide.[29] Ninety percent of the money in the account is distributed to the eight regional EMS programs for personnel education and training, equipment and vehicle purchases, and operational expenses of emergency life support transportation services. Ten percent is distributed to the commissioner of public safety for traffic safety educational programs conducted by state patrol troopers.[30] During the last three years, an average of $1,166,300 per year has been divided among the eight regional programs from fines collected.

Ambulance Service Longevity Award and Incentive Program

A recruitment tool administered by the EMSRB and available to ambulance services is the state Ambulance Service Longevity Award and Incentive Program.[31] This program, started in 1993, provides a one-time payment for volunteer ambulance personnel (ambulance attendants, drivers, service directors, and/or medical directors) who serve a minimum of five years and up to 20 years. A qualifying individual receives credit for each year of service up to 20 years. Each year, the ambulance service director must submit a list of all volunteers in order for each volunteer to earn individual credit.

Annually, the state appropriates and invests $1,000,000 for the purpose of paying operating costs of the longevity program and one-time payments to volunteers upon retirement. The payouts to individuals vary based not only on the retiring volunteer's years of service, but also the number of people earning credits that year, the number of people retiring, the investment earnings and the total amount available. The award is given to the first four hundred persons with the greatest seniority applying during that application year. During the last year, sixty individuals received lump sum awards, which averaged $2,482 each. The number of persons eligible for the retirement award, while growing incrementally each year, remains low because the program is still quite new.

Training Resources

Another state source of ambulance services support includes ambulance personnel training funds, which are available to nonprofit ambulance services for training of volunteers. Each year, $385,000 is allocated from the state General Fund to reimburse ambulance services for training personnel. Up to $450 is reimbursed for the successful completion of a basic course and $225 for a continuing education course. Costs may include transportation, tuition, food, lodging, hourly payment, and other necessities. To accomplish this, an ambulance service pays for the training costs up-front. Once the trained individual has served for one year as an active member of a licensed ambulance service, the ambulance service may request reimbursement from the EMSRB for training costs.

Local Tax Support

Some communities and counties assess a per capita tax for ambulance services. Minnesota Statutes 2002, Section 471.476 allows any political subdivision holding an ambulance service license (except Hennepin County) to levy an annual tax over and above any statutory or charter limitation and may also impose reasonable charges for ambulance services in order to finance the cost of the service. Any city may issue bonds for the acquisition of ambulances and related equipment. Minnesota Statutes 2002, Section 366.011 allows a town or township to impose a reasonable charge for emergency services, including fire, rescue, medical, and related services provided by the town or contracted for by the town.

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[29] Minnesota Statutes 2002, Section 169.686.
[30] Minnesota Statutes 2002, Section 169.686, Subdivision 3.
[31] Minnesota Statutes 2002, Section 144E.40.

Some communities that have assessed an ambulance tax have discovered that such taxes can have unintended consequences. For example, there are some communities that tax their residents and the revenues support not only their residents, but also non-resident visitors and residents of townships outside the city that the ambulance service is responsible for serving. While some communities have created resident and non-resident ambulance fee structures to address this issue, in other areas residents are subsidizing service for non-residents.

In 2002, in an effort to create a more stable funding source for ambulance services, the Minnesota Legislature created a mechanism for local units of government to come together to create emergency medical services special taxing districts[32] around ambulance service boundaries. (The fact that ambulance service areas tend to follow population and not political boundaries has for some ambulance services historically created an obstacle to obtaining local tax support.) Ambulance taxing districts offer several advantages, including spreading ambulance operations costs over an entire PSA, rather than the entire cost falling on the city that owns the service.

Implementation of ambulance taxing districts, however, has proven to be complicated. In order to establish a taxing district, the ambulance service must obtain the approval of all of the jurisdictions involved. In some cases, this could mean lining up support from one or more counties, five or six cities, and 10 to 12 townships. Also, in the few communities where this approach has been considered, the job of informing and gaining the support of the township, city and county boards and councils, and compiling and filing the necessary paperwork has fallen to volunteer ambulance staff. This has proven to be an unmanageable task. A handful of Minnesota communities are exploring the ambulance taxing district option, but no districts have yet been created under the new law, which sunsets in 2007.

Other Local Subsidies

The purchasing of equipment such as ambulances, providing building space, and contributions of time by city or county staff are three other common forms of local subsidies.

For example, in one Minnesota county there are three ambulance services. Each year, the county purchases an ambulance for use by one of the three services, rotating each year. In other areas, ambulance services share building space with fire departments. This sharing of resources decreases costs and, depending on the ambulance location(s) in the community, may also improve response times. Another example of a local subsidy occurs when the city clerk's time is donated to the ambulance service for billing or other administrative functions.

While these types of local subsidy arrangements provide obvious benefit to both the community and the ambulance service, they are often informal in nature; hence their dollar value is not recorded or tracked.

Service Charges

The average base level service charge[33] for the state's BLS and ALS services are $363 and $920 (median of $345 and $760) respectively. ALS service charges are higher due primarily to the advanced level of care offered by these services and the fact that most air-based services are ALS providers. When ALS air-based services are excluded, the average base level charge drops to $725.

BLS base level charges are slightly higher ($15) in urban areas of the state and are more likely to vary by PSA and region. Average charges for ambulances in smaller PSAs are generally lower. ALS base

[32] Minnesota Statutes 2002, Section 144F.01.

[33] Base service charge estimates are reported to the EMSRB by each service at relicensure.

level charges also differ by region. For example, urban ALS services have base level charges that are, on average, $72 higher than rural ALS providers ($776 and $704 respectively).

Billing

Ambulance service billing occurs in many different ways, including through a billing service, through a hospital or city or county office, through an ambulance service directly, or through a corporate administrative office. Billing information is typically collected at the time of service regardless of whether the patient pick-up is at a private residence, nursing home, hospital or other site.

Those patients that do not have insurance are billed directly. In many small towns, if a patient does not pay or indicates he or she cannot pay, the ambulance bill is written off. Larger ambulance services generally have "hardship programs" in place which require the patient to file an application to determine eligibility for reduced or free service. If the patient meets the means test, the bill is either written off, reduced or a payment plan is established. If the patient does not meet the means test, additional attempts to collect payment are made, using collection agencies if necessary.

Revenue Recapture Act

The Revenue Recapture Act, Minnesota Statutes 2002, Section 270A.01-12, is a mechanism that can be used by city or county operated ambulance services to collect unpaid charges for services provided to individuals.[34] The "claimant agency" (ambulance service) submits its claim to the Department of Revenue listing individuals who have unpaid charges. Should the debtor be eligible for a property tax refund or lottery prizes, the debt is deducted from the tax refund or lottery prize and paid to the claimant agency.

Medicare

The federal Medicare program, the program that pays the greatest portion of seniors' health services in the United States, is in transition. Some of this transition is because of the program changes established by the Balanced Budget Act of 1997 (BBA) and the subsequent Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA). Both of these laws affect most areas of health services, including ambulance services. The main EMS-related feature of the BBA was the introduction of a fee schedule for ambulance services. In addition, the BBA also instituted mandatory assignment. Each of these is discussed in the next section of this report. These changes were scheduled to go into effect January 1, 2000; however, implementation was delayed until April 2002.

Pre-Medicare Fee Schedule

Prior to implementation of the Medicare fee schedule, Minnesota's ambulance services were reimbursed by Medicare based on five different geographic base reimbursement rates. These rates were calculated based on average historical charges that occurred between 1965 and 1985. In addition, four levels of care were reimbursed with each level having its own rate:

- Basic life support -- non-emergency (example: nursing home transfer)
- Basic life support – emergency (example: 911 response without a paramedic)
- Advanced life support – non-emergency (example: hospital transfer or high risk nursing home transfer)
- Advanced life support – emergency (example: 911 response with a paramedic)

As a result, 20 different Medicare rates (four levels time five geographic areas) existed for Minnesota ambulance services, depending on the location and type of service provided.

[34] "Debt" is a legal obligation that equals or exceeds $25. Minnesota Statutes 2002, Section 270A.01, Subdivision 5.

Medicare Fee Schedule

On April 1, 2002, the Centers for Medicare and Medicaid Services began implementation of the new Medicare fee schedule. The fee schedule comprises three primary reimbursement components: base rate, mileage, and supplies. All of these will be phased in over a five-year period using four existing but different billing methods.

The base rate has been calculated based on the 1998 number of ambulance runs billed to Medicare and the amount of Medicare dollars spent on those runs nationally; 70 percent of the base rate is adjusted for labor market wage differentials. Instead of the previous four levels of care (as described above) there are now six levels of care, each of which is calculated based on a conversion factor (see below). Changes in the mileage formula have been made so that the rate varies depending on the number of service miles provided and whether the services are provided in a rural or urban area. Finally, all ambulance services are required to accept assignment. Minnesota's Medicare fee schedule rates for 2002 are listed in Table 2.

Table 2: 2002 Medicare Fee Schedule Rates – Minnesota	
National base rate	$170.54 per ambulance run (BLS non-emergency).
Minnesota's labor market differential	0.974 (compared to 0.712 in Puerto Rico and 1.458 in San Francisco)*
Mileage	• 1 – 17 rural miles = 150% of the amount billed up to the fee schedule $5.47 urban rate (up to $8.21/mile) • 18 – 50 rural miles = 125% of the amount billed up to the fee schedule $5.47 urban rate (up to $6.84/mile) • Over 50 miles and all urban = $5.47/mile
Levels of care	Conversion Factor • Basic life support - non-emergency 1.0 • Basic life support – emergency 1.6 • Advanced life support – non-emergency 1.2 • Advanced life support – emergency 1** 1.9 • Advanced life support – emergency 2** 2.75 • Critical care* 3.25
Supplies	Reimbursement will be for the first four years only. Hospitals are not eligible for this portion as their rate already includes the cost of supplies.

*Minnesota has the same factor statewide; this factor applied to the national base rate results in a Minnesota base rate of $167.44. Labor market differentials will be re-calculated every three years. Some states, such as California, have different labor market differentials for different market areas.

**Note: ALS – E1 is a standard 911 paramedic call. ALS – E2 is a 911 call where a high skill level and medical services are provided. Critical care is a transfer involving nurses and specialized monitoring equipment for very serious medical cases.

Most rural volunteer ambulance services currently bill mileage at less than $5.47/mile; therefore, the new formula will benefit ambulance services in the area of mileage. Urban and rural ambulance services with full-time employees (e.g. Rochester, Willmar, Marshall, Mahnomen) currently bill more than $5.47/mile; therefore, they will see a loss in revenue due to this change.

As stated earlier, the new fee schedule will be phased in over the next five years. From April 1, 2002, to December 31, 2002, 80 percent of ambulance services' current rates and 20 percent of the fee schedule amount will be blended. In calendar year 2003, 60 percent of the old rate will be blended with 40 percent of the fee schedule; in calendar year 2004, 40 percent of the old rate will be blended with 60 percent of the fee schedule; in calendar year 2005, 20 percent of the old rate will be blended with 80 percent of the fee schedule, and starting January 1, 2006, the full fee schedule will be in place.

Mandatory Medicare Assignment

"Accepting assignment" means that an ambulance service agrees to accept the Medicare reimbursement it receives for a particular service as payment in full for that service. In the past, Minnesota ambulance services could choose whether or not to accept Medicare assignment (except for hospital-based ambulance services, which are required by Minnesota law to accept assignment). As of April 1, 2002, mandatory Medicare assignment took effect. Now, ambulance services collect 80 percent of the blended rate from Medicare and the remaining 20 percent co-payment (plus any deductible) from the patient. Previously, when Medicare reimbursed for ambulance services, payment was made directly to the patient and the patient was expected to pay the ambulance service. Now Medicare pays its portion directly to the provider and the beneficiary is responsible for paying the provider their 20 percent co-pay (plus any remaining deductible).

Critical Access Hospital-Based Ambulance Services

An additional recent adjustment in Medicare ambulance reimbursement affects ambulance services that are owned and operated by a Critical Access Hospital (CAH). Critical Access Hospitals are a new category of hospital created under the federal Rural Hospital Flexibility Program (Flex Program). If a CAH-owned ambulance service is more than 35 miles from the next nearest ambulance service provider, it receives cost-based reimbursement from Medicare. In Minnesota, there are currently more than forty CAHs. Of these, ten own the local ambulance service. Only one CAH-owned ambulance service, Lakeview Health Center in Baudette, meets the 35-mile criterion for cost-based reimbursement. Several bills pending in Congress would expand this benefit to all CAH-owned ambulance services.

Grants

The Minnesota Flex Program (see previous paragraph) provides opportunities for increased collaboration among hospitals and other entities in the local and regional health system. In many communities (some of them recipients of the Flex grants), hospital emergency medical staff, local ambulance services, and others involved in emergency care are networking to improve emergency medical services in their area. Grants from the Minnesota Flex Program, administered in Minnesota by the Office of Rural Heath and Primary Care, have resulted in innovations in recruitment and retention of volunteers, training, communication between hospitals and local emergency services systems, and infrastructure development. In 2001, five grants totaling $93,000 and in 2002, six grants totaling $71,000 were awarded for EMS-related projects. See Appendix I for summaries of selected projects funded by these grant awards.

In addition to the grants for emergency medical system partnering and improvement, the Office of Rural Health and Primary Care has provided $25,000 for a pilot project involving cross training and recruitment of EMS staff in Moose Lake. (Additional information about cross training of EMS staff to work in other health care facilities can be found in the Case Study section of this report). Grants for EMS communication equipment are also being funded this year. These grants, totaling $25,000, will be awarded to five CAHs to replace or upgrade their emergency medical services communications equipment. Many hospitals have base equipment nearing 25 years of age. Each CAH must provide a matching amount to be eligible for this grant. The Office of Rural Health and Primary Care will be working closely with the EMSRB to identify equipment needs and recommend specific types of equipment to be compatible with local ambulance systems.

Finally, the Office of Rural Health and Primary Care has awarded a total of $75,000 in federal Flex funds to support Comprehensive Advanced Life Support (CALS) training for small rural hospitals. CALS is an educational course developed by a multi-disciplinary working group initiated by the

Minnesota Academy of Family Physicians. The program trains medical personnel (including physicians, mid-level practitioners, nurses, paramedics, and allied health care professionals) in a team approach to anticipate, recognize and treat life-threatening emergencies.

Medicare Intercepts

If an intercept occurs (see definition in Glossary) while transporting a patient, only the ambulance service delivering the patient to the hospital can bill for reimbursement. Many, but not all, ambulance services have established negotiated rates among themselves to assure the originating service receives reimbursement for the care they provided.

Medicaid, MinnesotaCare, and General Assistance Medical Care

The federal government requires that each state cover a set of services through the Medicaid program, including ambulance service. States have the option to cover additional services, such as non-emergency transportation services. Federal regulations do not require Medicaid programs to provide non-emergency transportation. Minnesota includes transportation under Medical Assistance (MA, Minnesota's Medicaid program) as an optional service to facilitate recipients' ability to reach their medical appointments, reducing problems for providers from "no-shows."

Health care for MA recipients is provided under both fee-for-service medical providers and prepaid health plans, depending on the county where the recipient lives and eligibility status.

MA provides reimbursement for three levels of transportation:

1) Common carrier (bus, taxi, etc.)
2) Special transportation (medical van, etc.)
3) Ambulance.

Special transportation can be provided for those persons with physical or mental disability who cannot access common carriers, but do not need ambulance transport. When ambulance transport is required, Medical Assistance can cover the level of ambulance service required, such as BLS, ALS, or air ambulance. Enrollees in Medical Assistance, General Assistance Medical Care, and the MinnesotaCare Expanded Benefit Set are eligible for non-emergency ambulance services. Only clients on MA or the MinnesotaCare Expanded Benefit Set have coverage for Special Transportation services.

In 2000, MA, MinnesotaCare, and General Assistance Medical Care in Minnesota paid nearly $8,500,000 for ambulance services under fee for service arrangements. Only an estimate of Prepaid Medical Assistance, Prepaid MinnesotaCare, and Prepaid General Assistance clients' ambulance trips can be determined from encounter data. Those data indicate that, in 2000, the Prepaid Health Plans covered at least 17,000 ALS trips, over 7,000 BLS trips and approximately 200 air ambulance trips. An estimated 4,000 additional trips were provided; due to data limitations, the service-level break-out of those trips is unknown.

Effective July 1, 2001, the legislature authorized DHS to adopt the Medicare reimbursement rates for ambulance service,[35] or the MA payment rate in effect on July 1, 2000, whichever is greater. Currently, Medical Assistance reimburses based on Medicare's Fee Schedule.

Survey and Case Study Overview

In addition to the overview describing the EMS system, the Rural Ambulance Services Work Group developed a plan to collect both statewide and community-focused data about issues facing ambulance

[35] Minnesota Statutes 2002, Section 256B.0625, Subdivision 17a.

services in the areas of workforce and financial operations. The next section of this report describes the statewide survey. This is followed by the case study findings.

Survey Results & Discussion

Methodology

The Minnesota Ambulance Service Survey was designed to gather information on the ambulance workforce, operations and finances of licensed ambulance services across the state.

The survey collected basic information on the state's ambulance workforce, including:

- the number of ambulance personnel,
- their status as full- or part-time workers, volunteer or paid staff,
- personal characteristics of the staff including age, gender and ability to speak another language, and
- the longevity of staff with their current service.

The survey also collected operations and financial information, including:

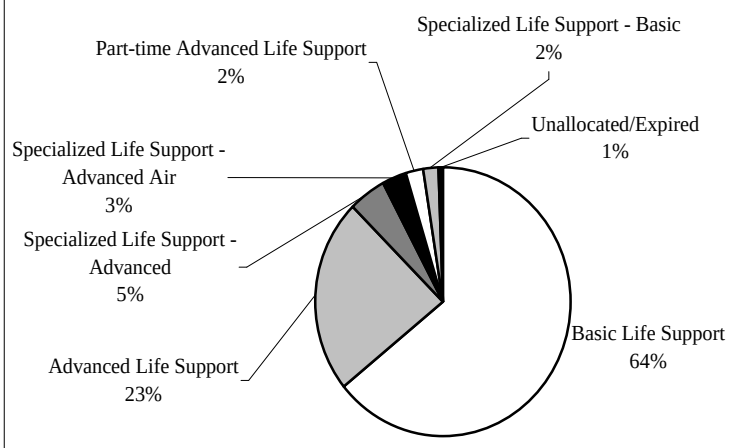
- the number of service runs made,
- charges billed to Medicare,
- total service operating and personnel-related expenses,
- total net revenue and a breakdown of revenue sources, and
- information on the characteristics of a service's ambulance fleet.

The development of a survey to collect this detailed information was initiated in October 2001. With assistance from the Rural Ambulance Services Work Group, a subgroup of the state Rural Health Advisory Committee, other state ambulance service experts, and the response from a short pre-test of the instrument, a final draft of the survey was completed and sent to all services in early January 2002. Extensive follow-up contacts, through phone calls, faxes and additional survey mailings, were completed between February and September 2002. This comprehensive follow-up approach proved to be necessary given the difficulty contacting some of the services. Written correspondence with some services, especially those that are smaller and composed of volunteers, was difficult since most volunteer ambulance directors have other full-time jobs and the services they administer may have no official office space other than a mailbox at city hall.

Background

Before exploring the survey findings it is important to look at some of the basic characteristics of service type, staffing, ownership and location of services in the state. In 2002, there are 310 ambulance licenses in the state of Minnesota. The actual number of services in the state, due to some services having more than one license, is closer to 288.[36] By far the majority (65 percent) of services in the state are basic life support

Figure 1: Minnesota Ambulance Services by Type



Source: EMSRB, 2002

[36] *Emergency Medical Services Regulatory Board Administrative Relicensing Database*. Emergency Medical Services Regulatory Board. 2002.

(BLS) services. The second largest licensee type (23 percent) is advanced life support. See Figure 1 for a breakdown of ambulance services by service type and the glossary for service definitions. A large proportion (75 percent) of services rely solely on volunteers or on a mix of both paid and volunteer staff.[37] See Table 3. Ambulance ownership is more varied across the state. City owned services comprise roughly half of services in the state followed by nonprofit corporations, hospitals, city and county partnerships, for-profit corporations and counties.

Geographic Distribution

Most services (85 percent) are located outside of the state's urbanized areas.[38] Close to 70 percent of rural services are BLS while roughly half of urban services are BLS. The southeast and southwest regions account for one-third of all the state's ambulance services. (See Map 2 on page 15 for EMS regions) The northwest region has the fewest services (7.4 percent). A few services are based outside of Minnesota, but have assigned service areas within the state. This includes three services based in Wisconsin that help to service the southeast and east central regions of Minnesota. In North Dakota, four services based out of Fargo and Grand Forks help to service the northwest region of the state. Roughly 60 percent of ambulance services work within a primary service area (PSA) with fewer than 10,000 people. See Figure 2.

Service Distance

Another important characteristic of the state's ambulance system, which reflects the uneven distribution of services across the state, is the distance some services have to cover to respond to an emergency and transport a patient to treatment. The maximum carry distances vary from as short as two miles for a service in a metropolitan county to as many as 70 miles for a ground-based service in northern Minnesota, with the average maximum distance for the state

Table 3: Ambulance Service Ownership, Staffing and Region of Operations (2002).

Ownership Type	Services	Percent
City	148	47.7%
Non-Profit Corporation	73	23.5%
Hospital	39	12.6%
City/County	19	6.1%
For Profit Corporation	16	5.2%
County	9	2.9%
Federal	3	1.0%
Partnership	1	0.3%
Undefined	2	0.6%
Total	**310**	**100.0%**

Staffing Type	Services	Percent
Volunteer	167	53.9%
Volunteer and Paid	68	21.9%
Paid	72	23.2%
Undefined	3	1.0%
Total	**310**	**100.0%**

Region of Operations	Services by License Type		Total Services	Percent
Northwest	BLS	12		
	ALS	9		
	Other	2	23	7.4%
Northeast	BLS	27		
	ALS	6		
	Other	3	36	11.6%
West Central	BLS	12		
	ALS	8		
	Other	4	24	7.7%
Central	BLS	20		
	ALS	13		
	Other	3	36	11.6%
Metro	BLS	11		
	ALS	20		
	Other	13	44	14.2%
Southwest	BLS	56		
	ALS	4		
	Other	7	67	21.6%
Southeast	BLS	32		
	ALS	9		
	Other	4	45	14.5%
South	BLS	29		
	ALS	3		
	Other	1	33	10.6%
Undefined			2	0.6%
Total			**310**	**100.0%**

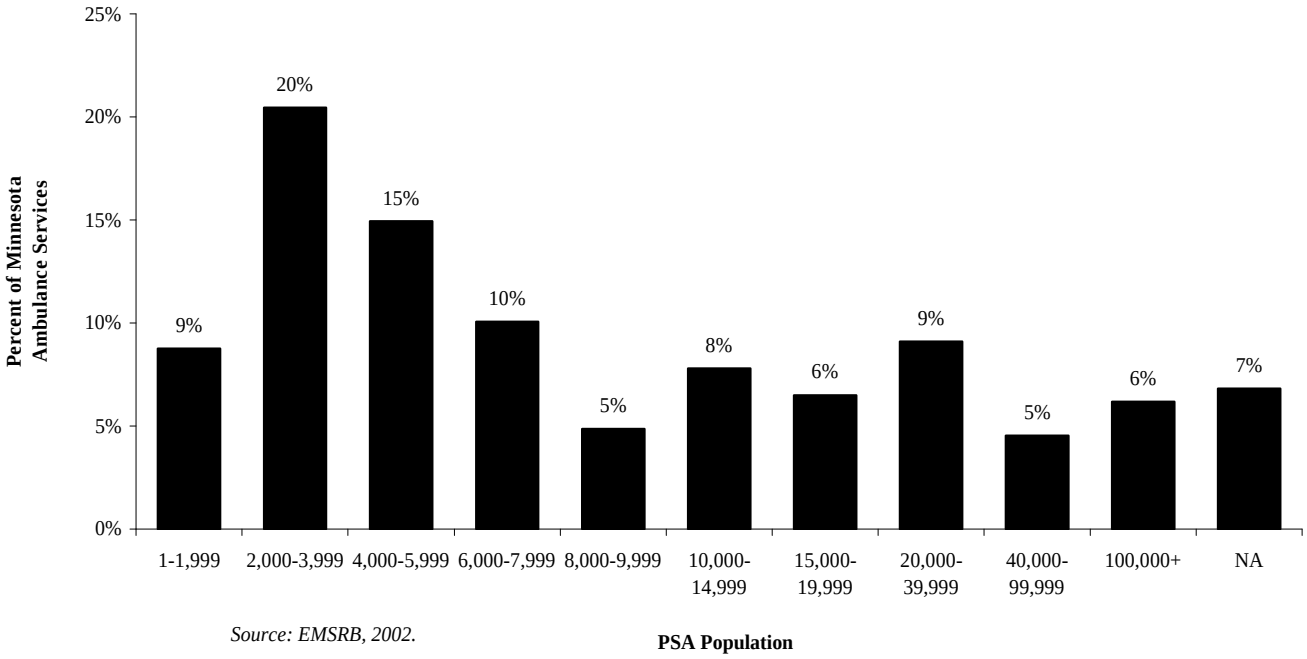
Source: EMSRB, 2002.

[37] Ibid.

[38] Urbanized areas are defined here as those located in the seven county Twin Cities metropolitan area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington); the cities of Duluth, St. Cloud and Rochester; and the metropolitan areas of La Crosse (Wisconsin), Fargo (North Dakota) and Grand Forks (North Dakota) that include portions of Minnesota.

at approximately 20 miles.[39] Generally, ambulance services in the northern regions of the state have longer maximum distances than those in other parts of the state.

Figure 2: Ambulance Services by Primary Service Area (PSA) Population



Source: EMSRB, 2002.

Typical Service

What does this brief profile of Minnesota ambulance services tell us about what the typical service looks like? Based on the licensing data from the EMSRB, the typical Minnesota service is a BLS service that is located outside of the state's urbanized areas, most likely in the southern part of the state. The service is likely municipally owned and is staffed entirely by volunteers who service a primary service area of fewer than 10,000 people. While the picture provided by administrative data is informative, it does not capture important details about ambulance operations, finances and workforce. Findings from the Minnesota Ambulance Service survey help to enhance this basic understanding of the state's services.

Minnesota Ambulance Service Survey Findings

The findings presented in the tables and graphs that follow are based on the responses of 98 percent of ambulance services in the state (all services received the survey). Some services were unable to complete all of the survey questions; especially those relating to service operations and finances, so a proportion of surveys were incomplete. For a more detailed breakdown of response rates by service type and population, ownership and geographic region, see Appendix D at the end of this report. The findings are presented with an emphasis on exploring the differences and similarities between services in different regions of the state.

[39] *Emergency Medical Services Regulatory Board Administrative Relicensing Database.* Emergency Medical Services Regulatory Board. 2002.

Workforce

Minnesota services report 6,983 volunteer and paid personnel on their rosters. Of these, 59 percent are identified as volunteers, 25 percent are full-time paid staff and 16 percent are part-time paid staff.[40] The state's services have, on average, a total roster of 26 personnel (statewide median is 19). BLS services are smaller with an average of 20 personnel; in most cases these are mostly volunteers with one paid staff member. ALS services, the second largest service type, generally have a much larger staff (39 on average) with a paid to volunteer staff ratio of four to one.

Distribution

The overall distribution of staff is somewhat predictable, as services located in Minnesota's rural areas are more likely to have rosters composed primarily of volunteer staff. Ambulance services in the state's urbanized areas tend to have more paid staff as compared to other regions. See Table 4. Urban-based services also tend to have much larger personnel rosters than those in rural areas — an average of 61 (median 44) staff versus 20 (median 18) staff respectively. At the regional level, however, important differences in staffing patterns occur. For example, the three regions that comprise the southern portion of the state (southwest, southeast and south central) had volunteer staffing patterns above the state average. See Table 5.

Table 4: Ambulance Personnel by Operations Area and Region

Area	Services Responding	Total Personnel	Volunteer	Paid Full-time	Paid Part-time	Total
Rural	230	4,533	76.8%	10.4%	12.7%	100.0%
Urban	38	2,303	22.8%	54.1%	23.1%	100.0%
Undefined	3	147				
Not Responding	1					
Total	**272**	**6,983**				
Statewide Statistic			**58.6%**	**25.2%**	**16.2%**	**100.0%**

Region of Operations	Services Responding	Total Personnel	Volunteer	Paid Full-time	Paid Part-time	Total
Northwest	21	470	60.4%	17.2%	22.3%	100.0%
Northeast	33	652	64.3%	21.8%	14.0%	100.0%
West Central	21	388	56.2%	19.1%	24.7%	100.0%
Central	31	741	50.3%	22.7%	27.0%	100.0%
Metro	27	1,944	27.0%	51.9%	21.1%	100.0%
Southwest	60	1,109	91.0%	2.6%	6.4%	100.0%
Southeast	44	953	68.0%	20.6%	11.4%	100.0%
South Central	31	579	91.9%	3.8%	4.3%	100.0%
Undefined	3	147				
Not Responding	1					
Total	**272**	**6,983**				
Statewide Statistic			**58.7%**	**25.1%**	**16.2%**	**100.0%**

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

[40] The survey also asked respondents to identify volunteers based on part- and full-time volunteer status. Based on an analysis of responses it was determined that this part- and full-time distinction was artificial and did not reflect the fact that most volunteers are considered on-call full-time, regardless of their status.

In the south central region, only five services have paid staff (16 percent), a small number compared to other regions of the state. For example, 17 services (55 percent) have paid staff on their roster in the central region. The region with the highest ratio of paid to volunteer staff is the seven county metropolitan with 12 services (44 percent) with all paid staff on their roster. As a ratio of volunteer to paid staff, ambulance services in the southwest (10:1) and south central (11:1) regions have the highest ratio of volunteers to paid staff.

Table 5: Ratio of Volunteer to Paid Ambulance Staff by Region of Operations

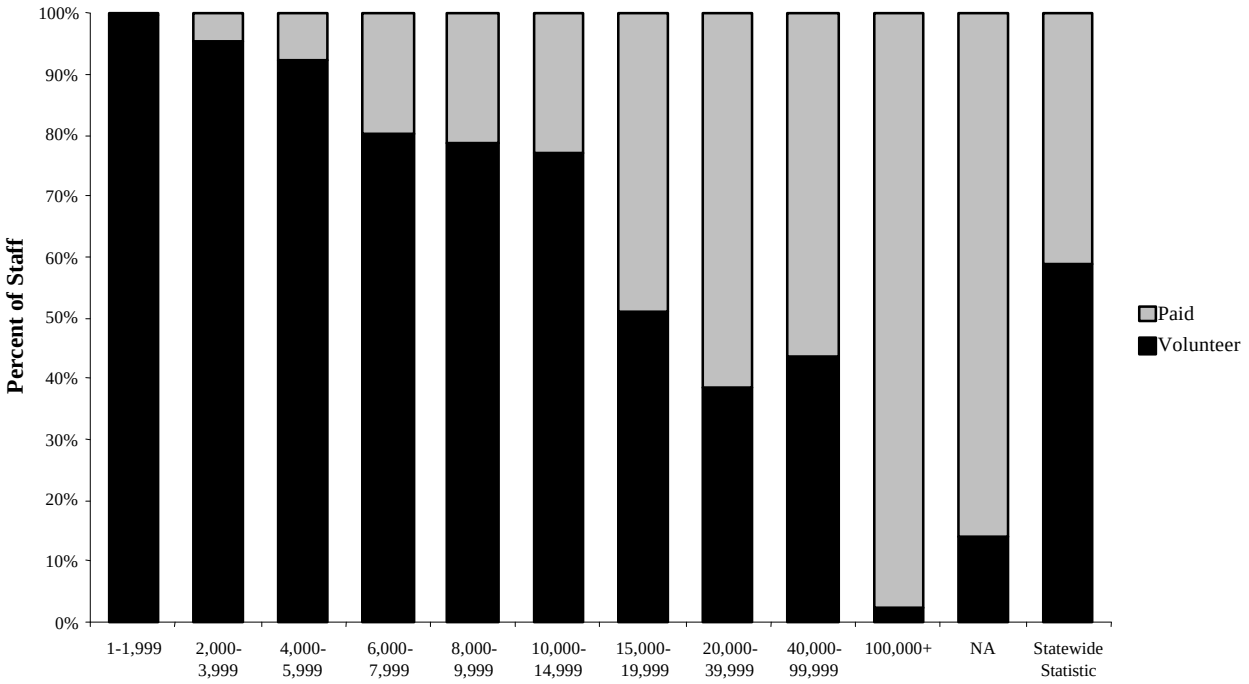
Region of Operations	Volunteer to Paid Staff Ratio	Number of Volunteer Staff (Average)	Number of Paid Staff (Average)
Northwest	1.5	13.5	8.9
Northeast	1.8	12.7	7.1
West Central	1.3	10.4	8.1
Central	1.0	12.0	11.9
Metro	0.4	19.4	52.6
Southwest	10.1	16.8	1.7
Southeast	2.1	14.7	6.9
South Central	11.3	17.2	1.5
Statewide Statistic	**1.4**	**15.0**	**10.6**

N= 268

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

The concentration of volunteers is most evident by ambulance primary service area. See Figure 3. The proportion of volunteers is highest in those services with a PSA below 15,000 residents. Only five of the services with a PSA below 15,000 residents are located in the seven-county Twin Cities metropolitan region. The percent of volunteer staff falls as the PSA population increases. The 11 services in the largest PSA category (100,000 or more residents) have the smallest number of volunteers at only two percent.

Figure 3: Percent of Volunteer and Paid Staff by Primary Service Area Population



NA=Not Available

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; EMSRB, 2002.

Ambulance Staff Characteristics

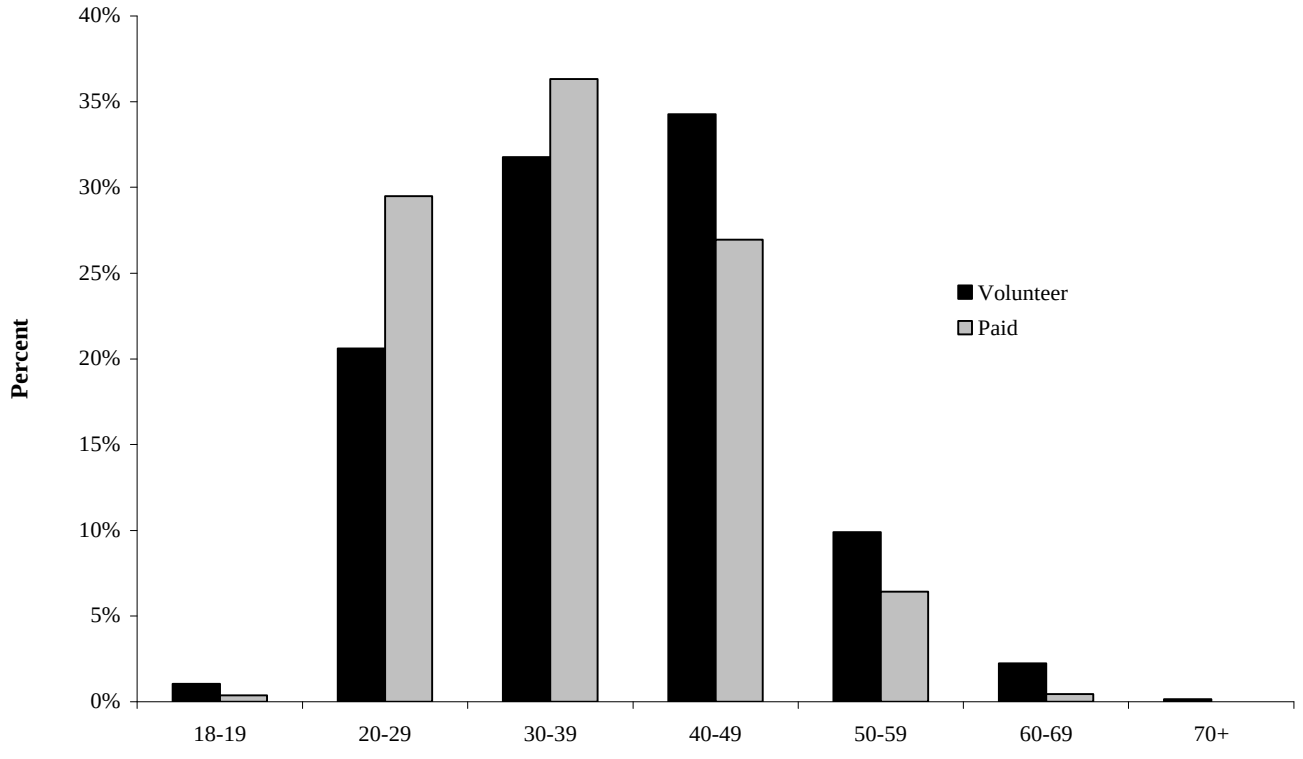
Gender

The survey asked ambulance services to provide basic data on the characteristics of their workforce, including gender, age and service longevity. Survey findings reveal that two-thirds of all ambulance service personnel are male. On average, female personnel comprise a larger proportion of the staff in rural areas (41 percent) compared to urban areas (20 percent) of the state. Most greater Minnesota regions had average or above average proportions of female staff; the proportion of female staff was lowest in the seven-county Twin Cities metropolitan region (19 percent). While men outnumber women, female ambulance workers are more likely to volunteer than their male counterparts — 66 percent of female ambulance personnel are volunteers compared to only 55 percent of men.

Age

Almost all ambulance staff members are between the ages of 20 and 50. See Figure 4. Volunteer personnel tend to be slightly older than paid staff. For example, the percent of volunteer staff over 40 years old is higher than that of paid staff (46 percent versus 34 percent). The same trend is also present between service locations as 45 percent of rural staff are over the age of 40 compared to 34 percent of urban staff. The staff age difference is also discernible in different parts of the state. Services in the northeast region had the highest proportion (52 percent) of staff over the age of 40, while services in the Twin Cities metropolitan region had the lowest proportion (34 percent).

Figure 4: Age Distribution for Volunteer and Paid Staff

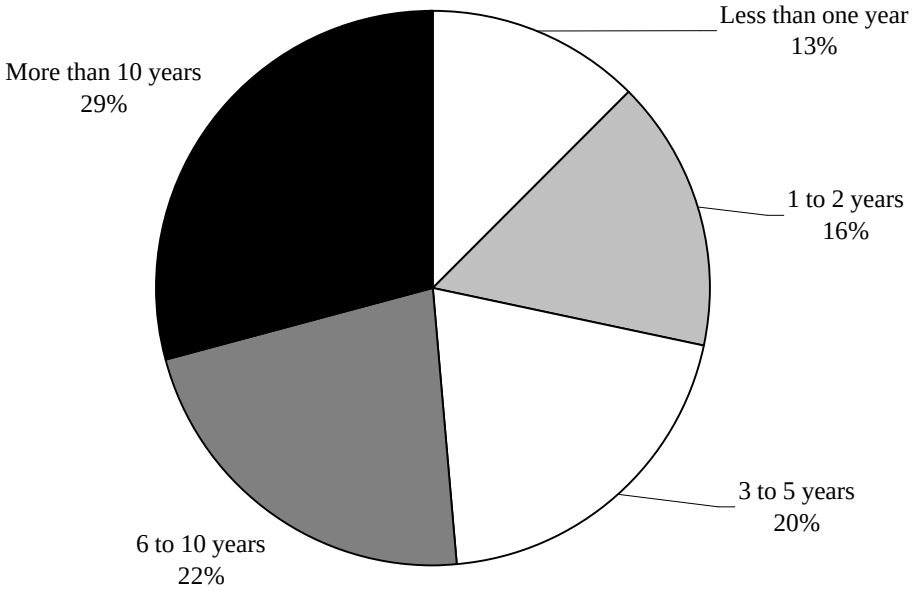


Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

Service Longevity

Almost half of all ambulance personnel have been working for their current service for fewer than five years. See Figure 5. Paid staff tends to have been on the job fewer years than volunteer staff. At the same time, staff at rural services is likely to have been on the job more years than their urban counterparts.

Figure 5: Ambulance Staff Tenure



Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

Language

While the number of Minnesota residents whose first language is one other than English is small (8.5 percent),[41] the migration of people from other countries to Minnesota has increased in the last two decades. The effect of this immigration, especially on the health care delivery system, has been an increased need for translators or staff who are able to communicate in a newcomer's language. According to the survey, the proportion of staff that can speak a language other than English is approximately three percent. Almost all of these individuals speak Spanish. Only a few could speak Somali, Czech, or German or were proficient in sign language and no one was identified as being able to speak Hmong. Those who could speak Spanish were fairly evenly distributed between urban and rural areas of the state.

Ambulance Service Labor Market Conditions

While labor market dynamics for some health care employers are well documented, especially for those employers seeking specific types of professionals like pharmacists, for others no detailed information exists. For ambulance services, the supply and demand data typically used to document labor market conditions is not readily available.

[41] "Profile of Selected Social Characteristics 2000: Minnesota." U.S. Census Bureau. 2002.

Given these difficulties, the survey was designed to gather two types of labor market information. The first type includes an estimate of how many staff were successfully added to the service in the previous year (2001) and which services are currently looking for staff. The second type of information concerns a service's ability to cover operating shifts. This acknowledges the fact that while most services may have a full roster, they may be unable to cover all shifts. This may be the reality of volunteer-based services that have to work around volunteers' work schedules and shift preferences.

Staff Additions and Current Recruitment

Almost three-quarters of all services added staff in 2001. Services report successfully adding 878 staff (13 percent of their total staff) to their rosters during the past year; of these, roughly half were volunteers. Rural areas added the most staff — 70 percent of the total staff added. It is not surprising that, given the distribution of volunteers and paid staff, rural areas added more volunteer staff and urban areas added more paid staff. Thirty-seven percent of the paid staff added were to services in the seven-county metropolitan area. The southwest region added the most volunteers to their rosters (22 percent).

Table 6: Number and Share of Volunteer and Paid Staff Added in 2001 by Region

Region of Operations	Survey Respondents	Volunteer Number	Volunteer Percent	Paid Number	Paid Percent
Northwest	21	15	5%	42	23%
Northeast	34	71	17%	21	9%
West Central	21	31	14%	38	22%
Central	31	57	15%	59	16%
Metro	27	62	12%	141	10%
Southwest	60	109	11%	18	18%
Southeast	43	98	15%	43	14%
South Central	31	54	10%	19	40%
Not Responding	4				
Total	**272**	**497**		**381**	
Statewide Statistic			**12%**		**13%**

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

When added staff are analyzed as a share of current staff an interesting pattern occurs. Services seem to have successfully added paid staff at a higher rate than volunteer staff. See Table 6. For example, the south central region services added 10 percent of their volunteer staff in 2001. By contrast, south central services added 40 percent of their paid staff in 2001. Whether or not these were new additions or simply replacements for staff that left the service is unclear. What these figures do suggest is that staff rosters are not completely stable, requiring an ongoing effort to seek out new recruits or volunteers.

At present, 197 services (74 percent) report trying to add staff to their roster. Of those services, eight out of 10 are services composed entirely of volunteers. More rural services (76 percent) than urban services (59 percent) report trying to add staff. The south central and metro regions had fewer services, on average, seeking new recruits or volunteers. In addition, survey findings reveal that services with smaller primary service area populations, particularly with fewer than 6,000 residents, were more likely to be seeking to add staff at a rate higher than the state average.

Shift Coverage

Shift coverage is a necessity for the successful operation of an ambulance service. When asked if they had difficulty covering shifts, three-quarters of the services indicated that they had some level of difficulty. Sixty-four services reported no difficulty covering shifts. Of those having some level of

difficulty, eight out of ten were services composed entirely of volunteers and over 90 percent were located in rural Minnesota.

The survey did not ask respondents to gauge their level of difficulty when covering shifts, but instead sought to identify which shifts were difficult to cover. In particular, the survey also asked each service to identify what shifts they have difficulty covering and what their top two reasons are for not being able to cover all ambulance shifts. Of those that indicated that their service is having difficulty covering shifts, 83 percent identified the day shift as the one that is difficult to cover. For 25 percent of these services, the day shift was the only shift that was identified. The second most difficult shifts to cover are weekends (58 percent) followed by holidays (46 percent) and nights (20 percent). The percent of services identifying shift problems is much higher in rural areas of the state. See Table 7. For example, 66 percent of rural services have problems covering day shifts while only 38 percent of urban services report the same problem.

Table 7: Difficult Shifts to Fill by Urban and Rural Ambulance Location

Shift	Percent of Urban Services	Percent of Rural Services
Days	37.8%	66.8%
Nights	13.5%	15.7%
Weekend	21.6%	47.6%
Holiday	16.2%	38.0%
	N= 37	N=229

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

When identifying the top reasons for a service's inability to cover shifts, only a small number of urban services responded. Consequently, the responses to this question generally reflect rural services that rely partially or exclusively on volunteer staff. Of the services that responded to the question, 66 percent identified an employment related conflict, either a conflict with a volunteer's work schedule or the distance of that employer from the ambulance base, as hindering their ability to cover shifts. Conflicts with an employer was followed by family and personal conflicts, an inability to attract personnel due to some aspect of the service (e.g., the demands of training), access to child care and characteristics of the local population, such as its setting as a bedroom community or a shrinking small rural town, which hinders the service's ability to attract volunteers.

Workforce Summary

Based on the licensing data and survey findings, what are the workforce challenges that services face? While some services are able to add staff to their roster, the survey findings suggest that staffing shortages do persist. At the same time, many services, especially those located in rural areas of the state, continue to have problems covering shifts. It is important to remember that of those having difficulty covering shifts eight out of ten were for services composed entirely of volunteers and over 90 percent were services located in rural Minnesota. Given the concentration of volunteer-based services in several parts of the state, especially in the southwest and southeast regions of the state, the problem may be more acute in specific regions. Still, how staffing shortages are distributed among services, whether they are systematic or the result of a maldistribution of ambulance personnel, remains unclear.

Operations and Finance

Ambulance services were asked to provide detailed operations and financial information including the number of service runs made and charges billed to Medicare; total operating and personnel-related expenses; total net revenue and a breakdown of revenue sources; and information on characteristics of a service's ambulance fleet. All of the services were able to provide information on the number of

total runs they completed. However, for other operations and finance related questions many services provided little or no response to the survey questionnaire.[42]

The data describe the diversity of the services across the state, from those rural services with small operations and a few annual ambulance runs to much larger regional providers with large operations and many ambulance runs. In the end, given the incomplete nature of the responses, the data fall short of providing a complete picture of the state's ambulance industry. However, the available data does offer some helpful insights; they are included below.

Annual Runs and Vehicle Characteristics

In 2000, the state's ambulance services made a total of 371,944 runs. Of these, 80 percent reported that their runs were billable.[43] On average, services made approximately 1,382 runs, with services based in urban areas having more runs than services based in rural areas — 6,693 and 480 average runs (median 293 and 238) respectively.

Services based in the metropolitan region had greater run volume than those located in other parts of the state. See Table 8. The central region had the second highest average. Services with the fewest average runs include those in the southwest and south central regions that rely heavily on volunteer staffed services. When a service's primary service area is considered, the distribution of the volume of total ambulance runs is as expected; ambulance services in smaller PSAs have, on average, a smaller volume of total runs.

Examining total runs alone can be deceptive because it may suggest that services with lower volumes may not be actively engaged in providing services. One way to address this is by examining volume on a per capita basis (total runs divided by the service's primary service area population). See Figure 6. On a per capita basis, there are no meaningful differences between urban and rural services or between services by primary service area.

Vehicle Characteristics

The vehicles that carry ambulance staff and injured individuals on each of these service runs are, for most services, a major item to purchase. For example, a typical BLS/ALS vehicle (a new Type III, Ford E-450 that is not equipped with medical equipment) costs approximately $90,000.[44] Many additional options are available, depending upon the unique needs of the service. The survey asked services to provide basic information, such as vehicle model year, age of radio, current mileage and ownership status, on a maximum of five vehicles. Only ground-based services replied to this section of the survey.

Almost two-thirds of ambulance services report operating one or two ambulances, with two being the most common configuration. See Table 9. Almost all (95 percent) of the ambulances in the state are owned and only a few are leased. Not surprisingly, services with fewer ambulances had, on average, fewer runs. Most vehicles are from recent model years and 11 percent are identified as pre-1990 models.[45] Analysis of the model year of Minnesota's ambulance fleet shows the median model year as 1996. See Figure 7. On average, ambulances had current mileage of 67,000 miles and half had

[42] Some services that wanted to supply financial information, but could not, had other problems responding to the survey instrument. For example, many services owned by a city or county do not do their own bookkeeping, thereby increasing the time and difficulty completing the form. For a table of response rates to the financial portion of the survey, please see Appendix D at the end of this report.

[43] This figure only includes those services that were able to identify their runs as either billable or non-billable (not just total runs).

[44] Hazelman, Bob. Midwest Emergency Vehicles of St. Paul, Minnesota. Personal Communication.

[45] The model year for an ambulance can be interpreted in two ways. The vehicle may have an original factory model year or a "rebuilt" date. A rebuilt date may be just as important as ambulance services are also able to purchase kits from manufacturers to rebuild their ambulance,

mileage below 53,000 miles. The age of radios in these vehicles ranged from less than one year to 25 years, with the average just slightly over six years. One-fifth of all ambulance radios were over ten years old.[46] Services with radios ten years or older tended to be concentrated in a PSA population of 10,000 or less.

Table 8: Total Annual Runs by Area and Region of Operations

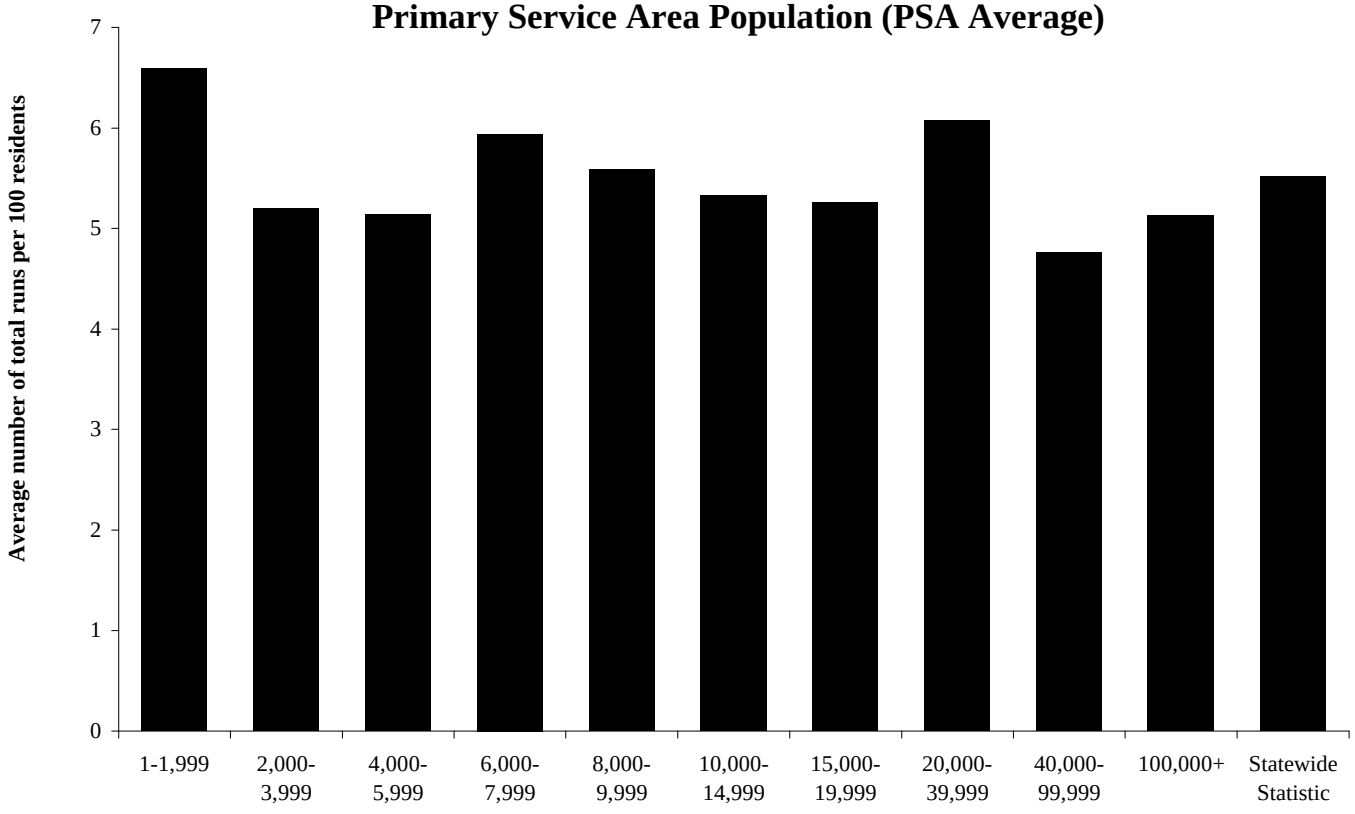
Area	Services Responding	Minimum	Average	Median	Maximum
Rural Area	231	11	480	238	5,790
Rural Service Type					
BLS	186	11	250	177	1,662
ALS	43	300	1,485	1,346	5,790
Other	2				
Rural Ownership Type					
City	125	20	305	165	2,532
City/County	15	76	257	166	1,016
Hospital	26	48	634	422	2,200
Non-profit	45	11	769	326	5,790
Other	19				
Urban Area	39	3	6,693	293	50,001
Not Responding	2				
Statewide Statistic	**272**	**3**	**1,382**	**293**	**50,001**

Region of Operations	Services Responding	Minimum	Average	Median	Maximum
Northwest	21	43	677	392	3,909
Northeast	34	11	751	283	11,514
West Central	22	3	924	347	9,000
Central	31	125	1,223	768	7,667
Metro	27	163	7,541	2,000	50,001
Southwest	60	26	262	139	1,700
Southeast	44	25	997	237	14,603
South Central	31	20	346	178	3,328
Not Responding	2				
Statewide Statistic	**272**	**3**	**1,382**	**293**	**50,001**

Note: Total annual runs per service generally begin at 20. Services with fewer than 20 annual runs are specialized service providers.
Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

[46] For an assessment of the state's EMS communications system, please see "Emergency Medical Services Radio Communications Need Assessment Report." Arrowhead Emergency Medical Services Association. 2001.

Figure 6: Per Capita Ambulance Runs by Primary Service Area Population (PSA Average)



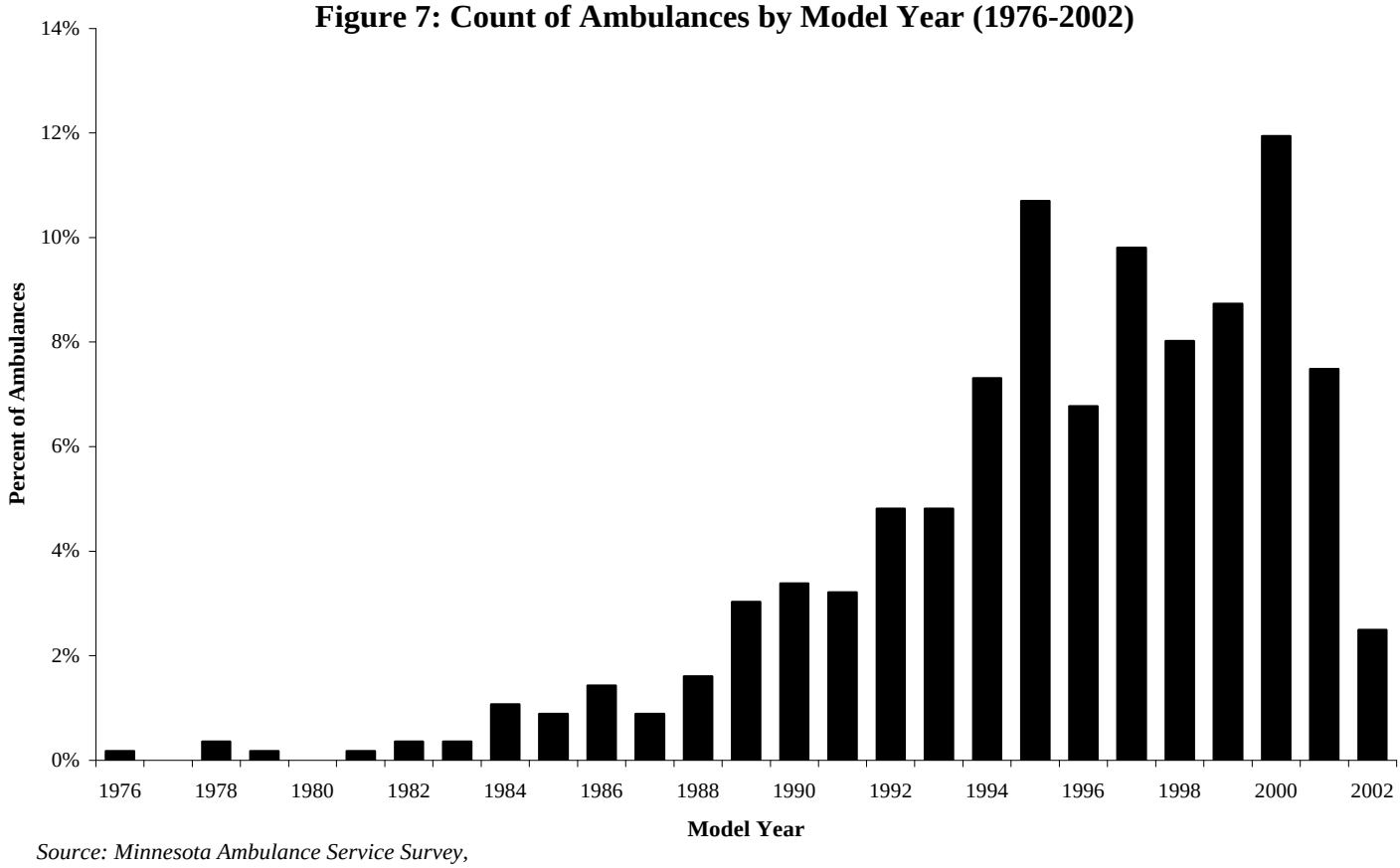
Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; EMSRB, 2002.

Table 9: Ambulances per Service

Number of Ambulances	Services Responding	Percent
One	69	25%
Two	103	38%
Three	39	14%
Four	11	4%
Five or more	25	9%
Not Responding	25	9%
Total	**272**	**100%**

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

Figure 7: Count of Ambulances by Model Year (1976-2002)



Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

Expenditures and Revenue Sources

Ambulance services provided financial data on total operating expenses, personnel expenses and revenue sources. The survey asked respondents to provide an estimate of annual net revenue for their service. However, based on an analysis of the data provided for this question it was concluded that not all services interpreted this question in the same way. Many services provided total net revenue (revenue minus operating expenses) while other services provided gross revenue. Due to these significant differences in how services responded, revenue data is not used in this report. Nevertheless an estimate of how much an ambulance operations cost can be derived from the survey by using total operating expenses in the absence of revenue data.

Annual Operating Expenses

Ambulance services were asked to provide an estimate of actual annual operating expenses, including personnel, facilities and equipment, and general and administrative expenses. Close to one-quarter of all services did not provide an estimate of operating expenses. Since there are differences in ambulance service capacity, expenses related to operations vary broadly. Some services, especially those owned by a city, providing low expense estimates likely did not include in-kind support (e.g., insurance coverage and bookkeeping services) in their response. The average ambulance service reported an operating expense of $652,000 in 2000.[47] Since reported expenses range between $1,000 and $35.9 million, it is also important to examine median (50th percentile) operating expenses. The

[47] Air-based services were excluded since their per-run operating expenses are considerably higher than ground-based services.

median expense for 2000 ($107,000) was far less than the state average and is a much better expense measure of a typical Minnesota service. See Table 10.

Table 10: Total Operating Expenses by Area and Region of Operations

Area	Services Responding	Average	Median	Minimum	Maximum
Rural Area	173	$211,000	$92,000	$1,000	$1,777,000
Rural Service Type					
BLS	136	$87,000	$64,000		
ALS	35	$698,000	$618,000		
Other	2				
Rural Ownership Type					
City	97	$133,000	$57,000		
City/County	10	$190,000	$51,000		
Hospital	18	$258,000	$166,000		
Non-profit	36	$326,000	$194,000		
Other	12				
Urban Area	22	$4,123,000	$1,238,000	$13,000	$35,940,000
Not Responding	77				
Total	**272**	**$652,000**	**$107,000**	**$1,000**	**$35,940,000**

Region of Operations	Services Responding	Average	Median	Minimum	Maximum
Northwest	16	$330,000	$234,000	$23,000	$1,552,000
Northeast	23	$464,000	$97,000	$5,000	$4,726,000
West Central	15	$229,000	$200,000	$30,000	$675,000
Central	26	$498,000	$205,000	$21,000	$3,050,000
Metro	18	$4,311,000	$936,000	$13,000	$35,940,000
Southwest	42	$93,000	$43,000	$9,000	$757,000
Southeast	33	$312,000	$84,000	$19,000	$3,788,000
South Central	22	$140,000	$58,000	$1,000	$1,303,000
Not Responding	77				
Total	**272**	**$652,000**	**$107,000**	**$1,000**	**$35,940,000**

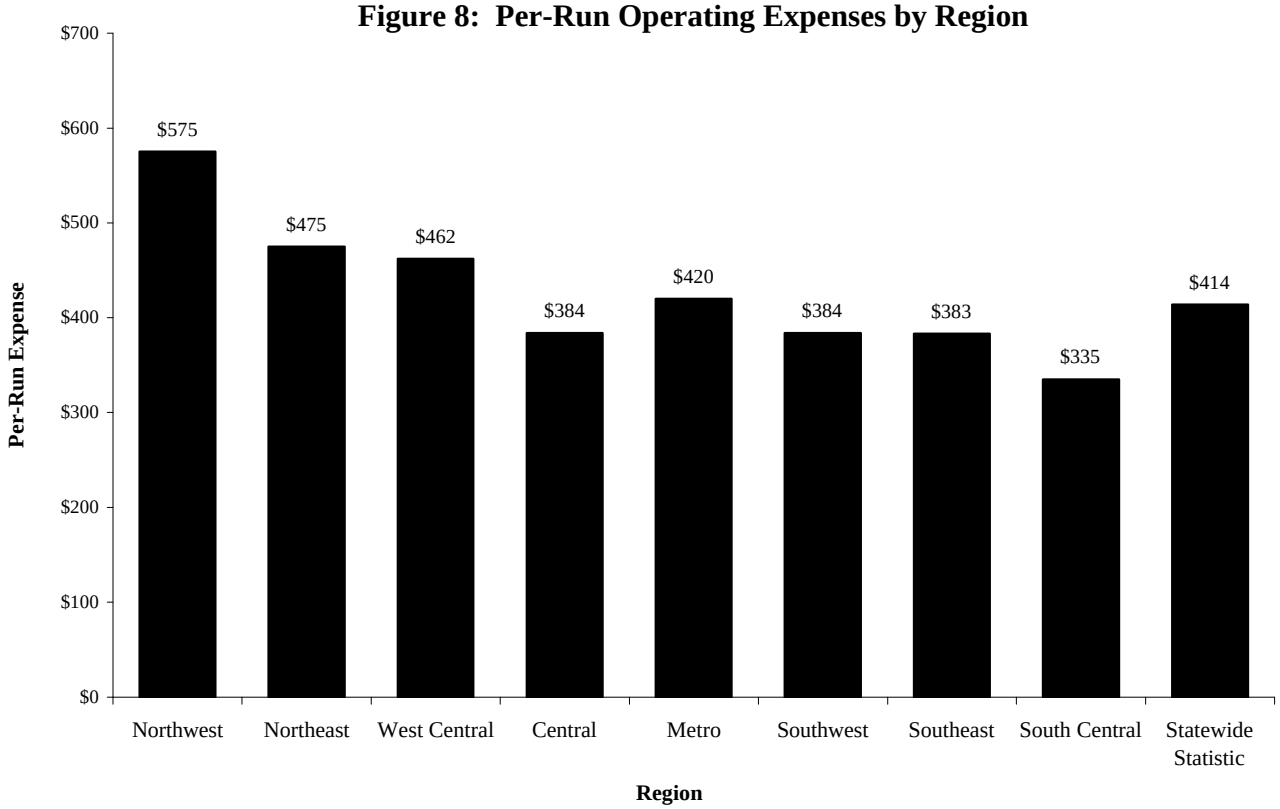
Note: Expenses have been rounded to the nearest $1,000. Air-based services were excluded since their per-run operating expenses are considerably higher than ground-based services.
Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

Services located in urban areas spent, on average, close to 20 times more than services located in rural areas. At the regional level, services located in the southwest region had the smallest median expenses at $43,000, while services based in the Twin Cities metropolitan region had the highest at $936,000. BLS services had median operating expenses of $66,000 compared to almost $713,000 for ALS services.

In order to compare services to the same standard, given the wide variance in expenses between services, expenses are examined on a per run basis (total runs divided by the service's total operating expenses). Urban services generally had average run expenses that were slightly higher than rural services — a median expense of $371 for rural areas compared to $379 for urban areas. Per-run expenses were lowest in the three southern regions of the state and highest in the northern parts of the state. See Figure 8. The differential in expenses may be partially explained by ambulance service density across the state. There are far more services in the south, which may reflect lower operating costs due to smaller distances to travel. Some operating costs, such as fuel, may cost more in the northern part of the state and, when combined with greater distances to travel, contribute to the higher average per-run expenses.

The operating costs associated with the type of services, either BLS or ALS, are also important to consider as some services in the state consider the option of becoming an ALS provider. According to the survey findings, the average cost per-run for an ALS patient transport is $149 more than the average BLS transport — $375 for an average BLS transport versus $524 for ALS.

Figure 8: Per-Run Operating Expenses by Region



Note: Air-based services were excluded since their per-run operating expenses are considerably higher than ground-based services.
Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

Personnel Expenses

Survey respondents were also asked to provide detailed information pertaining to personnel expenditures, specifically salaries, travel expenditures, benefits, training and other personnel expenses. Personnel expenses, on average, account for roughly 60 percent of services' total operating expenditures. This rate is slightly higher for urban services. The proportional share of personnel expenses did not vary greatly between regions; only the Twin Cities metropolitan region (68 percent)

and central region (67 percent) have rates well above the state average.

Salary expenses are typically the largest proportion of a service's personnel expenditures. On average, salaries accounted for 69 percent of personnel expenditures — services in urban areas have a slightly higher proportion allocated to salaries and benefits than rural services. Most volunteer-based services (60 percent) also offer wages to their staff. At present, a volunteer can be paid a maximum of $3,000 per year and still be technically considered a volunteer. How services pay their volunteer staff differs widely. Some pay volunteers an hourly wage while other services may pay their staff on a per-run basis. Some services offer a combination of wages and employment benefits; typically the benefits are money invested in a retirement pension account. Funds directed to employee benefits averaged close to nine percent of a service's total personnel expenses.

Training

Education and training was the second largest average expenditure at 15 percent of a service's total personnel expenditures. Compared to those in urban areas, services located in rural areas of the state tended to have a higher proportion of their total personnel expenditures going towards education and training expenses — eight percent in urban areas and 16 percent in rural areas respectively. For the health and safety of a service's population and staff, a service must devote time and resources to keeping all of their ambulance personnel current on all procedures. After becoming a certified provider, ambulance personnel are required to maintain a high level of skill through refresher courses and skill training.

The remaining five percent of a service's personnel budget consisted, on average, of costs associated with travel and a wide variety of service specific miscellaneous expenses such as clothing, meals, and drug test kits.

Revenue Sources and Service Subsidies

Where does the revenue come from to pay for a service's operating costs? The survey listed five common sources of ambulance revenue and asked each service to identify the proportion of total revenue received from each source. See Figure 9.

- Services had an average of close to 40 percent of total revenue in 2000 from Medicare reimbursement.

- Insurance coverage, from an HMO or other provider, is second and accounts for 28 percent of all revenue on average.

- Of the other three sources, private pay or self-pay was the next largest average at 15 percent, followed by Medical Assistance and GAMC/MNCare (8 percent) and contract services (3 percent).[48]

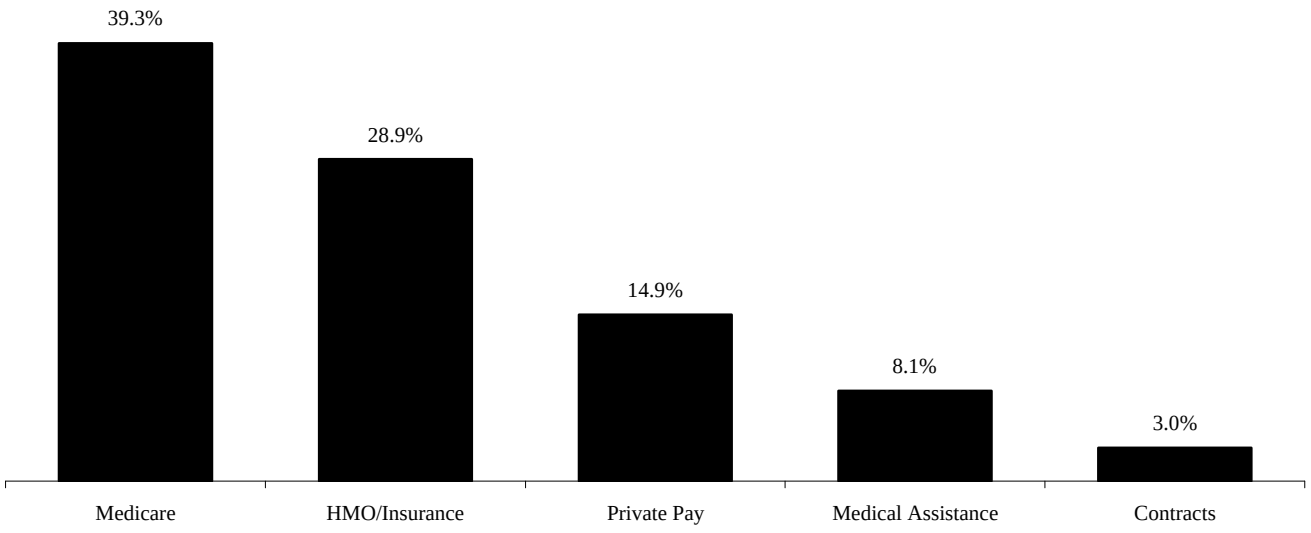
There are several notable geographical differences for revenue sources within the state. In particular, Medicare reimbursement tends to play a more important role in the revenue picture of rural services where it, on average, accounts for 41 percent of revenue compared to 31 percent for urban services. By contrast, the average proportion of revenue from private pay and Medical Assistance is slightly higher for urban services. In addition, services in several regions, including the northwest, southwest,

[48] It should be noted that due to question wording, some of the revenue summarized for HMOs likely includes payments from Medical Assistance. That would alter the percent of revenue from each of these sources.

west-central and central regions, reported Medicare as a source of revenue at a higher rate than the state average.

Funding generated from other sources, including grants, training reimbursements, public subsidies, and interest dividends from pension investments, also support service operations. Roughly 60 percent of the services that responded to the financial portion of the survey identified additional revenue from these sources. Most services identified public subsidies (e.g., financial aid from a unit of government like a city) as the principal source for additional revenue. However, it is difficult to determine if a public subsidy is distinct from the five revenue sources listed above. For example, since many services rely on the city and/or county that owns them for bookkeeping services, it may be difficult to identify distinct revenue streams.

Figure 9: Average Proportion of Ambulance Revenue from Five Sources



Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health.

**It should be noted that due to question wording, some of the revenue summarized for HMOs likely includes payments from Medical Assistance. That would alter the percent of revenue from each of these sources.*

Medicare Assignment and Charges

Since the federal Medicare program provides a significant portion of revenue to the state's ambulance services, services were asked two additional questions related to the program. The first asked what percent of an ambulance service's charges were billed to Medicare. The 237 services that responded to this question report an average of roughly half (49 percent) of their charges were billed to Medicare in 2000. Given the importance of Medicare revenue to the state's services and since some services did not respond to this question regarding Medicare charges, the Minnesota Department of Health made a Freedom of Information Act request to the Centers for Medicare and Medicaid Services regional office in Chicago for data pertaining to the state's ambulance services. At the time of printing, no data had been received to incorporate in this report.

Since Medicare is the federal program that pays the greatest portion of seniors' health services its impact is often felt most acutely in terms of geography. According to a national study, "44 percent of their annual revenue in 1998, on average was from Medicare, compared to 37 percent for urban providers."[49] In Minnesota, urban services also proportionately billed Medicare less frequently in 2000 than their rural counterparts — 33 percent for urban services versus 53 percent for rural services. See Table 11. Regions of the state with a higher percentage of elderly residents, such as the southwest and south central regions of the state, generally had a higher proportion of charges billed to Medicare.

Table 11: Percent of Charges Billed to Medicare by Area and Region of Operations

Area	Survey Respondents	Average
Rural Area	196	53.4%
Urban Area	32	33.2%
Not Responding	44	
Total	**272**	**50.5%**

Region of Operations	Survey Respondents	Average
Northwest	16	50.8%
Northeast	29	45.3%
West Central	18	54.5%
Central	28	44.3%
Metro	24	31.9%
Southwest	52	60.6%
Southeast	35	51.9%
South Central	26	55.6%
Not Responding	44	
Total	**272**	**50.5%**

Source: Minnesota Ambulance Service Survey, 2002, Office of Rural Health and Primary Care, Minnesota Department of Health; ESMRB, 2002.

Contrasting the proportion of revenue (see above) with a service's Medicare charges reveals a marked difference. On average, services seem to be charging more to Medicare than they obtain in return as revenue. However, the problem with equating charges to revenue is that it doesn't match the reimbursement procedure that Medicare followed before April 1, 2002. Before that date, payment for services was made from Medicare directly to the patient. The patient was then supposed to pay the ambulance service. This procedure of patient reimbursement may have made it more difficult for services to accurately portray the actual sources of some of their revenue, since many of those who identified charges as private pay may have actually come from Medicare's patient-based reimbursement procedure.

The second Medicare-related survey question asked services if they were ready to accept Medicare assignment. (See Page 21 on Mandatory Medicare Assignment). One third of all services that responded to this question indicated that they were not ready to accept assignment.[50] Almost all of these services were located in rural parts of the state. In addition to those that responded "no" to this question, some services responded "yes" but indicated that they have no choice in accepting the new terms of assignment. How Medicare assignment will affect the operations and finances of the state's ambulance services remains unclear and leads to one of the key findings discussed in the section below.

Operations and Finance Summary

Unlike workforce challenges, the financial and operational challenges ambulances face are not as easy to delineate. The picture provided by the survey findings above reveals an ambulance system that is diverse in capacity and resources. For example, the number of runs services complete in a year ranges

[49] *Ambulance Services: Changes Needed to Improve Medicare Payment Policies and Coverage Decisions.* General Accounting Office. November 15, 2001. (GAO-02-244T)

[50] All hospital-based services were required to accept Medicare assignment before April 1, 2002.

from 3[51] to 50,000, with the median number of runs for the state at 289. The cost of providing ambulance service in the state varies greatly by region and by service. On average, an ambulance run in rural Minnesota costs $415. However, an ambulance run in northwestern Minnesota, where the distance is greater and the operating costs are higher, will cost close to $185 more. Service type is also important to consider as expenses varied widely between BLS and ALS services — median expenses of $66,000 and $684,000 respectively.

In order to provide a total assessment of operating expenses for the state ambulance system, an expense estimate was calculated by using total ambulance runs and several ambulance characteristics, such as service ownership, type and location. This method produces a total operating expense range of $188 to $200 million for all Minnesota services for the year 2000. Since the system contains a large number of services that are staffed almost exclusively by volunteers, a hidden operating cost also exists in terms of staff wages and benefits.[52] Assuming two staff are needed for each 24-hour shift for every day of the year, the annual wage cost for just rural ground-based services is between $28 and $37 million. See Appendix C on Expenses and In-Kind Volunteer Contributions for information on how these estimates were calculated.

The ability to provide a high quality of service remains the greatest concern of ambulance staff and the residents of the communities they serve. Access to revenue to support their operations remains a key to the survival of these services. The gap most ambulance services see between costs and Medicare reimbursement has been magnified by the BBA changes, including mandatory assignment and the Medicare fee schedule. What will the financial status of services be one year after implementation of these changes? Since this survey only provides a snapshot of the current state of ambulance finances it is important that data continue to be collected in order to monitor the financial condition of Minnesota's ambulance services.

One of the conclusions that can be easily drawn from this research is that more accurate data are needed. At present, gauging the impact that important policy changes (like the Medicare fee schedule) will have on the state's ambulance system is not possible with the data that is routinely collected. Addressing important policy questions like "what is the financial condition of the state's ambulance system?" is also not possible. While voluntary specialized surveys, like the kind used to gather data for this report, provide a snapshot of data, they are not a good replacement for a more comprehensive ongoing data collection effort.

Data collected annually through the Minnesota State Auditor's office is an example of one ongoing data collection effort that could be expanded to cover all of the state's services. The auditor's office currently collects two types of information on ambulance services. One set of information is data collected on current expenses and capital outlays for 251 cities that have governmental funds. While this data is useful for examining the change is expenses and capital outlays over time, it is limited since it does delineate expenses or capital outlays by specific ambulance services and it does not provide information on non city-owned services.

The second set of information collected through the Auditor's Office is data for 26 cities and one county that have enterprise funds for their ambulance operations. While this data is severely limited in scope (only 10 percent of all Minnesota services are covered), it does provide an excellent example

[51] Total annual runs per service generally begin at 20. Services with fewer than 20 annual runs are specialized service providers.

[52] "Communities and citizens probably do not realize, on a year-to-year basis, the value EMS volunteer departments provide, and the amount of money they save taxpayers as well as indirectly subsidize the broader health care industry." Gagnon, Paul. EMS Enhancement Study." Connecticut Office of Rural Health, 2001.

of the data elements that would be needed from all of state's services to gauge the financial condition of the EMS system. The sixteen data elements currently collected by the Auditor's Office include:

- Operating revenues.
- Operating expenditures.
- Operating revenue minus operating expenditures.
- Non-operating revenues.
- Non-operating expenditures.
- Total capital outlays.
- Net income.
- Data on property taxes that supplement operating revenues.
- Intergovernmental revenues provided to ambulance operations.
- Transfers from other funds into the ambulance enterprise fund.
- Transfers from ambulance enterprise funds to other funds
- Total capital outlays.
- Borrowing for capital outlays.
- Interest payments on outstanding debt.
- Principal payments on outstanding bonds.
- Principal payments on other long-term debt.
- Depreciation of equipment.

Case Study and Vignettes

Methodology

In an effort to understand and describe the variety of ambulance service operations in Minnesota, a case study approach was developed to supplement information from a statewide survey of ambulance services' workforce and financial situations. The case study involved site visits to three communities, and additional phone interviews with ambulance captains and staff in several more communities.

The site visits included interviews with the ambulance director or captain, a focus group with the EMTs and paramedics including a short written survey of their interests in EMS, and a community focus group. These site visits allowed the gathering of information from divergent sources in the community about ambulance service issues. Based on the findings from the three community sites visits, additional "vignette" interviews were conducted with personnel from other ambulance services to understand the extent of identified issues and to uncover additional issues facing ambulance services in various parts of the state. Vignette interviews were conducted with ambulance personnel from around the state, representing a wide range of ambulance service characteristics. These included personnel from services whose PSAs ranged in size from 200 square miles to over 1,500 square miles, whose staff earned between $0 per run and $2.20 per hour if they worked at the hospital, whose directors earned between $0 and $40,000 annually, who transported mostly local residents to those who transported tourists from remote state and national forest and recreation areas in addition to the local patients. Some are city-owned, some county-owned, some non-profit corporations. Some received support from their communities or counties. Many performed fund-raising activities to help support their operations, from pancake breakfasts to operating a thrift store. Some services were struggling to survive; others were assisting their neighboring communities to provide ambulance service.

A Tale of Three Ambulance Services

The three site visit communities are geographically dispersed throughout the state and represent a variety of types of ambulance operations. Table 12 below summarizes basic characteristics of these communities, such as the population of the community and the size of the ambulance primary service area, the number of annual visitors which might impact the number of ambulance runs on a seasonal basis, and the type of service provided:

Table 12: Characteristics of Case Study Communities

Community	Population	PSA Population	Annual Visitors (est.)	PSA size (square miles)	Type of Service
A	2500	4500	75,000	200	BLS
B	150	1800	1,000	260	BLS
C	1575	7800	10,000	468	ALS

*Source: EMSRB ambulance database, 2002.

Community A, in southern Minnesota, has no hospital in town. There is a satellite clinic of a larger health provider, a nursing home, and the community recently added an assisted living facility. The major employers are a food processing company and a building materials firm. The ambulance service performed about 225 runs last year, with all going outside of their primary service area (PSA) to one of three hospitals. The closest of these is 26.6 miles away. The ambulance squad consists of 18

members, but they feel that 25 members are needed to adequately staff the service. The ambulance director earns $100 per month. For squad members, there is no call pay. Run pay consists of $20 for the first hour and $8 per hour for each additional hour. A typical run lasts 2 to 3 hours. Their billing is handled by a part time bookkeeper employed about 15 hours per month. Turnaround time for claims is from 45 days for commercial insurance to as long as six months for Medicare reimbursement. They estimate that Medicare runs approach 80 percent of their total ambulance runs.

Community B in central Minnesota has no health care other than a part-time clinic (limited hours Monday-Wednesday-Friday), a board and care home, and the ambulance service. The school and board and care are the major employers in the community. Most residents travel to nearby towns for employment. The ambulance service performed about 150 runs last year, and this has increased 12 percent in the last five years. All runs travel outside the PSA to the two closest hospitals, each about 25 miles away. Volunteers get $3 for responding to an ambulance call and $15 if they transport. The ambulance captain receives no extra pay. The ambulance garage is described as "inadequate." The squad is renting off-site storage space and they have no training area. There are no sleeping quarters to help attract volunteers from neighboring communities. They have two ambulance rigs that they try to maintain as a primary vehicle from 8 – 10 years old and a second rig no more than 20 years old. They have 19 people on the ambulance squad and are having difficulty covering shifts, particularly daytime shifts because everyone works outside of town. The ambulance captain estimates that sixty percent of their runs are for Medicare patients. In 2000, Medicare "flatly denied" 11 percent of their Medicare-billed runs. They estimate it takes between four weeks and three months to be reimbursed by most payers, with Medical Assistance having the longest turnaround time.[53] The squad's billing person received 20 hours of training. This service anticipates a 25 percent loss of revenue under the new Medicare fee schedule.

Community C in northern Minnesota has a hospital, which owns the ambulance service as well as a home health agency and a long term care facility. The ambulance service was privately owned until 1990, when it declared bankruptcy. There were about 500 ambulance runs last year, and the service uses three ambulances to perform these runs. These vehicles have mileages of 20,000, 120,000, and 170,000 miles on their odometers. Most transports are to the local hospital, but if more intensive medical services are needed, patients are typically transported between 75 and 110 miles to larger facilities. The service is currently short-staffed due to a resignation and a person out on back injury. This service accepted Medicare assignment prior to its mandatory implementation date of April 1, 2002. It takes about 70 days currently for them to receive Medicare reimbursement. This is down from 130 days. They speculate that this may be due to some lobbying efforts by state officials and interest groups with CMS. Slightly over 60 percent of this service's revenue comes from Medicare and another 20 percent comes from Medical Assistance. Their defibrillators were purchased through grants. In order to maintain the ambulance service in the community, ambulance staff members are cross-trained in other duties at the hospital. They are hospital employees and are made available for ambulance runs when needed.

The following material from the case studies and vignette interviews will help to describe the variation in ambulance service structure and "uniqueness" that each service has developed, as well as the commonalities in issues facing ambulance services today. This will include major problems or issues that were described by ambulance service personnel and community members about the current ambulance system. The many positive ideas offered by ambulance staff and community residents

[53] Medical Assistance processing depends on the complexity of claims and the completeness of information provided. Average MA processing times for claims without attachments equals 20 to 25 days. Claims with attachments require longer to process, currently averaging around 80 days.

about how local ambulance services might be maintained or strengthened have been incorporated into the recommendation section of this report.

Major Issues

Several issues formed a common thread throughout each of the ambulance service visits and vignette interviews: recruitment and retention of personnel, ambulance garages/quarters, hazards, and long-term financial viability.

Recruitment and Retention of Personnel

Personnel at the three case study sites were surveyed about their interest in becoming EMTs or paramedics and other items related to why they volunteer, how they view this work, and their future involvement. When asked what made them interested in joining their ambulance service, 36 percent responded that they wanted to help people or do the community a service; 32 percent expressed an interest or previous/current involvement with medicine. Remaining responses were equally distributed between wanting to ensure continued ambulance service in their community, personal history with using the ambulance service, and a recognized need for workers.

These findings confirm a 2001 Nebraska study that listed the reasons people become EMT volunteers. These included:

- tradition within families;
- feeling of self-satisfaction through helping the community, civic pride, duty to the community;
- nice equipment to play with;
- wanted to help because medical assistance is some distance from the community;
- the "rush" and "excitement."[54]

Clearly, there is a feeling of community pride and civic responsibility tied to volunteers' work on ambulance services. When asked if they felt that being on the ambulance services was a good use of their time, 91 percent of personnel at the Minnesota case study sites responded affirmatively.

However, barriers exist that make recruiting and retaining ambulance personnel difficult. Some of the major recruitment/retention issues are listed below.

Nature of the work

One frequently expressed barrier to recruitment is the fear of "blood and guts" related to working on an ambulance service. A perception exists that most runs involve serious accidents or injury. Many ambulance crews around the state reported that the majority of runs are for chest pain, shortness of breath, or just not feeling well. While EMTs and paramedics are trained to deal with serious medical conditions and trauma that might result from poor road conditions, hazardous work, or strenuous recreational pursuits, it is a misperception that this is the majority of the work. As one EMT stated,

> "You can't frost this enough to make it rewarding; it has to come from within. Ninety percent of the calls are relieving anxiety and hand holding rather than blood and guts. You have to have a caring attitude."

[54] Mueller, Keith, J., et al. "Current Issues and New Approaches: The EMS Survey in Nebraska." *Nebraska Center for Rural Health Research*. October 26, 2001; p 12.

When asked what would make this job more rewarding or satisfying, another person said:

> "You can't. It's a personal thing. About 80 percent of what we do is consoling and comforting and calming. It's not plugging holes and stopping blood. It's more."

Changing demographics and selective volunteerism

A pressing recruitment issue is the changing demographics in many parts of Minnesota. Younger people are moving away for educational and job opportunities, and a large number do not return to their home communities. Many of the remaining residents are older, and cannot do the physical work required to be a part of the local ambulance squad. The younger people in town have jobs, families, and other obligations.

An issue that arose over and over again in focus groups is the decline in volunteerism.[55] Many focus group participants felt that there has been a serious drop in the number of volunteers and the time available for volunteer activities, especially in Minnesota households in which both spouses work. When focus group members were asked if events like September 11 made people more aware of volunteerism, the most common response was that this event had not affected Minnesota volunteerism so far. In one community, people felt the emphasis on firefighters after September 11 had increased interest in becoming a firefighter by members of the local community. No one felt that this carried over to ambulance services.

Because of the declining numbers of volunteers, people are being recruited to volunteer for many activities in the community. In the EMT/paramedic survey at the case study sites, the majority of respondents (59 percent) stated that they participate in additional volunteer activities in their community. This includes the schools, churches, civic groups, fire department, and other activities. This reliance on a small pool of available volunteers can lead to early burnout and limits the number of hours available for being a member of the ambulance squad.

Invisibility

Confidentiality issues represent another recruitment barrier. Due to the confidential nature of information about ambulance runs, some level of invisibility of the work exists. Firefighters can talk about the big blaze that they fought at someone's farm, but EMTs and paramedics must maintain confidentiality, even when some people in town want to know "why was the ambulance at Mildred's house?"[56]

Time and training demands

At the focus group visits, EMTs and paramedics were surveyed about their participation on the ambulance squad. Even though 91 percent of personnel surveyed felt being on the ambulance service was a good use of their time, 77 percent stated that they have had to sacrifice time with their families in order to be a member of the service. The time commitment of the service (both training and on-call hours) ranked as the top reason (36 percent) the job was difficult. The next most common difficulty (13 percent) was a lack of childcare and balancing EMS with family. When placed in the larger context of work, commuting time, finding adequate child care, and

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[55] Across the U. S. "some communities having difficulty recruiting and retaining volunteers may have had to hire paid staff, which increases the costs of providing services." *Ambulance Services: Changes Needed to Improve Medicare Payment Policies and Coverage Decisions.* Government Accounting Office. November 15, 2001; p. 5. (GAO-02-244T).

[56] Many people interviewed for this study noted the importance of uniforms both for the protection of squad members and to maintain the professional image that is part of being in emergency medical services as a visible part of the community. Another study noted, "the facilities, vehicles, equipment, and uniforms of an EMS organization may capture the interest of some individuals and operate as an incentive for volunteering." Gagnon, Paul. "EMS Enhancement Study." Connecticut Office of Rural Health. 2001.

recreational opportunities, it is clear that being a member of an ambulance crew is a major time and life commitment, regardless of pay or retirement incentives. Ambulance personnel at one site described being an ambulance volunteer as "a huge time commitment." As one person put it,

> "Essentially, we want people to volunteer to spend 6 months getting training in order to be a volunteer on call 12 hours a day or 48 hours on the weekend, with the chance of making about $36 if they go on a run during their on-call."[57]

The training requirements to become an EMT or paramedic can also be a deterrent for potential volunteers.[58] Being on an ambulance service is more demanding than bringing cookies to a bake sale or even coaching a children's sports team. Initial training of 110 hours is required, plus refresher courses and monthly meetings to go over runs and practice skills. Ambulance staff said the training "may take place two or more nights a week in a neighboring community. It conflicts with their kids' schedules. That's a hardship." The sacrifices of being on the ambulance service include missed dinners, missed school and sports events, getting up from the table on a holiday or child's birthday, and hours away from home after being called out in the middle of the night when it's thirty below.

The range of on-call time varies from community to community, based on needs of the service and number of people on the ambulance roster. The on-call requirements for one community are a minimum of 60 hours per month, with no run pay. What this means is that volunteers staff the ambulance service, performing about 48 runs per month, attend monthly meetings, have refresher courses on which they are tested, and perform their ambulance duties while never receiving any direct compensation

Training issues

Required refresher courses for ambulance personnel were frequently cited during case study visits and interviews as an obstacle to retention. Many volunteers felt the refresher courses were required at too frequent an interval and were repetitive. One ambulance director suggested that perhaps the refresher training should be more focused on areas in which there have been changes or on areas where ambulance staff have had difficulty maintaining their skill level.[59]

A related issue in which there was some disagreement among the staff at the various sites was about future upgrading of training and operational aspects of the ambulance service. One position is that for a BLS service, speed to a medical center and basic life support is the way to go. If more and more is expected of an EMT or paramedic, then "fewer and fewer people will be able to volunteer and keep up with the requirements." At other services, staff felt that each new medication or procedure might help to save a life and that these should, therefore, be embraced. These differing positions were heard recently at the Legislature in discussions about requiring all ambulance services in Minnesota to carry epinephrine pens. Clearly, understanding the point at which optimal patient care may exceed the skill level most ambulance personnel are able to maintain as volunteers is critical.

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[57] It should be noted that on some squads, the $36 would not be available because there is no run pay.

[58] Rowley, Tom. "Solving the Paramedic Paradox." *Rural Health News*. Vol. 8, No. 3. Fall, 2001; p.2, points out that "…rural ambulance service has historically relied on volunteers. Unfortunately, volunteerism—even in rural America—is on the decline. One reason is the amount of training required each year to maintain certification".

[59] Ibid, p. 2 points out "because of the low volume of calls, rural EMS personnel may go long periods without using a particular skill or technique. That lack of practice makes it difficult to retain skills at peak levels. Periodic training can help fill that gap, but for rural (and often volunteer) EMS personnel, training can also be difficult to obtain."

High stress and menial tasks

Ambulance work itself can be a retention issue, especially when staffing is tight and a series of runs occurs that are emotionally difficult for the staff. Numerous rural EMTs and paramedics reported that they are almost always transporting people they know and frequently are called to transport their own family members. While they feel that this is a comfort for the patient, it is often difficult for the ambulance crew to see their neighbors, friends, and family members in distress. In one case, a relative of two squad members drowned and was not located for several days. This took a serious toll on the squad. In another case, a volunteer high school teacher/EMT was called to a serious motor vehicle accident involving students the same age as those in the classes he taught. After the event, he was no longer able to continue as an EMT. Use of critical incident stress management techniques and debriefers can help EMS staff work through the psychological consequences of serious events. Having such a resource available was reported to help staff to deal with the sometimes-overwhelming nature of their work.

After each ambulance run, no matter how stressful, the crew must return to the ambulance garage to clean and restock the ambulance. In some areas, when a crew has been gone for up to 12 hours on a run, this task was described as "piling on" for crew members. New crew members often feel they are there to work with patients and squad veterans "don't think they have to do this kind of stuff anymore." As one director said, many members "don't like the light housekeeping duties that come with the job." Performing the higher stress ambulance response coupled with these more menial tasks is enough to make some personnel leave the ambulance service.

Fear of errors and the need for high quality medical direction

Much of the training required for ambulance personnel is aimed at reaching and maintaining a high level of service to the patient and to decrease possible errors. However, it is possible that a mistake can be made or that something can go wrong on a run. It is the job of the EMS medical director to develop procedures to prevent these kinds of occurrences and maintain the quality of care. It is clear from the site visits and interviews that the level of involvement of EMS medical directors with ambulance services around the state is quite variable.[60] The on-going review of runs and quality improvement work is not uniform among the various ambulance services. Several ambulance services expressed the desire for more involvement by their medical directors.[61]

Several ambulance service personnel expressed concerns about meeting standards for safety and proper procedure. Most ambulance service directors welcomed input on how well they are meeting standards and a partnering approach. One director thinks "everything is up to snuff, but we don't know for sure," and appreciates having an outside authority review equipment and confirm that they are up to standards.

Employment concerns

Many squad members feel their employers are supportive of their jobs on the ambulance service. Their employers are called upon to be flexible, allowing their employees to leave whenever they get a call, or sometimes for training. However, over time, ambulance personnel have seen a reduction in the number of employers willing or able to release employees for ambulance call. This decreasing flexibility raises concerns about the need for legal protections for employees who

[60] A national study reported that rural EMS medical directors may be as far as 100 miles from the ambulance squad and may not be available when needed. *Emergency Medical Services: Reported Needs are Wide-Ranging, With a Growing Focus on Lack of Data*. Government Accounting Office. October, 2001; p. 9. (GAO-02-28).

[61] Rowley, Tom. "Solving the Paramedic Paradox." *Rural Health News*. Vol. 8, No. 3. Fall, 2001; p.2, notes that nationally "unfortunately, due to shortages of physicians in general and physicians trained in emergency medicine in particular, many rural EMS units have no physician acting as the medical director. In fact, in some rural areas EMS personnel are the only healthcare providers."

volunteer on squads. Some felt that if they take the required call time they are jeopardizing their employment.

For some employers, releasing staff raises legal issues. For example, nursing homes, hospitals and other health facilities, child care centers, and other regulated industries must meet staffing ratios in order to remain in compliance with various licensing standards. When staff leave on an ambulance call, the facility may be out of compliance.

Compensation

Some communities cannot afford to pay their volunteers. At one service, there is no call or run pay—only a contribution to a retirement plan of about $30 per month. At another service, the volunteers on the service make $1 an hour for on-call time and $1.25 for weekend call. They receive an additional $20 for each ambulance run they go on. Regardless of the length of the runs -- many last three to twelve hours – the ambulance crew receives the same $20. The director pointed out that when an employee leaves work for a run, "the $20 ambulance pay doesn't make up for their time lost from work." One community pays EMTs $9.98 to $12.00 an hour. However to receive this level of pay, they are cross-trained as employees of the local hospital, performing duties there during their call time, leaving when needed on an ambulance run. Another hospital with cross training pays $2.20 an hour plus a $25 stipend per run, or $75 for the six hour run to the major trauma center that is closest to their facility.

Retirement

Ambulance crews are also aware that their retirement program is less generous than that for firefighters and that they usually conduct more ambulance runs per year than the fire departments conduct in their communities. At one service, the ambulance volunteer focus group members said that in terms of compensation, ambulance personnel received "very small rewards compared to firefighters, for example." At another focus group, one respondent felt that there was not a shortage of volunteer firefighters around the state, and this might be attributed to the higher pension. He felt that there is a need for some kind of subsidy for volunteer ambulance—either a volunteer or ambulance industry pension plan.

One tool available to help local ambulance services is the Longevity Award and Incentive Program administered by the EMSRB. The program gives a one-time stipend to a volunteer who retires at age 50 or older with at least five years of service. The amount of the stipend is based on the number of years of service. The amount is generally no greater than $2,500. There is a limit of 400 persons who may receive the award in any year, so if a person wants to retire from the squad, but is not among the first 400, they must wait to apply again in a subsequent year. The maximum allowable years of service that may be counted is 20.

Most ambulance personnel at the focus group sites felt the program is not very helpful. One director stated, "the longevity program has zero value in retaining volunteers." Results from the site visit survey of ambulance personnel revealed a lack of awareness of the program by some volunteers. Of those surveyed, 59 percent were not familiar with the program. Of the 41 percent that were aware, each stated that the program either had absolutely no effect on their decision to work for the service, or that it provided only a small incentive.

One of the problems with the Longevity Award and Incentive Program is that there is a limit of about $3,500 on the earnings that a volunteer can make annually before they no longer qualify for the program. There was confusion about what was or was not counted in that $3,500—such as

call time, run time, or officer's pay. At some ambulance sites, the longevity program "is not applicable to them at all. No one qualifies because they are cross-trained staff of the hospital. The training reimbursement also doesn't apply because they are not volunteers." At another site, the director said, "the longevity program is not applicable in terms of retaining volunteers. The cap is $3,000 - $3,500. Our staff people technically become county employees once they start the run. So, they no longer qualify once they've done a few runs."

One of the major complaints with regard to the longevity program was the meager amount accrued over time. Many focus group members cited examples such as "a member of the fire department retired with $25,000 after 20 years. I've been on the (ambulance) squad for 27 years and have $3,000 in my account." One ambulance director suggested that for the longevity award "make it at least comparable to fire for retirement."

Some services do not participate in the longevity program and instead enroll personnel in PERA. Some participate in both. One ambulance service in this latter category stated, "the longevity might yield $1,800 when you're 59 years old. The PERA will give you $11,000 after 15 years."

An additional issue cited was that once the volunteer receives this retirement money, they are taxed on it. People at this service were glad to have the retention program, but felt that being taxed on the small amount they received lessened the value.

The next five to ten years

In the current environment of changing demographics and difficulties recruiting volunteers in general, it is hard to predict how well ambulance services will be able to recruit volunteers over the next five to ten years. When asked about their prospects for recruiting and retaining volunteers for the ambulance service in the future, many focus group members and ambulance staff felt that this would be a problem. For services close to metropolitan areas, some staffing problems were reduced because EMTs who want to become paramedics need to spend two years on a squad as an EMT. Therefore, these aspiring paramedics are willing to volunteer for two years on a smaller community's ambulance service as they prepare to become paramedics. For more remote communities, the prospects are not as good. Many residents and ambulance personnel feel their towns are becoming retirement communities, with few people available to work on the ambulance squad. In some places, the younger residents work outside of the community (e.g. bedroom communities or suburbs to larger towns and cities), so the people who could volunteer are not in town weekdays, explaining the problems ambulance services are experiencing with daytime coverage.[62] In some communities it is felt that they could recruit enough volunteers if they could pull people from outlying areas for on-call. However, to do this, many would need to expand their quarters so that people could have a place to stay during their call time. Many communities currently do not have such ambulance facilities with living or sleeping quarters and would need to seek capital improvement funding for such projects. Finally, recruitment of volunteers is seen as tied to economic development in the community. The availability of jobs in the local area would mean more people available to volunteer in the community. As jobs leave the community, so does the available pool of volunteers.

In looking at the recruitment and retention of ambulance personnel, it is clear that in aging communities, there are obstacles to finding adequate numbers of people who are interested and

[62] According to Gagnon, "…many people commute great distances to their jobs and they no longer have the time to devote to a pursuit such as EMS. Their daily battles are waged at and on the highway to and from work, and their volunteer time is directed toward activities with "happy endings." Gagnon, Paul. "EMS Enhancement Study." Connecticut Office of Rural Health. 2001.

willing to take the lengthy training required to become an EMT or paramedic. In addition, once they are recruited and trained, retaining people who have other life responsibilities as well as many hours of on-call and run time and who can compare their "longevity" program to that of local firefighters becomes problematic. One additional issue is covering all of the hours needed by the existing pool of volunteers and staff. "Covering hours is a bigger problem than the number of people." When asked if they currently had enough staff, most services wanted more people, but also stressed that it was coverage that was crucial. Weekday daytime hours are very difficult to cover, as was shown in the survey results, and release time from work is becoming a scarcer commodity over time.[63]

In addition, it might be useful to know why volunteers leave ambulance work. At one case study site, staff suggested a statewide survey of those ambulance personnel who no longer worked for a service. They suggested asking why the person left the service and, in particular, focusing on those people who served three years or less. This type of effort might help uncover additional issues or incentives to promote retention of trained ambulance staff.

Quality of Ambulance Garages/Facilities

An issue that came up several times in the course of the case studies was the problem of inadequate ambulance garages. Some garages are older buildings or hand-me-down buildings from other city or county uses. Many are not designed for the needs of an ambulance service. One ambulance director described his situation this way:

> "The ambulance office is in the basement of the city building, with no windows, no sleeping quarters, no TV, and the phone line was removed several years ago because someone abused long distance privileges. The ambulances are physically housed six blocks away at the other end of town."

Clearly, buildings designed for ambulance functions would enhance ambulance operations. Several key elements are air quality, training space, and sleeping quarters.

Air quality

Some ambulance services are joint or share garage space with the fire department. In many of these buildings, when the fire department starts up the trucks, the ambulance personnel are left in the building breathing noxious fumes. Several ambulance directors reported that OSHA is examining air quality issues. In addition to the problems these fumes cause for staff, there are additional issues with clean storage of supplies that affect the quality and cost of ambulance services.

Training facilities

In addition to air quality or poor space, many of the buildings lack training space for the squad. One director described having training during the winter at the local community center, but needing to keep the ambulances running outside so that they would start if needed for a run. All the while, the staff ran between the building and the ambulance "freezing their butts off" during the entire training session.

[63] In a 2001 Nebraska study, the authors note that many ambulance personnel are "volunteers with fulltime jobs in a different community, making them unavailable during working hours". Mueller, Keith, J., et al. "Current Issues and New Approaches: The EMS Survey in Nebraska." *Nebraska Center for Rural Health Research*. October 26, 2001; p 12.

Sleeping quarters

Many ambulance services expressed the need for sleeping quarters for the ambulance staff to aid recruitment and retention. Many times, someone from outside of town would be willing to take call, but the service requires that the volunteer be in town during call. Without sleeping quarters, this is a hardship in many rural areas.

> "If we could get sleeping quarters, we could get people from out of town on the service for call. In neighboring (Community X), the requirement is to live in town. They lose folks because of that rule. There is a paramedic who lives in this town and works 12 hours a day in the next town. They won't let her be on their service because she doesn't live there. She could be on the service here, but the town closes up by 9 p.m., so there's nowhere to stay and no food or coffee available."

One service reported that they had finally been able to work together with others in town, do much of the labor themselves, and build a new ambulance garage. However, grant funding legislation to complete the concrete driveway work needed outside the building was vetoed and they were unable to complete the concrete work. They have a new garage, "but we drive through the mud to get to it." Many services expressed a need for "funding for capital improvements, like ambulance garages. Grants for buildings would be big" according to one director.

Hazards

One area that was not part of the planned focus group or interview questions is the area of hazards faced by ambulance crews. EMTs, paramedics, and officers mentioned these issues repeatedly. There are two parts to the concern: 1) new hazards such as blood-borne pathogens and methamphetamine labs, and 2) inadequate clothing to protect EMTs from such hazards.

Methamphetamine Labs

Over the past several years Minnesota has experienced an increase in the number of methamphetamine labs. According to a recent report, "In 2001 there were 236 meth labs dismantled with the assistance of the Drug Enforcement Administration in Minnesota compared with 138 in 2000, 109 in 1999, and 46 in 1998. In 2002 (January through May 8) there were 98."[64] The report noted that most of these labs were found outside of the Twin Cities metropolitan area.

Many ambulance staff reported that meth labs are becoming "more common, more intense, more commercial—not just a little pot cooking, but big quantities." Recent data supports this:

> "According to law enforcement sources, the level of sophistication of labs increased…. The volatile, toxic ingredients and makeshift conditions of most clandestine methamphetamine labs heighten the risk of injury to bystanders and law enforcement personnel, and produce contamination of surrounding areas."[65]

EMS personnel have noted the increases in labs. Frequently, the ambulance service is asked to stand by on these raids in case of explosion, or injury to enforcement personnel. As one captain put it, "so far we have been lucky and everything has gone smoothly—no injuries." Another ambulance captain stated, "There is concern about personal safety, due to meth labs that have been busted in the area." One ambulance director said:

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[64] "Drug Abuse Trends – Minneapolis/St. Paul, June 2002." Butler Center for Research at Hazelden. <http://www.hazelden.org/research/publication_detail.cfm?id_145> (October 29, 2002).
[65] Ibid.

"We've had 11 meth lab busts in the recent past. These have been all over the county. We have a good relationship with the sheriff, so he will call the night before and say "gee, hang around town between 10 and 12 noon tomorrow" so that we can have a heads up that they will be going on one of these."

If ambulance personnel are called to a scene that is not a pre-arranged "drug bust", they may unknowingly become exposed to these dangerous substances. One ambulance captain reported that they were called into a home to treat a burn victim and only after the person had been evacuated did they learn that they were dealing with methamphetamine substances. Exposure to these labs can result in serious respiratory and other health problems for fire, law enforcement, and ambulance personnel.

Blood borne pathogens

Another fear is that of blood-borne pathogens, e.g. HIV, hepatitis B. Exposure to these pathogens can lead to chronic illness or even death. One factor to help protect ambulance personnel consists of uniforms that prevent blood and other substances from passing through. However, at several ambulance services, the personnel do not even have standard uniforms to wear, and the services do not have the money for this higher level of protection for staff. Some ambulance services use hand-me-down uniforms from neighboring services or have no uniforms. Clearly, this leaves a gap in their protection against blood borne pathogens.

Confidentiality laws

Related to this concern was the concern about ambulance personnel not knowing what they might be dealing with due to confidentiality laws. One ambulance director who used to work in another state said that in his previous work, a physician could inform him if he was transporting a patient with hepatitis, HIV, or other risk factors. In Minnesota, this is not the case, and he feels that "this is bad for the safety of health care professionals."[66]

Traditional hazards

In addition to new hazards, there have historically been hazards, such as chemical trucks and trains hauling dangerous substances. Since September 11 and subsequent bioterrorism training, there seems to be heightened awareness of these hazards. Several EMTs and ambulance directors mentioned dangerous intersections in their communities and fears of chemical trucks colliding with other vehicles at these intersections. They expressed concern about how to deal with the nature of these materials and dangers to ambulance crews in these situations.

Financial and Reimbursement Issues

Several issues are threatening the long-term financial viability of ambulance services in Minnesota. These include impact of the new Medicare fee schedule, inconsistent billing practices, rising costs for ambulance insurance, fuel, training, and medical supplies, getting "stiffed," mandates and requirements, and for some services, unloaded miles.

Most ambulance services try to support themselves through on-going revenue from ambulance runs. Some need to approach local civic organizations when they need to replace big-ticket items, or they might run a thrift store or hold fundraisers to meet these needs. Services need to pay for initial and ongoing training, and as noted earlier, the state training reimbursement is provided after a trainee has

[66] Minnesota Statutes 2002, Sections 144.7401-144.7415, gives EMS personnel access to the same type of post-exposure evaluation that was previously available to hospital personnel, including testing of "source individuals". The use of universal precautions (see Blood borne pathogen in the Glossary) has also been stressed for ambulance services to reduce potential exposures.

served on a squad for one year. Several services reported that the training money did not cover all of the training costs and that it doesn't cover refresher or variance training. These costs must then be covered by the local service out of their run charges, fundraisers, or local subsidies.

Impact of the Medicare fee schedule

In rural areas, since ambulances transport a high proportion of elderly patients, there is concern about reduced reimbursements and their impact on covering those on-going costs described above. The new Medicare fee schedule will be phased in over the next several years. One director said that as of April 1, 2002, (the implementation date), 33 percent of their income would go away.

> "Under the new fee schedule, reimbursement will go to $174.53—much less than the actual run cost. We have a 50 percent rejection rate for Medicare before resubmission and are out farther than 128 days now waiting for payments. Rejection for Medicare has gone up dramatically in the last two years. There are more stringent requirements and the assumption that the elderly are using the ambulance as a taxi."

Another director said "the situation with Medicare has been somewhat fluid over the past several years. When Medicare paid for the ambulance bill, the payment went to the patient who frequently 'forgot to pay' the ambulance service." So, about a year ago, the service decided to accept Medicare assignment. That turned out to be a financial disaster through 2001. Medicare paid about one-third of the cost of the run. They returned to the previous system of not accepting assignment while awaiting the decision from the federal government on the implementation of the new fee schedule. This service is anticipating raising charges of some items to try to break even. The captain estimated that 80 percent of their runs are Medicare patients. They have already raised the basic charge, which was $240, to the current $350. Their average run cost was about $300 based on the previous $240 basic charge plus supplies and mileage. They're hoping the $350 charge will help to offset the Medicare losses.

Another service that did not previously accept Medicare assignment is now "going to lose $60,000 a year under assignment." They are raising their rates to cover the difference. "The basic rate was $440—it will be at least $500 to cover this loss." The director stated their Medicare rejection rate is going up. They submit, "on average, three times to Medicare on a claim, with a month between each submittal before they get paid.

There is an additional fear of a domino effect, where other payers follow Medicare's lead and reduce their reimbursements as well. This would have a negative multiplier effect on ambulance services.[67]

In terms of the effects the new schedule will have on health care in the community, focus group members summed it up as:

> "We feel like we're being nickel/dimed and this will mean that we can't give supplies to the first responders and other things. We will still try to be there and give the best possible care.
>
> The fee schedule changes are a concern for health care in the community. We don't want to run short of funds—we're a non-profit organization, just trying to provide a service. We won't have money for ambulances, equipment, defibs, and supplies."

[67] A national study reported "some systems that were relying on income from billing health insurers reported concerns about declining reimbursement levels from these sources due to possible changes in reimbursement rules." *Emergency Medical Services: Reported Needs are Wide-Ranging, With a Growing Focus on Lack of Data*. Government Accounting Office. October, 2001; p. 8. (GAO-02-28).

The results of this change in the fee schedule, as one director put it, are:

> "As far as the impact of the BBA on rural ambulance services, there will be fewer training dollars, stress which trickles down to the volunteers, less changeover in rigs—older rigs, not state of the art equipment; clothing will suffer. We will go back to were we were 15 years ago with crappy radios and a rig that died on the Lafayette bridge. There will be less volunteers because you can't reward them. …things will move more slowly in the future."

Inconsistent billing practices

Interviews and focus groups revealed inconsistent billing practices across ambulance services or a lack of consistent local policies on billing. Some services bill for supplies, some don't. Some BLS services have contracts with the local ALS provider so that each receives some payment on a joint run. Others have no such agreement, and are paid nothing when the ALS provider becomes involved.

Minimal training for billing staff is partly at fault. Frequently, the billing person receives a few hours to a few days training from the departing billing clerk. Since the billing function can be housed in the ambulance service, in the hospital, or in the city or county office, this function represents a variable amount of the person's job. City or county staff may have little or no familiarity with ambulance terms and codes. Even ambulance personnel do not always know the correct codes for some activities, especially those that they do less frequently. "Volunteer staff in particular may have difficulty filing claims, as they often lack experience with the requirements of Medicare's claims payment process. An improperly completed claim form increases the possibility of a denial."[68]

Training on ambulance coding could improve reimbursement. For example, coding "possible pneumonia" results in a rejected Medicare claim. However, if "difficulty breathing" is coded, there is a much higher likelihood of reimbursement. Understanding the subtle differences in how charges are stated may result in a major difference in reimbursements for some services.

Rising costs

Ambulance staff and community residents noted rising costs. "Everything is going up" was how one resident stated it. The most frequently mentioned expense items were insurance, fuel, training, supplies and equipment.

Getting and paying for ambulance insurance is problematic. Some companies have left this insurance market, leaving ambulance services scrambling for coverage. One ambulance service noted that while they still have coverage, their deductible has gone from $500 to $5,000 and their premium has tripled over the past few years. They fear that they won't find insurance at all in the future, even at these rates.

The cost of fuel is an issue in parts of the state where distances to the hospital are the greatest.[69] One ambulance director noted that if they had to transport from the closest hospital to the regional

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[68] *Ambulance Services: Changes Needed to Improve Medicare Payment Policies and Coverage Decisions.* Government Accounting Office. November 15, 2001; p 8. (GAO-02-244T).

[69] *Rural Ambulances: Medicare Fee Schedule Payments Could Be Better Targeted*. General Accounting Office Letter Report. July 17, 2000; p. 9 (GAO/HEHS-00-115) states nationally "among the freestanding ground providers that bill Medicare, rural ground providers had more than 10 times as many transports of 50 miles or greater than their urban counterparts and at least four times as many trips of 20 to 49 miles as urban providers."

medical center, that even with lights and sirens on, they had to stop to refuel the ambulance. Ambulances moving at relatively high speeds do not obtain high miles per gallon. One director estimated that their ambulance gets eight to ten miles per gallon if they "don't go too fast."

Training costs are also increasing. Many EMTs have been on a service for 5 years or less, which means a continuous training of new recruits to fill the roster. Many squads can't afford to pay to train people who aren't going to stay on the squad, although some squads mentioned the importance of training people who may later volunteer in another community or just be available as a community resource. The state reimbursement doesn't cover the entire cost of the training, and services have to wait one year to receive their reimbursement, which occurs only if the trainee is still actively participating on the service. Coming up with this ongoing cash flow to support training can be a burden, especially for small, low budget services.

Finally, the costs of supplies, equipment, and medications are increasing. Ambulance services feel the impacts of these increases because they must maintain a minimum equipment list, in good working order, and they must stock the needed supplies and medications consistent with their licensing and variances. Slow reimbursements from payers, undercharging for supplies, and other problems make it difficult to cover the costs of these necessary items on a routine basis.

Bad debt collection issues

As was noted earlier by one ambulance director, when Medicare used to pay the patient directly, the patients frequently forgot to pay their ambulance bill. This is not unique to Medicare bills. Lack of payment after an ambulance service has transported a patient is an issue for a number of ambulance services. At one service, the ambulance director noted that they had about 600 runs last year. Of these, about 100 of them were never paid for. Another director said that people asked him, "Why are you billing me? You're a volunteer ambulance service." People who use the service apparently believe that it should be available when needed, but don't seem to have an understanding that even for "volunteer" services there are costs such as ambulances, equipment, training, and supplies. Accepting Medicare assignment will remove some of the problem of non-payment by patients or their families, but only for Medicare-paid runs.

Mandates and requirements

The term "unfunded mandate" came up frequently in interviews and focus groups. One person summed it up as "too many unfunded mandates from the state and federal government." In a community focus group, the group members talked about the importance of local government control, but noted the abundance of new requirements in recent years.

> "There should be a sharing of responsibility for the provision of ambulance by the city, the county and the state—it is not strictly a city provider, so there has to be broader participation. And, you have to take seasonal population shifts into account in the tourism seasons. There is a loss of population in rural areas, so it's a disproportionate burden for the small local community to support ambulance that is frequently used by folks from elsewhere who are not supporting the ambulance infrastructure."

Many residents and ambulance staff cited the importance of maintaining a local ambulance service, but this is becoming more difficult when they are serving large tourist or seasonal populations, trying to meet state requirements, and are now seeing federal changes, such as HIPAA compliance (see Glossary) and mandatory Medicare assignment.

The most frequently cited new requirement is complying with the Health Insurance Portability and Accountability Act (HIPAA). HIPAA creates yet "another burden on top of the Medicare fee

schedule problem." Several ambulance service personnel cited the cost of software and training needed to ensure HIPAA compliance and one director stated "city subsidies might help, but really the people not on Medicare will get hit."

Finally, ambulance personnel are concerned about more data collection and paperwork. Ambulance services across the country are being asked to code data about their runs for the data collection project based on the National Highway Traffic Safety Administration's data collection model. All services are required to participate, and volunteers or part time paid staff are performing most of this work. One ambulance director is concerned that they'll lose good volunteers who have volunteered for other reasons than doing paperwork.

Unloaded miles

A related problem pertains to unloaded miles. This seems to be a particular problem for areas that have relatively large PSAs to cover, such as northern Minnesota. Here's one example:

In Community X, the ambulance travels 20 miles unloaded to pick up a patient. The patient is then transported to the closest hospital, 30 miles away, stabilized, put back in the ambulance, and transported to a major medical center 140 miles away. The ambulance crew then returns to town. The ambulance has traveled a total of 360 miles, with 170 of those miles being "loaded" or reimbursable. The 190 unloaded miles cannot be billed, so the cost of fuel and wear and tear on the ambulance must be provided essentially free of charge by the local ambulance service. In areas such as northern Minnesota, the tax base is relatively small while the distances are fairly great. This means a smaller tax base to support the relatively longer ambulance runs that are required.

Fees

One service pointed out that for small rural ambulance services, even the amount required for an ambulance license ($150 plus $96 per ambulance every two years) may be a hardship.

Other issues

Other issues raised in communities included the role of the ambulance service in local economic development, configuration of primary service areas (PSAs), and make-up of the Emergency Medical Services Regulatory Board. Keeping ambulance services viable, particularly in communities lacking other health care services, was seen as a way to retain residents and attract retirees. One community lists their ambulance service as an asset in their chamber of commerce brochure. Some communities felt that one part of maintaining viability was making changes to some PSAs, including making some smaller because of travel distances and related costs or reconfiguring them to better match fire districts for administrative simplicity. Finally, some ambulance staff felt that there should be more input from EMTs and paramedics on the EMSRB by adding seats for more local ambulance personnel.

Recommendations for Improving Rural Ambulance Services' Financial and Workforce Status

As a part of this study, ambulance directors, EMTs, paramedics, and community residents were asked for their ideas on how to approach the issues of recruitment, retention, and the future financial viability of ambulance services in their communities. Their ideas formed the foundation for many of the recommendations discussed in this section. The members of the Rural Ambulance Services Work Group (a sub-group of the state Rural Health Advisory Committee) provided additional input, context and guidance in developing these recommendations. This section is divided into sub-sections encompassing recommendations related to:

- State-level policy changes
- Direct State-level financial support
- State and/or regional technical assistance and support to rural ambulance services.

The section concludes with additional discussion of suggested community-level and regional approaches to strengthening rural ambulance services.

Recommendations Involving State Level Policy Changes

Recommendations in this section are listed in descending order of priority as determined by the Rural Health Advisory Committee. Some of these recommendations have financial implications.

- **Tax credits or exemptions for ambulance volunteers**

  Recommendation 1: Ambulance volunteers' service-related income, up to the statutory limit on "volunteer income" (currently $3,000 per year), should be made exempt from state income taxes, and the volunteer income cap should be eliminated.

  A state income tax credit or exemption for ambulance volunteers might assist with recruitment and retention. In Connecticut, for example, volunteers can receive a tax credit of up to $2,000 on their local taxes as EMS or fire volunteers.[70]

- **Training related improvements**

  Recommendation 2: Ambulance personnel training should be shifted from "training for the sake of training" to an approach involving skills-based testing, and training targeted to refreshing only

[70] York, Jim. Mansfield,Connecticut Fire Company. Personal Communication.

those skills where a need for improvement is identified. The EMSRB has already done some exploration of this approach. The Committee recommends that the EMSRB continue to explore and formulate proposals for furthering this approach.

A suggestion offered by many of the case study ambulance services was decreasing the frequency of refreshers. The Committee considered the possibility of moving to a three-year rather than a two-year refresher schedule, but felt Recommendation 3 presented a more promising approach.

Recommendation 2a: The EMSRB should explore training delivery methods that could be more efficient than the current system, including greater use of electronic delivery mechanisms such as the Internet. In addition, any required "variance training" or other specialized training such as CPR be incorporated into the basic refresher course rather than being offered separately. (An example of variance training is the additional training needed due to recent Minnesota legislation requiring that epinephrine pens be carried on all ambulances.)

- **Improvements to the Longevity Program**

Recommendation 3: Current statute places an upper limit of 20 on the years of service for which an ambulance volunteer can receive credit through the Ambulance Service Longevity Award and Incentive Program. This 20-year limit should be eliminated. In addition, the Emergency Medical Services Regulatory Board should conduct further review and analysis of possible improvements to the program.

A key strategy for retaining volunteer ambulance personnel involves improvements to the Ambulance Service Longevity Award and Incentive Program. Minnesota firefighters have access to a retirement program that is generally acknowledged to be more attractive than the ambulance volunteers' longevity program. This lack of equity between the two programs contributes to a public perception that firefighters' work is more highly valued than ambulance volunteers' work. Many individuals interviewed for this study suggested that the two programs be made more comparable.

The review and analysis referenced in Recommendation 1 should include but not be limited to potential reductions in paperwork required of program participants. Options for improving the ambulance personnel longevity program could include creating a savings bond-like program resulting in no taxes on the retirement distribution, or the opportunity to roll it over into an IRA.

Since the current longevity program is not available to paid employees, attention must also be given to a retirement program for paid staff.

Recommendation 3a: An analysis of the longevity program, PERA enrollment, or other retirement options for paid and volunteer ambulance staff should be conducted to identify which vehicle would provide the most appropriate incentives for retaining paid ambulance personnel.

- **Training reimbursement and cost saving strategies**

Recommendation 4: The hourly training stipend ambulance services receive for staff training (currently $5.50/hour) should be increased to an amount that more closely represents the value of employees' time, and an additional allowance should be made for the cost of required training materials.

Recommendation 4a: The amount of time ambulance squads must wait for reimbursement after an employee is trained should be reduced from one year to six months, in order to allow re-use of training funds on a more frequent basis.

Currently the EMSRB reimburses ambulance services for a portion of the costs of training personnel (up to $450 for a basic course and $225 for a continuing education course). The ambulance service may request reimbursement when the trained individual has served as an active member of the ambulance service for one year.

- **Strengthen involvement of medical directors in ambulance service operations**

Recommendation 5: The EMSRB is encouraged to work with regional EMS programs, the Minnesota Academy of Family Physicians, the Minnesota Medical Association, and others as appropriate to develop incentives for medical directors to participate in available national and state training opportunities, and to develop as necessary additional training opportunities that better meet the needs of rural medical directors. This should include consideration of more distance learning opportunities.

Recommendation 5a: Public recognition of the contributions medical directors make to the operation of the local ambulance service should be encouraged by the EMSRB.

The role of medical directors in providing leadership to ambulance services is critical to services' ability to improve and maintain the quality of service provided, and to supporting ambulance services' efforts to function as part of an effective health care team. According to ambulance staff interviewed for this study, as well as many members of the Rural Ambulance Services Work Group, the level of involvement of medical directors in ambulance service operations across the state varies considerably. In fact, it appears that many ambulance service medical directors are minimally involved in the operations of the service(s) they advise. According to one Work Group member, "Strong medical direction is a rarity." In some cases, this may reflect a lack of training or other types of supports for medical directors' involvement. In other cases, it could reflect a lack of pay or a lack of community recognition for the time and effort medical directors devote to the job.

The Rural Health Advisory Committee sees a direct link between the level of involvement of medical directors and ambulance services' ability to recruit and retain workers and to maintain high quality ambulance service throughout the state.

- **Variances for health, child care, and other local employers with staffing ratio issues**

Recommendation 6: Implementation of a variance or exemption for staffing ratios for health and childcare facilities, schools, and other employers during the period of time that an employee is staffing an ambulance run, up to a certain limit (possibly two hours), would help meet daytime ambulance volunteer needs.

This could consist of rules regarding the length of time that the employee could be gone or a system for back-up for the person who is released for an ambulance run. Providing such flexibility along with a reduction in legal liability for these employers might encourage them to allow

employees to take call time for the local ambulance service and to be released for runs when necessary.

Recommendation 6a: A child care provider exemption should be structured to allow for unannounced drop-off of the children of ambulance personnel from their community during the time the ambulance staff member is on a run.

- **Include ambulance personnel in health legislation and analysis**

Recommendation 7: The Legislature and the Minnesota Departments of Health and Human Services are encouraged to consistently include references to ambulance services and personnel in health workforce policy directives and health workforce analysis.

Because EMS is not consistently considered to be a part of the health care delivery system, ambulance personnel are sometimes overlooked in health policy discussions and health workforce analysis.

Recommendations Involving Direct State, Federal or Foundation Financial Support

- **Support for federal legislation**

Recommendation 8: The Legislature, the Commissioners of Health and Human Services, the EMSRB, and other state policy makers should support federal efforts to improve reimbursement and provide other supports to rural ambulance services.

Congress has recently considered several proposals supporting rural ambulance services, including the Rural Emergency Medical Service Training and Equipment Assistance Program, which would provide $50 million in grants to support EMS recruitment, training, distance learning, and other needs. The bill, introduced by Representative Mark Kennedy of Minnesota and Senator Kent Conrad of North Dakota, was incorporated in October 2002 into HR 3450 (the "safety net bill"). HR 3450 authorizes but does not fund the program; at the time this report was written, Congress had not yet appropriated funds for the bill.

Congress has also considered provisions adjusting Medicare reimbursement for rural ambulance services, in particular those owned by a Critical Access Hospital. As noted in an earlier section of this report, other payers (the state's public health care programs and private health plans) often peg their reimbursement to Medicare rates; changes in Medicare reimbursement, therefore, have a ripple effect through the entire EMS financing system.

- **Grant and/or loan programs**

Recommendation 9: A grant and/or loan program to meet capital, clothing, and equipment needs of rural ambulance services is recommended.

State, federal and/or foundation grant or loan programs targeted to the following areas would be helpful to rural ambulance services:

  - **Capital improvements** for ambulance garages, training space, and sleeping quarters. High

quality quarters are seen as a retention tool in these ways: adding sleeping quarters would mean that people from outside of town would have a place to stay while taking call; providing basic kitchen facilities would mean that personnel would have access to food in many small towns where the local café closes in the evening; having adequate training space for monthly meetings, practices, and other training opportunities would make it easier for personnel to comfortably meet the on-going training requirements and run reviews that are part of ambulance service duty. Some capital improvement funds are currently available through two federal agencies, HUD and USDA Rural Development.

- **Uniforms and protective clothing**, Jackets and coats provide basic protection for ambulance personnel from the elements and are seen as a minimum need, and the provision of clothing that would offer protection from blood borne pathogens was seen as an emerging need. Beyond this, having high quality, protective uniforms was seen as an indication that their work is valued and that they should be protected from hazards while performing their duties.

- **Equipment**. This includes communications equipment such as radios and repeaters; transport equipment, and computer equipment, software, and support for Internet access. Several ambulance services, even in the small number of case studies and vignettes in this study, noted that they had lost repeaters to lightning strikes or high winds leaving the possibility of communication "dead zones" in their service areas, making their jobs more difficult and potentially endangering lives.[71] Other equipment needs include snowmobiles, all terrain vehicles and rescue sleds to evacuate people from remote or inaccessible areas. Many services currently rely on equipment from the sheriff's department or on their personal vehicles. Investments in computer equipment and Internet access would greatly improve ambulance services' ability to communicate with one another within their regions and across the state, and would help services improve their speed and accuracy of billing, contributing to their financial viability.

- **Fee or tax related strategies**

  Recommendation 10: Further exploration of fee-related strategies to support rural ambulance services is recommended.

  Recommendation 10a: The EMSRB and/or the Department of Revenue should develop ways to encourage city and county operated ambulance services to take full advantage of the Revenue Recapture Act, which provides a mechanism for services to collect unpaid charges out of tax refunds or lottery prizes.

  Fee-related strategies could include a hunting, fishing, or state park assessment, or a license tab surcharge to support ambulance services. Adding a fee to hunting or fishing licenses or state park permits could create a fund to provide grants to local ambulance services for their equipment or operating needs. Such fees would help to offset additional costs being borne by local citizens in certain parts of the state for emergency services provided to tourists visiting their area.

[71] An October 2002 GAO report notes that in rural areas "communication between dispatchers or medical facilities and emergency vehicles is more likely to suffer from "dead spots"—areas where messages cannot be heard," *Emergency Medical Services: Reported Needs are Wide-Ranging, With a Growing Focus on Lack of Data*. Government Accounting Office. October 2001; p. 6. (GAO-02-28).

Recommendations Involving State and/or Regional Technical Assistance and Support to Rural Ambulance Services

Recommendation 11: The EMSRB and regional EMS programs should explore and, where appropriate, develop implementation plans addressing the following identified needs.

The Rural Health Advisory Committee recognizes that state EMSRB staff and regional EMS program staff are already involved in providing technical assistance and support to rural ambulance services. However, the study conducted for this report identified a need for increased technical assistance and support. For each area listed below, the state and/or regional programs could play a role. Further exploration is needed of how the responsibilities in each of these areas should most appropriately be divided between the state and the regions.

- **Standardized accounting system**
  This and earlier studies of Minnesota's ambulance services have identified a need for ambulance services to move toward a standardized accounting system so that the financial condition of services can be monitored on an ongoing basis. (See page 42 for discussion.) The Committee recognizes that smaller ambulance services may regard this requirement as punitive and may have difficulty complying. Therefore the Committee recommends that regional EMS programs and/or the EMSRB provide targeted support to those ambulance services to ensure their ability to comply with any new accounting or financial requirements. After a standardized accounting system is established, ambulance service solvency requirements and a schedule of financial audits should be established in order to ensure the ongoing financial viability of the system.

- **Specialized training**
  - As a first step in learning what specialized training is already available throughout the state, Local Community Health Services staff throughout the state should be asked to report, as a part of the CHS planning process, on training opportunities currently being offered by EMS personnel and organizations in their districts. This would most appropriately be requested and coordinated by the Commissioner of Health, and would assist ambulance services and regional EMS programs in identifying possibilities for greater collaboration and reduced duplication in training.

  - Statewide or regional workshops on Medicare issues for ambulance billing staff. Outcomes of such workshops might include: training on Medicare and non-Medicare billing and coding, forms completion, such as the PCS form for transport on a non-emergency basis, and other billing issues; development of contracts, such as those between ALS and BLS services, on intercepts; sharing of information across services or regions on how services are responding to changes in the Medicare fee schedule and other insurance changes, how to calculate costs and appropriate charges, and keeping current on billing practices over time.

  - Statewide or regional workshops on grant writing. Understanding the basics of grant writing, when to apply, what information is required, and so on would make it possible for some services to seek funds from existing sources to meet their needs. In the same vein, fundraising workshops could help ambulance services share some of the many creative methods that are being used to help fund ambulance needs currently. For example, one ambulance service set up a separate non-profit corporation that runs a thrift store; proceeds

are available to support the service's special needs for equipment or clothing. Many ambulance services conduct fundraising breakfasts or dinners. Sharing information on which fundraisers are most effective could help some of the smaller services conduct these kinds of activities.

- Statewide or regional coordination of Critical Incident Stress Debriefing (CISD). CISD is widely recognized as an effective strategy for helping emergency personnel cope with the effects of traumatic situations to which they are exposed. However, CISD is not consistently used in situations where it could be helpful, and Work Group members believe ambulance personnel are paying an emotional price. Better coordination at the regional or state level could help to remedy this situation.

- Statewide or regional coordination of communicable disease training. Ambulance personnel desire more information about communicable diseases of the patients they transport. Some staff do not feel they are adequately protected from some of these risks, and this makes the job less attractive over time. Education, information, and protective equipment are all elements that would increase staff feelings of safety and might help to retain them on a service. This training could potentially be developed and offered by the Minnesota Department of Health.

- Statewide or regional CPR/AED training. Minnesota could undertake a statewide or regional combined CPR/AED (automatic external defibrillator) training initiative in order to increase the pool of people trained in resuscitation techniques. If these courses were to be taught by local ambulance personnel in their communities, the public's exposure to and appreciation of the ambulance service and its role in the community would be increased. This initiative would be mutually beneficial for citizens and local ambulance services, and would align closely with current federal efforts to place AEDs in more public places.

- **Intensive support for struggling ambulance services**
  Intensive help and support to ambulance services that are struggling with particular issues would help support their future viability. For example, some services are struggling with basic issues such as keeping adequate personnel files, attaining compliance with certain mandated activities, or maintaining their level of quality when they might have few runs per year. While the Work Group recognized some of this type of support is currently available, it also saw a need for more. The group suggested that regional EMSRB specialists or others would be well positioned to develop this capacity.

- **Mutually supportive roles of health care facilities and ambulance services**
  There are crossover skills between ambulance staff and hospital and long term care staff; pursuing how these skill similarities might be used to enhance ambulance/hospital relationships and viability would benefit both entities, maximizing use of all health professionals during this time of health workforce shortages.[72] Some hospitals that own ambulance services have implemented cross-training programs. Ambulance personnel become hospital and nursing home employees in dietary, lab, billing or other settings, and take ambulance calls while working at the hospital. The success of these models over time should be examined to uncover other possible relationships between ambulance services and other health care facilities.[73]

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[72] **"**Use of EMS Personnel in Minnesota Hospitals." Minnesota Ambulance Association. <http://www.mnems.org> (December 11, 2002)

[73] Rowley, Tom. "Solving the Paramedic Paradox." *Rural Health News.* Vol. 8, No. 3. Fall, 2001; p. 4, notes "paramedics could, in addition to their emergency medical responsibilities, act as physician extenders much like physician assistants or nurse practitioners, health

- **Regional communication systems**
  The state's EMS communication system needs to be better coordinated. Currently, no reliable system exists for rapidly communicating a message to all ambulance services in the state. As the state's efforts to improve emergency preparedness and develop an organized statewide trauma system move forward, it is critical that such a system be developed. This may be accomplished most effectively through the regional EMS programs.

- **Centralized ambulance repair support**
  Related to the focused help described above is the idea of a general repair service for ambulance services. For example, often an ambulance service might need to make a repair to a piece of equipment such as a cot or monitor. Ambulances services don't always have the expertise needed to make the repair and they may have difficulty finding someone locally who can do it properly and cost-effectively. A statewide or regional resource for the repair or replacement of damaged equipment would be very useful to local services, and would reduce costs because repair is less costly than replacement. This need has become especially critical in the past few years as ambulance repair services have found it very difficult to get insurance.

Suggested Community Level Approaches

- *Community relations and education programs*
  Involving ambulance and fire personnel in creative ways in the community might improve community awareness and support for these critical services. Some of these approaches may be more successful if state and/or regional support is provided. The Rural Health Advisory Committee recommends that communities interested in strengthening their ambulance services consider adopting one or more of the following approaches:

  - Create public service announcements geared toward encouraging community service. Creating more statewide and community recognition of ambulance services would address the "invisibility" resulting from confidentiality issues described earlier in this report. Statewide, regional, or local awareness efforts might help to support ambulance services and to attract new recruits to the service. Public service announcements might explain why even volunteer ambulance personnel need to be paid and how important volunteers are to the ambulance service. (See public service announcement examples from Trimont, Minnesota, and the state of Connecticut in Appendix F.)

  - Promote EMT training for seasonal residents, older workers, and members of new immigrant and other minority communities. One ambulance director in a popular vacation area noted that a number of people move to the area for the summer, including teachers and other seasonal employees. Making use of the skills of these part-time residents on the ambulance service would make sense. The tourism peak frequently coincides with the peak of ambulance runs and hospital utilization, so using members of the seasonal community to help meet these needs would help balance this situation. In addition, older, retired workers are often looking for

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advocators helping to educate the community and encourage healthy behaviors, and back-ups to home health nurses doing the things that they cannot or will not do."

volunteer opportunities that will help them feel useful to the community. Newer immigrants and other members of minority groups form another group that may be available for volunteer opportunities but are not routinely tapped in rural ambulance service recruitment efforts.

- Increase the number of CPR and other safety classes that ambulance squads offer in the community. This would increase the pool of people in the community with basic medical training. It would also provide an opportunity for ambulance personnel to talk about needs of the local ambulance squad and the roles of EMTs in the community, thereby potentially recruiting more volunteers and increasing the willingness of local employers to have their employees on the squad and available to leave work for runs.

- Develop ambulance auxiliaries and student ambulance programs. Auxiliaries could help with paperwork, help maintain ambulance garages, and perform other duties that both assist in running an EMS organization and bring more people into contact with the ambulance service to enhance visibility and create a better understanding of how the service works. Student programs could introduce students to ambulance work, CPR, and other skills that could be helpful in their communities and would expose them at an early age to what is involved in this type of volunteer activity.

- Offer milestone awards to ambulance personnel. A program of years of service awards or other awards prior to retirement would help to recognize the valuable contribution of ambulance staff. In two of the three case study communities, all of the ambulance personnel felt that their communities recognized them for their efforts. In the third community, one third felt their communities did not recognize these contributions. Clearly, ambulance personnel are attuned to recognition from their community. Service awards and recognition would go a long way toward supporting personnel in their ongoing work on the local ambulance services.

- Proactive cleaning of seniors' chimneys in the fall. One local department noted that each fall a number of chimney fires resulted in calls to the fire department and to the ambulance, either for standby or because of injury to the persons in these homes. In order to reduce this problem, the department began this prevention program, which has resulted in fewer calls for such fires, saving valuable resources in the community.

- Proactive snow plowing. Many ambulance personnel stated that they arrive at homes, particularly of senior citizens who do not drive, only to find that the driveways have not been plowed. In trying to reach the ill or injured person, they either have to try to push through to reach the home or get out of the rig and shovel their way in. This wastes valuable response time that could make a difference to the victim.

- Promoting address markings and maintenance of entranceways and decks would assist services in saving time and fuel in responding to calls. Many ambulance personnel in tourist areas said that address markings are especially important for seasonal or vacation residents. Vacationers often cannot give directions to their location or do not have adequate address markings to assist responders in reaching their location on a timely basis. This would apply to sheriff and fire calls as well as ambulance calls. One ambulance director described a scene in which the EMTs entered across a creaky deck, then had to transport the patient. The deck was not strong enough to support the cot and the crew, so they had to deal with this structural problem in addition to the medical emergency for which they were summoned. Site visit participants believed public service announcements or local awareness efforts could help reduce such problems.

Suggested Regional or Other Approaches

In its charge to the Rural Health Advisory Committee, the Legislature directed the Committee to make recommendations for addressing alternative delivery models for rural volunteer ambulance services, including multi-provider service coalitions, purchasing cooperatives, regional response strategies, and different utilization of first responder and rescue squads. This section addresses that portion of the legislative charge.

- **Distance and response time issues**
  In discussing possible regional approaches to ambulance services, respondents at each case study site expressed concern about distances ambulance services need to cover, and related response times. Responses can be summed up by this director's comment:

  > The distance to the hospital is substantial and critical. The regional approach should not be combining services, bigger PSAs, or anything that will increase distance and response time.

  Another community resident responded:

  > The Legislature has the opportunity to impact health outcomes in the state by being supportive of ambulance services. EMS is a reasonable and basic way to meet health needs. Distances can't be negotiated. You need to fund EMS on the quality of the service that is provided, not the number of people in the area. There is a geographic situation that needs to be taken care of—because the distances are greater, you can't deny service and make the service take even longer. You have to take response time into account in providing ambulance service.

  A fear expressed by some ambulance service personnel, particularly those at BLS services, is that there is a push to have the closest ALS service absorb them. One captain said that his service operated between two ALS services, and that while he felt his service was providing excellent response, they were clearly a "takeover target." At the same time, some small ambulance services experiencing financial distress since implementation of the Medicare fee schedule have turned to larger ALS services for assistance in maintaining their financial viability. Some ALS services have reached out to assist their smaller neighbors when the smaller services have been unable to maintain shift coverage. It is important to discover the balance between maintaining local control and using shared approaches to maximize efficiencies and services to those needing an ambulance.

  In conclusion, there appear to be tensions with regard to examining regional approaches to ambulance service operations. Many respondents believed that some regional or statewide approaches could be implemented to improve ambulance operations and insure the future viability and availability of these services,[74] taking time and distance realities into consideration. These approaches are listed below.

[74] Rowley, Tom. "Solving the Paramedic Paradox." *Rural Health News*. Vol. 8, No. 3. Fall, 2001; p.5, says that "…scare resources, large service areas and, in some cases, difficult terrain point to the need for EMS units in some rural areas to work together in ways that strengthens or stretches their ability to provide service."

- **Regional or shared training**
  Regional workshops and training in areas such as billing and coding, fundraising and grant writing could offer opportunities to learn together and share information that might help ambulance services improve their operations.

- **Shared administrative support**
  In some parts of Minnesota, ambulance services located near one another have entered into shared administration agreements. For example, Tracy Area Medical Services has led efforts in southwestern Minnesota to consolidate ambulance services serving seven small communities. (See Appendix I) This includes hiring a shared medical director, developing standardized protocols, developing a training curriculum, group purchasing, and creating a centralized billing system. Short of consolidation, however, sharing administration while retaining the individual identities of ambulance services can create efficiencies for all of the ambulance services involved: all of the communities retain their service and their ambulance but billing and other administrative services are handled centrally.

- **Ambulance buddy system**
  A buddy system for ambulance services might facilitate mutual improvement. For example, incentives could be created for a well-run service operating near a struggling service to work together to strengthen the second service and build working relationships for the future. This should be done in a way that mitigates fears by the struggling service of being taken over by the other service, unless that would be a mutually desirable outcome.

- **Improved coordination with fire and law enforcement**
  Better coordination with fire and law enforcement would create efficiencies in rural areas. Fire and ambulance districts don't necessarily match, and should be examined to see if improvements could result from realignment of these districts. In addition, opportunities for ambulance, fire, and law enforcement to work together, train together, and have positive interactions could help strengthen the quality of services provided by all three entities. First responders should be encouraged to serve on the ambulance squad (possibly as a driver, for example) as a way to introduce them to ambulance work and potentially recruit them as future EMTs. In addition, ambulance services could offer to pay for first responder training for community members who want to get involved but may not be ready to make the commitment to EMT training.

- **Improved communication among EMS actors**
  Relationships among members of the EMS community could be enhanced through improved communication. An examination of how these various actors work together or could work together could strengthen the EMS system. Better defining EMSRB's role as a regulatory body, and how that role fits with the roles of the regional entities might enhance relationships and therefore the effectiveness and efficiency of the system. Several people in the case study communities commented that ambulance personnel are underrepresented on the EMSRB and that a stronger voice might bring forward issues specific to ambulance services.

- **Purchasing cooperatives**
  Group purchasing of ambulances and medical supplies is an effective way to achieve economy of scale purchase power equal to or exceeding that of large ambulance services. This mechanism was made possible by a 1997 statute[75] adding municipal ambulance services to the state's bidding law

[75] Minnesota Statutes 2002, Section 471.345, Subdivision 10.

exemption originally designed for municipal hospitals. One very successful model is the North Central EMS Cooperative, which was started by three Minnesota ambulance services (Gold Cross, HealthEast and Rice Memorial Hospital-Willmar), and has grown to 300 members in nine states. The cooperative members have purchased 96 ambulances in three years, with ambulance purchase savings ranging from $25,000 for small services to $5,000 for large services. A collective $1 million per year is currently purchased through the coop in medical supplies. Other rural health care providers, such as hospitals and clinics, are taking advantage of the cooperative as well, and reporting financial savings and expedited service.

- **Role of EMS in non-emergency medical transportation**
  Finally, an area for further exploration relates to how the EMS system could work with or in place of other medical transportation in areas where such transit options do not exist. Ambulance services sometimes find themselves in the position of being called to provide transport to a person who might be transported by other means, but such means do not exist in the local community. Medicare and other payers do not reimburse for such services because these transports don't meet the definition of emergency medical services. A number of site visit participants suggested further exploration of how ambulance services could provide and be reimbursed for non-emergency medical transportation in areas where such services do not exist. Some services have a second ambulance as a backup that might be used for such purposes.

Appendices

Appendix A

Legislative Charge

Legislative Charge

Rural Health Advisory Committee
Rural Ambulance Services Study

Chapter 9, Special Session Law
Omnibus Health and Human Services Appropriations Bill

Article 17
Section 3, Subd 3

[RURAL AMBULANCE STUDY.] (a) The commissioner shall direct the rural health advisory committee to conduct a study and make recommendations regarding the challenges faced by rural ambulance services related to:
personnel shortages for volunteer ambulance services; personnel shortages for full-time, paid ambulance services;
funding for ambulance operations; and
the impact on rural ambulance services from changes in ambulance reimbursement as a result of the federal Balanced Budget Act of 1997, Public Law Number 105-33.
(b) The advisory committee may also examine and make recommendations on:
(1) whether state law allows adequate flexibility to address operational and staffing problems encountered by rural ambulance services; and
(2) whether current incentive programs, such as the volunteer ambulance recruitment program and state reimbursement for volunteer training, are adequate to ensure ambulance service volunteers will be available in rural areas.
(c) The advisory committee shall identify existing state, regional, and local resources supporting the provision of local ambulance services in rural areas.
(d) The advisory committee shall, if appropriate, make recommendations for addressing alternative delivery models

for rural volunteer ambulance services. Such alternatives may include, but are not limited to, multiprovider service coalitions, purchasing cooperatives, regional response strategies, and different utilization of first responder and rescue squads.

(e) In conducting its study, the advisory committee shall consult with groups broadly representative of rural health and emergency medical services. Such groups may include: local elected officials; ambulance and emergency medical services associations; hospitals and nursing homes; physicians, nurses, and mid-level practitioners; rural health groups; the emergency medical services regulatory board and regional emergency medical services boards; and fire and sheriff's departments.

(f) The advisory committee shall report its findings and recommendations to the commissioner by September 1, 2002.

(g) Data on an emergency medical services provider organization, private or nonprofit payor, or provider that are collected and maintained as part of this study are private data on individuals or nonpublic data as defined in Minnesota Statutes, section 13.02.

Appendix B

Minnesota Ambulance Service Survey

MINNESOTA
MDH
DEPARTMENT OF HEALTH

Minnesota Ambulance Service Survey

Instructions:

- Please direct this form to the individual in your organization that is in charge of hiring and/or recruiting.
- Please respond to the questions in Sections One through Five.
- All questions on this survey apply to the individual ambulance service/site.

Ambulance Site	**Place Mailing Label Here**

Contact Information

Name and Title of Person Completing Survey _____

Phone Number _____

Fax Number _____

Section One: Ambulance Staff	**Volunteer**		**Paid**
1. How many total ambulance personnel are currently on the roster at this ambulance service/site? **Response 268/272 98.6 %**	**full-time**	_____	_____
	part-time	_____	_____
2. How many total ambulance personnel were successfully added to the roster at this ambulance service/site in **2001**? **Response 268/272 98.6 %**	**full-time**	_____	_____
	part-time	_____	_____

3. Are you trying to add volunteer or paid ambulance staff to your roster at this time? Yes _____ No _____

Response 247/272 90.1 %

Section Two: Current Ambulance Operations

4. Do you have difficulty covering shifts?

Yes _____ → What shifts? *(check all that apply)*

No _____ **Response 266/272 97.8 %**

- ☐ Days
- ☐ Nights
- ☐ Weekends
- ☐ Holidays

5. Indicate your top **TWO** reasons, (with **1** signifying the most important reason) for not being able to cover all ambulance shifts.
Response 214/272 78.7 %

____ 1. Conflicts with employer
____ 2. Distance from employer
____ 3. Daycare/childcare obligations
____ 4. Family issues
____ 5. Other *(specify)*_____
____ 6. Other *(specify)*_____

Section Three: Ambulance Staff Characteristics

6. Please indicate the number of volunteer and paid staff on your ambulance roster by gender. **Response 264/272 97.1 %**	*Volunteer Staff*	*Paid Staff*
	_____ Male	_____ Male
	_____ Female	_____ Female

*** Please Turn to the Next Page ***

7. Please indicate the **number** of volunteer and paid staff on your roster by how long they have served/been employed at this ambulance site. **Response 258/272 94.8 %**	*Volunteer Staff* _____ less than one year _____ 1 to 2 years _____ 3 to 5 years _____ 6 to 10 years _____ more than 10 years	*Paid Staff* _____ less than one year _____ 1 to 2 years _____ 3 to 5 years _____ 6 to 10 years _____ more than 10 years
8. Please indicate the **number** of volunteer and paid staff on your roster by their age using the following age categories. **Response 255/272 93.8 %**	*Volunteer Staff* _____ 18-19 _____ 20-29 _____ 30-39 _____ 40-49 _____ 50-59 _____ 60-69 _____ over 70	*Paid Staff* _____ 18-19 _____ 20-29 _____ 30-39 _____ 40-49 _____ 50-59 _____ 60-69 _____ over 70
9. Please indicate the **number** of volunteer and paid staff on your roster by their ability to speak the following foreign languages. **Response 204/272 75.0 %**	*Volunteer Staff* _____ Spanish _____ Hmong _____ Somali _____ Russian _____ Other *(specify Other)* _____	*Paid Staff* _____ Spanish _____ Hmong _____ Somali _____ Russian _____ Other *(specify Other)* _____

Section Four: Ambulance Finances and Infrastructure

10. Are you the person responsible for maintaining and reporting financial information for your ambulance service?

No _____ →

Yes _____ ↓ Complete questions 11 through 18.

Please indicate the person who is responsible for this information in the space below and return the survey in the postage paid-envelope

Name and Title of Person _____

Full Mailing Address _____

Phone Number _____

Fax Number _____

11. In fiscal years 1999 and 2000, how many runs did your ambulance service do annually?

1999 Response 228/272 83.8 %
***2000 Response 270/272 99.3 %**

*Information from two services that did not respond during the formal survey process was collected through phone contacts.

	FY1999	**FY2000**
Billable Runs	_____	_____
Non-Billable Runs	_____	_____
Total Runs	_____	_____

*** Please Turn to the Next Page ***

12. In fiscal years 1999 and 2000, what percent of your ambulance service's charges were billed to Medicare? **1999 Response 210/272 77.2%**
2000 Response 228/272 83.8%

	1999	2000
	_____ %	_____ %

13. In fiscal years 1999 and 2000, what were your ambulance service's total annual operating expenses? **1999 Response 192/272 70.6%**
2000 Response 198/272 72.8%

Note: Total expenses include personnel, facilities and equipment, and general and administrative expenses. Please round to the nearest thousand.

	1999	2000
	$ _____	$ _____

14. In fiscal years 1999 and 2000, what were your ambulance service's personnel expenses?

Note: Please round to the nearest thousand.

1999 Response 197/272 72.4%
2000 Response 204/272 75.0%

	1999	2000
Salaries	$ _____	$ _____
Travel	$ _____	$ _____
Employee Benefits	$ _____	$ _____
Education/Training	$ _____	$ _____
Other *(specify)* _____	$ _____	$ _____
Other *(specify)* _____	$ _____	$ _____
Total Personnel Expenses	**$ _____**	**$ _____**

15. In fiscal years 1999 and 2000, what was your ambulance service's total net annual revenue? **1999 Response 185/272 68.0%**
2000 Response 195/272 71.7%

Note: Total net revenue includes direct gross charges, non-ambulance revenue, discounts and write-offs. Please round to the nearest thousand.

	1999	2000
	$ _____	$ _____

16. In fiscal years 1999 and 2000, what percent of your ambulance service's total revenue came from the following sources?

1999 Response 180/272 66.2%
2000 Response 195/272 71.7%

	1999	2000
Medicare *(those over 65 yrs old)*	_____ %	_____ %
Medical Assistance *(Fee for service)*	_____ %	_____ %
HMO and Insurance	_____ %	_____ %
Private Pay/Self Pay	_____ %	_____ %
Contract Services	_____ %	_____ %

17. In fiscal years 1999 and 2000, what revenue did you receive from the following sources?

1999 Response 189/272 69.5%
2000 Response 200/272 73.5%

	1999	2000
Public Subsidy *(federal, state, county, city, township and other local funds)*	$ _____	$ _____
Personal Gifts/Private Grants	$ _____	$ _____
Training Reimbursement	$ _____	$ _____
Other (specify) _____	$ _____	$ _____
Other (specify) _____	$ _____	$ _____
Other (specify) _____	$ _____	$ _____

*** Please Turn to the Next Page ***

		Vehicle Model Year	Age of Radio	Current Mileage	Status *(Check appropriate box)*
18. Please indicate the number of vehicles your ambulance service operates by the vehicle model year, age of the radio, mileage, and ownership status. **Response 247/272 90.8 %**	Vehicle #1	_____	_____	_____	☐ Leased ☐ Owned
	Vehicle #2	_____	_____	_____	☐ Leased ☐ Owned
	Vehicle #3	_____	_____	_____	☐ Leased ☐ Owned
	Vehicle #4	_____	_____	_____	☐ Leased ☐ Owned
	Vehicle #5	_____	_____	_____	☐ Leased ☐ Owned
19. Are you ready to accept Medicare assignment? **Response 225/272 82.7 %**	_____ Yes _____ No				

Appendix C

Expenses and In-Kind Volunteer Contributions

Expenses and In-Kind Volunteer Contribution Estimate

Total Operating Expenses Analysis

Each service was asked to provide an estimate of total operating expenses for 2000 that included personnel, facilities and equipment, and general and administrative expenses. Almost three-quarters (72.8) of the 272 services were able to respond to this question. In order to provide a statewide estimate of the total operating costs for all services, an estimate for the 73 services which did not fill out that question on the survey was calculated based on the total number of runs each service made. One very unique service, a fixed-wing multi-state air service, was excluded from the analysis. Total run information from the survey or EMSRB administrative data was available for each of the 73 services.

The first step was to calculate an average per-run cost estimate based on a combination of: 1) service ownership and type of ambulance service and 2) service ownership and region of operations, for the 194 services that provided both total operating expense and run information. Once calculated, the average per-run cost was used to estimate total expenses for a service that did not provide expense data. The following estimates were employed:

- Fifty-nine (80.8 percent) of the per-run cost averages that were utilized came from the service ownership and type combination,
- Twelve estimates were calculated from the service ownership and region of operations combination, and
- Two were calculated using the state per-run cost average since no other data were available.

For example, there were 31 city-owned BLS services that did not provide operating expense information but did provide total runs data. Of those that did provide both expense and total run information, 90 were BLS services owned by a city with an average per-run expense of $357. This average per-run expense estimate for city-owned BLS services was multiplied by the number of total runs each service reported to create a specific total expense estimate for that service. A similar procedure was used for the other 42 services that did not report operating expenses.

Using this procedure to estimate non-respondent total operating expenses produces an estimate of $194,089,969, with a standard deviation of $2,833,963. To create the total operating expense range that appears in the text on page 42 the standard deviation was doubled ($5,667,926) and simultaneously subtracted and added from the total estimate ($188,422,043 to $199,757,895). Using a method for calculating total operating expenses that is sensitive to operational differences between services is important. If the estimate above assumed that all ground-based services were alike and the statewide average of $414 per-run was applied, the total expense figure would be almost $3 million less ($191,201,948).

In-Kind Volunteer Contribution Estimate

The following procedure was used to create the in-kind volunteer contribution estimate wage cost estimate for all volunteer shifts in rural Minnesota. Excluding air-based services, there are 231 individual ground-based rural services (this is not equivalent to the number of services in the survey due to the aggregation of some surveys). Of these, 154 are identified by EMSRB as being all volunteer

services. EMSRB also identified 203 of the 231 services as have either all volunteers or a mix of staff (both paid and volunteer).
The annual coverage cost estimate is calculated by aggregating all of the hours to cover each 24-hour shift. That is: 24 (hours) X 7 (days) X 52 (weeks) = 8,736 hours. According to the Minnesota Department of Economic Security (MDES), the wage estimate for EMTs/Paramedics outside of the state's MSAs (Metropolitan Statistical Areas) is $10.44 for 2002.[76] Using this wage, estimate produces a total annual coverage cost of $91,204 per shift. Since each service is required to have two staff on hand, the total shift coverage wage cost is doubled ($182,408).

To create the total wage cost range that appears in the text on page 42, the annual coverage cost for two shifts is applied to the 154 services creating a the total cost for rural services of $28,090,832 (the lower estimate of the range). The upper estimate includes the annual coverage cost for two shifts applied to the 203 services creating total cost for rural services of $37,028,824.

Different wage estimates can also be substituted for the median non-MSA hourly wage that appears in the equation. MDES includes both EMT and a para/EMTs in their wage estimates for EMTs/Paramedics. Since para/EMTs earn, on average, more than their EMT counterparts a higher wage could be substituted in the equation — the non-MSA MN average hourly wage $11.00 or a statewide wage estimate (state average =$13.87; state median=$13.11). In addition, the wage estimates calculated above do not factor in pay for an ambulance captain to perform duties such as scheduling, maintaining training records, recruiting, and fundraising. Currently, many captains receive little or no compensation. Moving to a paid staff model would probably necessitate a full time captain, paid at a professional level.

[76] "Minnesota Occupational Employment and Wage Statistics Salary Survey." Minnesota Department of Economic Security. <http://www.mnworkforcecenter.org/lmi/salary/> (December 11, 2002)

Appendix D

Minnesota Ambulance Service

Survey Response Rates

Survey Response Rates

The Emergency Medical Services Regulatory Board (EMSRB) licenses all ambulance services that operate in the state of Minnesota. A license is usually issued directly to a service operating in a specific primary service area of the state. Since several services can be owned by the same firm and one service can hold multiple licenses, the number of services currently operating in Minnesota does not match the total number of licenses that have been issued.

At present, EMSRB data shows that there are 310 licenses in the state. Two of these licenses, according to the EMSRB, are not currently matched with an EMS service provider — one has expired and the other has not been allocated. Another 20 services have more than one license for their site. For example, Hennepin County Medical Center (HCMC) has two licenses — one for advanced life support and another for specialized life support-advanced. That leaves a total of 288 individual services. For the Minnesota Ambulance Service Survey, a survey was sent to all licensed services with a base ambulance address. Several services that have central personnel and billing offices chose to respond for all of the services licensed within their firm. This reduces the total number of services by 16, which leaves the total population of services that could respond to the survey at 272.

The survey instrument was mailed to all 272 services in January 2002. Extensive follow-up contacts, through phone calls, faxes and additional survey mailings, were completed between February and September 2002. Four services did not reply to the survey during the formal contact process. The final survey response rate is 98 percent. Data from EMSRB and phone calls to specific services was used to fill gaps in the survey data. With regard to survey instrument, some services were unable to complete all of the survey questions, especially those relating to service operations and finances, so a proportion of surveys are incomplete or have very few questions filled out. In addition, since the survey was voluntary some services chose not to complete all of the questions. Response rate tables for the essential workforce and financial questions on the survey appear on the next two pages.

Workforce

Response Rates for Workforce Questions by Service Type, Ownership Type, EMSRB Region and Primary Service Area Population			
Response Rates by Service Type	**Survey**	**Total**	**Response Rate**
Basic Life Support	194	194	100.0%
Advanced Life Support	62	63	98.4%
Specialized Life Support - Advanced Air	6	8	75.0%
Specialized Life Support - Advanced	4	4	100.0%
Specialized Life Support - Basic	2	3	66.7%
Total	**268**	**272**	**98.5%**
Response Rates by Ownership Type	**Survey**	**Total**	**Response Rate**
City	140	140	100.0%
Non-Profit Corporation	46	48	95.8%
Hospital	32	32	100.0%
City/County	17	17	100.0%
For-Profit Corporation	12	14	85.7%
Other Non-Profit	10	10	100.0%
County	7	7	100.0%
Federal	3	3	100.0%
Partnership	1	1	100.0%
Total	**268**	**272**	**98.5%**
Response Rates by EMSRB Region	**Survey**	**Total**	**Response Rate**
Northwest	21	21	100.0%
Northeast	34	34	100.0%
West Central	21	22	95.5%
Central	31	31	100.0%
Metro	27	29	93.1%
Southwest	60	60	100.0%
Southeast	43	44	97.7%
South Central	31	31	100.0%
Total	**268**	**272**	**98.5%**
Response Rates by Primary Service Area Population	**Survey**	**Total**	**Response Rate**
NA	9	10	90.0%
1-1,999	27	27	100.0%
2,000-3,999	61	61	100.0%
4,000-5,999	43	43	100.0%
6,000-7,999	29	29	100.0%
8,000-9,999	14	14	100.0%
10,000-14,999	21	21	100.0%
15,000-19,999	16	16	100.0%
20,000-39,999	26	26	100.0%
40,000-99,999	10	11	90.9%
100,000+	12	14	85.7%
Total	**268**	**272**	**98.5%**

Financial

Response Rates for Financial Questions by Service Type, Ownership Type, EMSRB Region and Primary Service Are Population			
Response Rates by Service Type	**Survey**	**Total**	**Response Rate**
Basic Life Support	163	194	84.0%
Advanced Life Support	50	63	79.4%
Specialized Life Support - Advanced	3	8	37.5%
Specialized Life Support - Advanced Air	4	4	100.0%
Specialized Life Support - Basic	2	3	66.7%
Total	**222**	**272**	**81.6%**
Response Rates by Ownership Type	**Survey**	**Total**	**Response Rate**
City	121	140	86.4%
Non-Profit Corporation	40	48	83.3%
Hospital	21	32	65.6%
City/County	12	17	70.6%
For-Profit Corporation	12	14	85.7%
Other Non-Profit	8	10	80.0%
County	6	7	85.7%
Federal	2	3	66.7%
Partnership	0	1	0.0%
Total	**222**	**272**	**81.6%**
Response Rates by EMSRB Region	**Survey**	**Total**	**Response Rate**
Northwest	18	21	85.7%
Northeast	28	34	82.4%
West Central	18	22	81.8%
Central	27	31	87.1%
Metro	21	29	72.4%
Southwest	50	60	83.3%
Southeast	34	44	77.3%
South Central	26	31	83.9%
Total	**222**	**272**	**81.6%**
Response Rates by Primary Service Area Population	**Survey**	**Total**	**Response Rate**
NA	5	10	50.0%
1-1,999	22	27	81.5%
2,000-3,999	52	61	85.2%
4,000-5,999	33	43	76.7%
6,000-7,999	27	29	93.1%
8,000-9,999	9	14	64.3%
10,000-14,999	21	21	100.0%
15,000-19,999	14	16	87.5%
20,000-39,999	20	26	76.9%
40,000-99,999	8	11	72.7%
100,000+	11	14	78.6%
Total	**222**	**272**	**81.6%**

Appendix E

Case Study Communities

Community A

Community A is located in southern Minnesota, with a population of about 2,500. The ambulance primary service area includes between 4,000 and 5,000 people and covers 200 square miles. Up to 75,000 tourists visit the area for their summer festival and a major trade show. The town is home to a consolidated high school. Area employers include a building materials company and a food processing company. There is no hospital in town. Health care services consist of a branch clinic, a nursing home, and the ambulance service. The town recently added senior assisted living.

The ambulance service was formerly operated by the funeral home. It is currently a city-owned service. When the local hospital closed about a decade ago, the local community made a commitment to keep the ambulance service viable. Squad members recall feeling a lot of support from the community at that time. Currently, the EMS medical director is a physician at the local clinic.

The ambulance garage is a newer building with a kitchen and meeting area, and separate ambulance bays. It was built with the help of a local company who provided the building materials at nominal cost. The ambulance service performed slightly more than 225 runs last year, all going outside the PSA to one of three hospitals. The closest of these facilities is 26.6 miles away.

The current squad consists of 18 members, but they feel they need 25 to adequately staff the service. By way of contrast, the local fire squad has a full roster of 25 members, the maximum allowed on the squad at one time. As far as recruitment for the ambulance service, the last class consisted of 6 trainees, at a cost of $3,600. Only one trainee completed the course and joined the squad. The state will reimburse the squad $600 for the one new member's training if that person remains on the squad for one year.

The ambulance director in Community A earns $100 per month. There are three other officers who assist with training, record keeping, purchasing, and other duties. They earn from $75 per month to as little as $10 per month. For squad members, there is no call pay. Pay consists of $20 for the first hour of a run and $8 per hour for each additional hour. A typical run lasts 2 to 3 hours.

Billing for the service is handled by a part time bookkeeper employed about 15 hours per month. This person prepares the materials for a billing service that completes the billing process for a ten percent fee. Turnaround time for claims is from 45 days for commercial insurance to as long as six months for Medicare reimbursement. The service recently raised their basic charge to $350 in anticipation of the new Medicare fee schedule. They estimate that Medicare runs approach 80% of their total ambulance runs.

The biggest challenges they face are recruitment ("how do you entice people to join?") and retention of trained members. The director doesn't feel that the pay or retirement is enough to keep anyone on the squad.

Overall, this community sees their ambulance service as a health care asset. It is mentioned as a selling point in their chamber of commerce brochure. They believe that having an ambulance in town will attract rural retirees to live in their community. They describe their fire and ambulance personnel as "local heroes—we keep putting the wrong people on pedestals in our society—these are the people that should receive recognition."

Community B

Community B in central Minnesota has a population of about 150 residents and their PSA serves 1,800 people. There are about 1,000 visitors per year to the area. Since the creamery closed, other than the Board and Care home and the school, there are no employers in town. Residents feel they are becoming a bedroom community to a larger neighboring town. Health care services in the community consist of a M-W-F clinic and the ambulance service. The ambulance service is a joint fire ambulance, owned by the city, and was incorporated in 1953. The service works with all 14 fire departments in the county. Its primary service area is about 260 square miles and they performed about 150 runs in 2001. Runs have increased 12 percent in the last five years. The majority of runs are "a high number of cardiac and all types of trauma." The two closest hospitals are each about 25 miles away. The EMS medical director works at one of these facilities. All transports are outside of Community B's PSA.

Ambulance space is inadequate here. The squad is renting off-site storage space and they have no training space. Sleeping quarters help to attract volunteers from neighboring communities, but no such facility is available here. Ambulances and fire engines share the garage. The two ambulances are 1990 and 1997 models. They try to maintain their primary vehicle at 8 to 10 years old and their second rig at no more than 20 years old. They recently rebuilt one of their ambulances so that they now have comparable configurations. Previously they had to drive somewhere to get a temporary rig when their primary rig was down since the backup rig was not completely equipped.

There are about 19 people currently on the squad. Covering shifts is difficult, particularly daytime shifts, because everyone works outside of town. They also have difficulty due to lack of childcare for squad members and suggested that perhaps schools could become involved in solving this daycare problem. The aging population leaves them "a smaller pool from whom to draw personnel" and they have concerns about future retention and may have to pay volunteers for standby time to attract more people to the service.

The ambulance captain estimated that about 60 percent of the ambulance runs are Medicare patients. In 2000, Medicare "flatly denied 11 percent of calls—no recourse." It takes between four weeks and three months to be reimbursed by most sources, with Medical Assistance being the longest turnaround time. The squad's billing person received about 20 hours of training for the job, covering all the different payer types. They have always accepted Medicare assignment because otherwise "grandmas won't call if they going to get a bill." They anticipate a 25 percent loss of revenue under the new Medicare fee schedule. They fear that MA[77] and other insurance companies will follow with reduced reimbursements.

Last year, the ambulance service received additional support of $11,000 from the county, donations of about $19,000, and grants from a hospital and reservation of about $6,000 to cover their expenses. They are trying to set up a special taxing district to support the service. They also hold fundraisers to buy equipment.

Community C

Community C, located in northern Minnesota, has a population of about 1,575. The ambulance PSA covers about 7,800 people and there are about 10,000 visitors to the area per year. The PSA covers 468 square miles. The ambulance service was privately owned until 1990, when it declared bankruptcy. Currently, the hospital owns the ambulance service, as well as operating a long-term care

[77] It should be noted that in most cases, the legislature authorizes reimbursement rates.

facility and a home health agency. If patients need transport for care beyond what is provided at the local hospital, they are typically transported between 75 and 110 miles to larger facilities. These runs take from three to six hours to perform. The average age of ambulance personnel on the service is 38 with six to eight years of experience. Since the members of this service are not volunteers, they do not qualify for the longevity program or training reimbursement.

The ambulance service performed about 500 runs last year. They have three ambulances: a 1995 with 20,000 miles, a 1996 with 120,000 miles that is only used for runs within PSA, and a 1991 with 170,000 miles**.**

This service sends postcard follow-ups to patients who have been transported for quality monitoring. If a negative response is received, the patient is called to determine what was not satisfactory, in order to improve services. In addition, they have been conducting a quality improvement initiative on response time. From time of page to being en route to the scene is targeted at five minutes or less. Only four runs have fallen short of the goal during the six months of this quality initiative. Previously they completed a QI project on chest pain and had very successful outcomes from that as well.

The service is currently short-staffed due to a recent resignation and a person being out for a back injury. The service would especially like more people for daytime coverage, weekend relief, and especially holidays. Some staff has not successfully made the transition to being cross-trained in the hospital. Ten people are cross-trained on hospital positions at the present time.

Squad members teach CPR at the local school and wellness classes for seniors free of charge. The community values having trained people circulating in the community as both a preventative and possible life-saving asset.

The ambulance service currently receives Medicare reimbursement about 70 days after billing. They believe this is down from 130 days because of some lobbying efforts by state officials and interest groups with CMS. The service accepted Medicare assignment prior to April 1, 2002.

There is no city support for the ambulance service. They receive $42,000 from the county—this will be going up to $67,000 to cover costs. The payment is based on $28 per household per year and $14 on seasonal and other properties. Slightly over 60 percent of reimbursement comes from Medicare and another 20 percent comes from Medical Assistance. Defibrillators were each purchased through grants—one from the Department of Health and one from a private foundation.

Appendix F

Recruitment Examples

Trimont seeks help for ambulance squad

TRIMONT – The Trimont ambulance crew is seeking a few good people. No experience required.

"We are a little short handed just now," says ambulance crew member Jeff Sinn. "We would love to have 20 people but only have about 14."

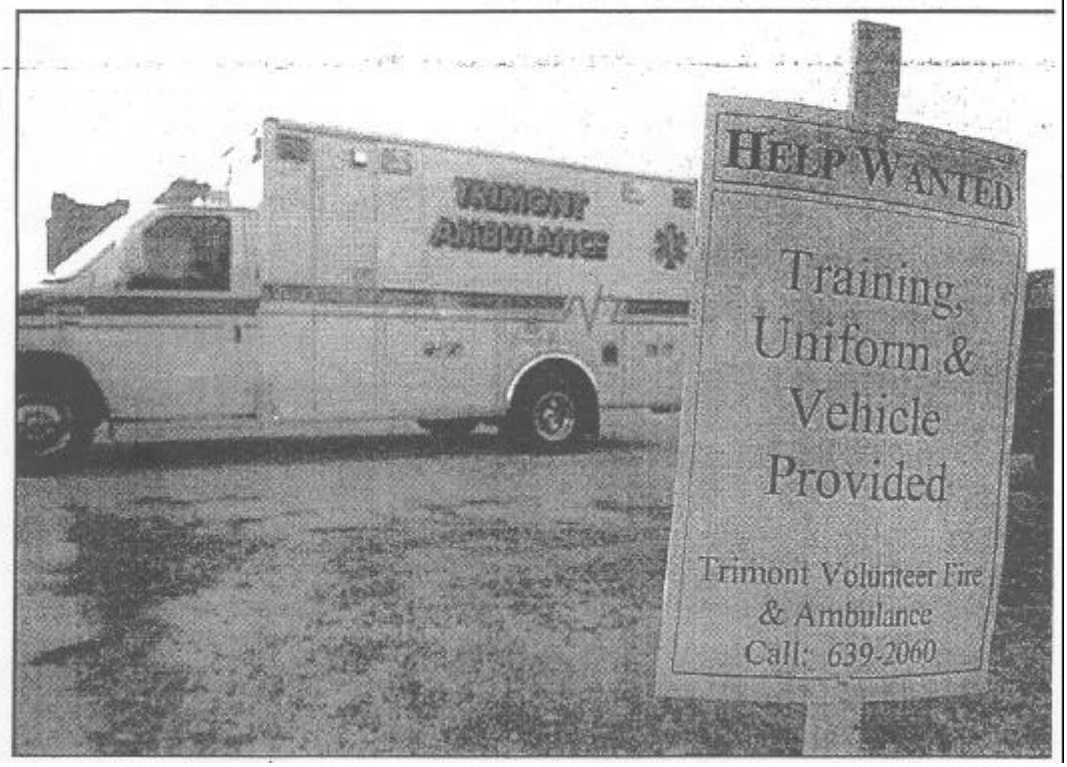
While there are enough people to staff the night-time crews, the daytime crew is short-staffed.

Trimont area residents willing to serve on the ambulance crew can be either male or female. While no medical background is necessary except for a CPR course, there is a 120 hour training session that is necessary before the job starts. (There is also a 24-hour refresher course every two years.)

"You will learn everything there is needed to know," adds crew member Kevin Kuehl. The city pays the training class and the uniform, plus pays $10 an hour while on a call.

Anyone interested in joining may call the Trimont city clerk (639-2060) or Jeff Sinn (639-2169).

Classes begin in January in Sherburn and will be held two days a week from 6:30-10:30.

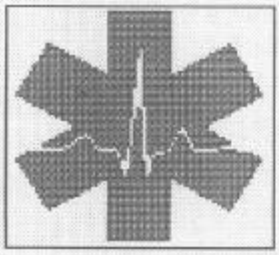


Source: "Trimont Seeks Help For Ambulance Squad." *West Martin News.* July 17, 2002.

Source: Flyer handed out at a local parade.

Looking for highly motivated persons for part-time work in rewarding career. Successful candidates receive personal satisfaction, exciting and challenging work. Workers needed 24 hours a day, 7 days a week.

Training, Uniform & Vehicle provided.



Trimont Volunteer Fire & Ambulance

For Information Call:

639-2060

Looking for highly motivated persons for part-time work in rewarding career. Successful candidates receive personal satisfaction, exciting and challenging work. Workers needed 24 hours a day, 7 days a week.

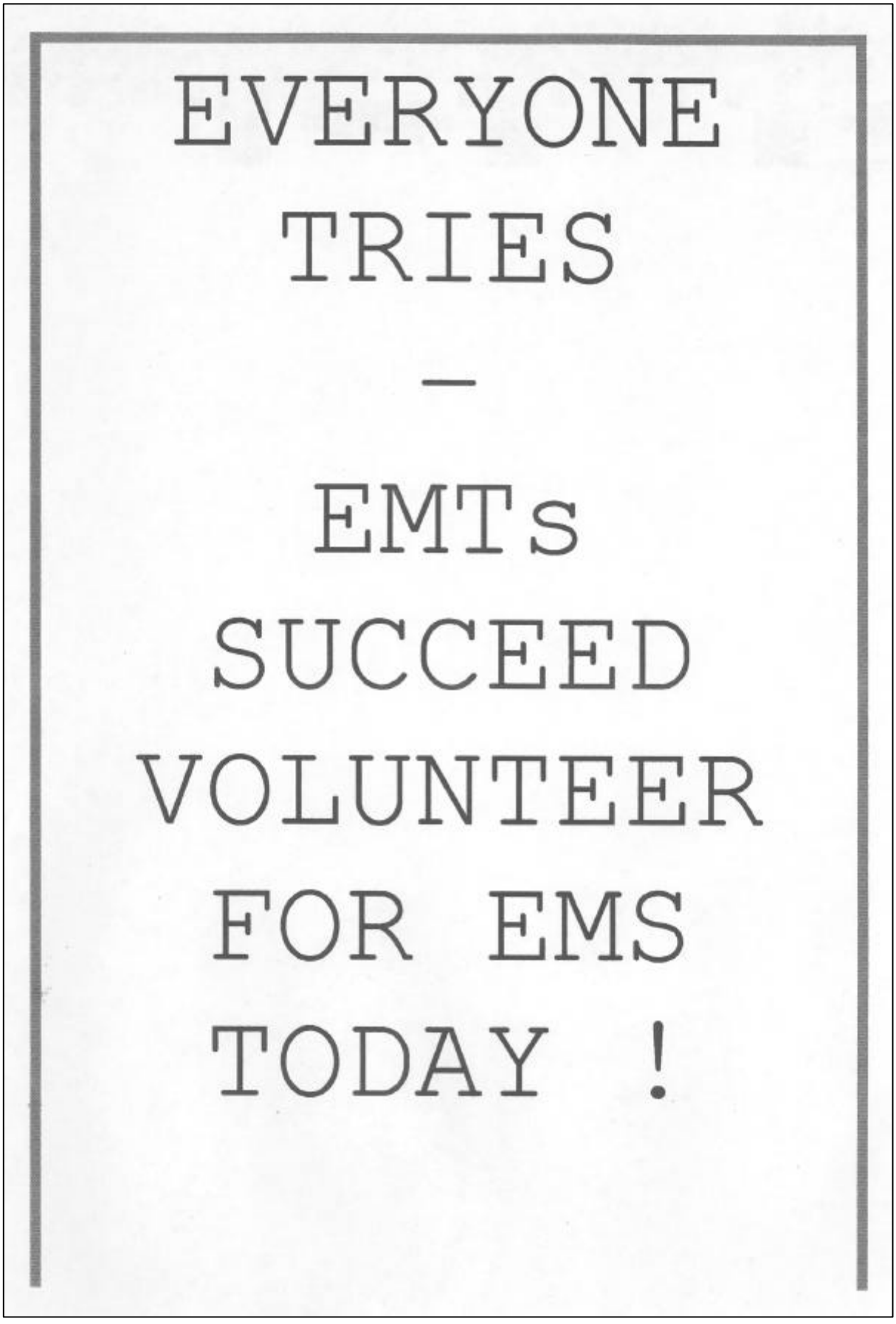
Training, Uniform & Vehicle provided.

Trimont Volunteer Fire & Ambulance

For Information Call:

639-2060

The next 5 pages are from the following source: Gagnon, Paul. “EMS Enhancement Study.” Connecticut Office of Rural Health, 2001.


EVERYONE
TRIES
—
EMTs
SUCCEED
VOLUNTEER
FOR EMS
TODAY !


SAVE A LIFE
WHILE
INVESTING
IN YOURS
VOLUNTEER
FOR EMS
TODAY !

ASK NOT WHAT

YOUR COMMUNITY

CAN DO FOR YOU…

BUT WHAT YOU CAN

DO FOR YOUR

COMMUNITY

VOLUNTEER FOR

EMS TODAY!

GRANDKIDS
DON'T LET
THEIR
GRANPARENTS
DOWN IN AN
EMERGENCY
VOLUNTEER
FOR EMS!
1-888-EMS-

Appendix G

Glossary of Selected EMS Terms

Glossary of Selected EMS Terms

Advanced Life Support- At least one EMT and one paramedic must staff an advanced life support ambulance. (A physician assistant or registered nurse who is an EMT and has passed the practical skills portion of the paramedic exam may also serve as the paramedic.) An ambulance service providing advanced life support must have a written agreement with its medical director to ensure medical control for patient care 24 hours a day, seven days a week.

Automatic External Defibrillator (AED)- A device used to deliver a controlled electric shock to a person in cardiac arrest. These devices are becoming more and more widespread and are designed for use by laypersons. They can be found in offices, shopping malls, and airports.

Balanced Budget Act of 1997 (BBA)- (Public Law 105-33) This legislation enacted the most significant changes to the Medicare and Medicaid programs since their inception 30 years ago. The two most important aspects of the act for emergency medical services were the creation of the Rural Hospital Flexibility Program and the implementation of a new national ambulance fee schedule.

Balanced Budget Refinement Act of 1999 (BBRA)- (Public Law 106-113) restored approximately $17 billion in Medicare payments to health care providers over a five-year period.

Basic Life Support- At least two EMTs (EMT-Basics) must staff a basic life support ambulance. (A physician assistant or registered nurse with skills deemed equivalent to an EMT by the EMSRB may serve as one of the required EMTs). Basic life support personnel must provide a level of care to ensure that: (1) life-threatening situations and potentially serious injuries are recognized; (2) patients are protected from additional hazards; (3) basic treatment to reduce the seriousness of emergency situations is administered; and (4) patients are transported to an appropriate medical facility for treatment.

Blood Borne Pathogen- Blood borne pathogens are disease-causing microorganisms that exist in blood and other bodily fluids. They include HIV and Hepatitis B. Both diseases can be fatal, and both can be avoided by observing universal precautions (wearing masks, gloves, protective clothing, using proper sterile procedures, etc). The Blood Borne Pathogen Standard, created by OSHA, affects any employee who may come in contact with human blood and other potentially infectious materials.[78]

Capitation- the practice by which a provider is paid a set amount (usually monthly) for each person enrolled in a plan to provide health care to the group, rather than paying fee for service. No additional money is paid to the provider based on the actual services received by the patient.[79]

Cardiopulmonary Resuscitation (CPR)- a technique used to revive an individual who has suffered life-threatening injuries resulting in stopped breathing/heartbeat. It involves both manual chest compressions and rescue breathing.

Comprehensive Advanced Life Support (CALS) – an educational course developed by a multi-disciplinary working group initiated by the Minnesota Academy of Family Physicians. The

[78] "Blood borne Pathogen Review." Berkley Lab. <http://www.lbl.gov/ehs/biosafety/BBP_Training/html/bbp_review.htm> (October 29, 2002).

[79] "Glossary of Health Care Terms." Minnesota Hospital and Healthcare Partnership. <http://www.mhhp.com /glossary.htm>(October 29, 2002)

program trains medical personnel (including physicians, mid-level practitioners, nurses, paramedics, and allied health care professionals) in a team approach to anticipate, recognize and treat life-threatening emergencies. CALS is partially financed through a legislative grant administered through the Minnesota Emergency Medical Services Regulatory Board.

Critical Access Hospital (CAH)- A small rural hospital that meets established state and federal criteria (including distance from the next nearest hospital) and has been designated by the Centers for Medicare and Medicaid Services (CMS). CAHs receive cost-based reimbursement for Medicare services. In Minnesota, they also receive cost-based reimbursement for some Medicaid services. CAHs are also allowed greater flexibility in staffing. In return, CAHs must:

- Make emergency services available 24 hours per day,
- Have no more than 15 inpatient beds,
- Maintain an annual average length of stay of 96 hours or less, and
- Participate in networking relationships with other health care providers.

Critical access hospitals and entities owned and operated by a CAH are exempt from the new ambulance fee schedule if no other ambulance provider or supplier operates within 35 miles of the service area.[80]

Critical Incident Stress Management (CISM) - EMSRB program that provides peer support for all emergency services personnel that have experienced a critical incident (accident, trauma, etc.) with services provided free of charge by trained emergency services personnel. In addition, pre-and post-incident awareness training, defusing, and debriefing are offered.[81]

Debrief - discussion and review occurring usually upon return from an ambulance call or in an established time window following a run in order to obtain useful information.

EMS Data Collection Project - the project, begun in 1999 by the Minnesota Emergency Medical Services Regulatory Board (EMSRB), was designed to create a system for collection of pre-defined emergency medical services (EMS) data from all licensed ambulance services in Minnesota. After conducting several pilot projects, the EMSRB contracted with a vendor to custom build a highly secure, Internet data collection program which is owned and operated by the EMSRB. Known as MNSTAR (Minnesota State Ambulance Reporting), the system is available at no charge to all licensed ambulance services. It provides ambulance services immediate access to a variety of reports about their own operations once they have entered their data. It will be an important tool for the EMSRB, as well as policymakers to assess the status of ambulance service in Minnesota and make recommendations for changes. MNSTAR became operational in April of 2002. By April 1, 2003, all ambulance services will be reporting data on each ambulance run to the EMSRB.

Fire District - According to Robert Dahm, Bureau Chief, Minnesota State Fire Division, "Fire districts which are outside a municipal boundary (when the municipality has a local fire department) are established by the departments, with the concurrence of their local government policy body (i.e. city council) typically in conjunction with town boards. These arrangements are usually in the form of a contract for service with the fire department, and can, and do, periodically change." Fire districts, unlike EMS primary service areas, are not established by any state agency. If fire districts and PSAs

[80] Gundling, Richard. "Ambulance Services Move to a New Payment Method." *Healthcare Financial Management.* May 2002; p. 80-81.
[81] "Critical Incident Stress Management." Emergency Medical Services Regulatory Board. <http://www.emsrb.state.mn.us/cism.asp> (October 29, 2002).

overlap, the sheriff or other local enforcement officer works with both groups to establish a primary assignment for a given area.

Health Insurance Portability and Accountability Act (HIPAA) - This law, passed by Congress in 1996, helps to protect patient rights to health coverage during events such as changing or losing jobs, pregnancy, moving, or divorce. It also provides rights and protections for employers when getting and renewing health coverage for their employees.[82] It also has provisions for administrative simplification. The act "establishes national standards for electronic health care transactions and national identifiers for providers, health plans, and employers. It also addresses the security and privacy of health data."[83]

Insurance - ambulance services must carry liability and workers' compensation insurance. According to ambulance professionals, due to the dangerous nature of the job, it is very difficult for providers both to find coverage and also to find affordable rates. Deductibles and premiums are climbing sharply and companies continue to pull out of the emergency services sector.

Intercept - usually occurs when a basic life support crew determines that a patient needs more advanced care. They then request that an ALS crew with paramedic either meet them at the scene or at some point on the way to the nearest medical facility to provide this care.

Longevity Award and Incentive Program - This program provides a one-time payment for retiring volunteer ambulance personnel (ambulance attendants, drivers, service directors, and/or medical directors) who serve a minimum of five years and up to 20 years. The program is administered by the EMSRB. During the last year, 60 retiring ambulance volunteers received their lump sum longevity award, which averaged $2,482 each. Statutory language can be found in Minnesota Statutes 2002, Section 144E.46, entitled "Ambulance service personnel longevity award."

Mandatory Medicare Assignment - Requires that health care providers accept Medicare reimbursement as payment in full. Providers are not allowed to bill patients directly for any portion of the bill that is not reimbursed (other than the allowable co-pay or deductible). Mandatory Medicare assignment for ambulance services took effect April 1, 2002, concurrent with implementation of the Medicare fee schedule.

Medicare Ambulance Fee Schedule - A national payment system that determines Medicare reimbursement rates for ambulance transports based on distance travel, and level of care provided.

Methamphetamine Lab - Methamphetamine (meth) is an extremely addictive narcotic drug. According to the Minnesota Methamphetamine Task Force, "The labs being found in Minnesota are mostly temporary, makeshift operations set up in apartments, storage facilities, motel and hotel rooms, campsites, fields, vacant buildings, and vehicles. Discarded lab equipment and chemical waste are also being found in roadside ditches."[84] Meth labs are extremely dangerous because of the toxic chemicals used to create the drug. There is serious danger of explosion and inhalation of vapors from the creation process can cause nausea, dizziness, chest pain, and shortness of breath. EMS personnel responding to an emergency in a meth lab must take proper precautions.

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[82] Centers for Medicare and Medicaid Services. <http://www.hcfa.gov/medicaid//hipaa/online/000001.asp> (Web site no longer available).
[83] "The Health Insurance Portability and Accountability Act of 1996 (HIPAA)." Centers for Medicare and Medicaid Services. <http://cms.hhs.gov/hipaa/> (October 29, 2002).
[84] "Minnesota Meth Lab Task Force: Questions and Answers About Meth Labs." Minnesota Department of Public Safety. <http://www.dps.state.mn.us/emermgt/methlab/#meth> (October 29, 2002).

Mutual aid - from time to time, to meet peak demand or extraordinary resource utilization, it may be necessary to request assistance to answer a call or provide additional resources. This is the concept of and intent of EMS mutual aid. EMS mutual aid requests must be made with the intent of having the closest (shortest response time to the patient) available EMS unit respond to a patient's medical need, at a time when the resources of the requesting agency are temporarily unavailable or have been expended.[85] Each ambulance service in Minnesota is required to have at least one written mutual aid agreement with a neighboring ambulance service.

Non-emergency transfer - transport of a stable patient who does not require emergency care. Non-emergency transfers are more likely in rural areas where patients need transfers to distant facilities for specialty care.

Occupational Safety and Health Administration (OSHA) - Federal agency whose regulations require that ambulance services provide workers with: initial blood borne pathogen training, training on decontamination procedures, face shields and protective clothing, laundry for contaminated uniforms, containers or areas to dispose of contaminated materials, review of exposure control plan and other safety measures. Failure to meet OSHA standards can lead to tens of thousands of dollars in fines.[86]

Physician Certification Statement (PCS) Form - Certifies the medical need for ambulance transport. Completed form is necessary to obtain payment from Medicare. In order for providers to be reimbursed by Medicare or Medicaid for non-emergency transports from a healthcare facility, they are required to obtain a Physician's Certification Statement (PCS). The form is to be completed and provided at the time of transport. Obtaining a physician signature has proven to be the biggest challenge in completing the PCS form.

Primary service area (PSA) - defined geographic region in which an ambulance service operates. Legally defined by Minnesota Rules, Chapter 4690.3400, a PSA must meet strict requirements about the maximum distance an ambulance must travel and maximum response times.

Public Employees Retirement Association (PERA) - the Minnesota Legislature established PERA in 1931 as a retirement association for county and local government employees. Ambulance personnel are currently unable to receive retirement benefits through PERA unless they are employees of these governmental entities.

Repeater - is a piece of radio equipment used by EMS systems. It allows personnel to have reliable communication with others spread out over large distances by "repeating" the radio signal.

Rescue sled - EMS vehicle used in winter conditions. It is most often used for rescues involving individuals that have fallen through thin ice on rivers and lakes. The rescue sled is attached to a snowmobile or other vehicle and pulled behind it.

Special taxing district - Provides authority for two or more political subdivisions to jointly impose a property tax levy. During the 2001 legislative session, new legislation passed authorizing special taxing districts for emergency medical services. The new law amended Minnesota Statutes

[85] "EMS Mutual Aid." New York State Department of Health, Bureau of Emergency Medical Services. <http://www.health.state.ny.us/nysdoh/ems/mut_aid.htm> (October 29, 2002).
[86] U.S. Department of Labor, Occupational Safety and Health Administration. <http://www.osha.gov/> (October 29, 2002)

2002, Section 275.066. The levy proceeds are to be used to support "providing of out of hospital emergency medical services including, but not limited to, first responder or rescue squads recognized by the district, ambulance services licensed under Chapter 144E and recognized by the district, medical control functions set out in Chapter 144E, communications equipment and systems, and programs of regional emergency medical services authorized by regional boards described in Section 144E.52."[87]

Volunteer Reimbursement Program -- Each year, $385,000 is allocated from the state General Fund to reimburse non-profit ambulance services for training personnel. Up to $450 is reimbursed for the successful completion of a basic course and $225 for a continuing education course. Costs may include transportation, tuition, food, lodging, hourly payment, and other necessities. To receive reimbursement, an ambulance service pays for the training costs up-front. Once the trained individual has served for one year as an active member of a licensed ambulance service, the ambulance service may request reimbursement from the EMSRB for training costs.

[87] Minnesota Statutes 2002, Section 144F.01.

Appendix H

Overview of the Minnesota

EMS Regional System

Overview of the Minnesota EMS Regional System

Every two years the EMSRB solicits proposals for the operation of regional systems in each of Minnesota's eight geographic EMS regions. This grant program is intended to reduce death and disability due to medical emergencies through the promotion of prevention efforts and the development, maintenance and improvement of EMS systems on a regional basis throughout Minnesota. The regional EMS system must provide services in all counties within its region and have the support of EMS organizations and agencies that are actively involved in regional EMS activities.

The total estimated amount of funding available for the current grant period (July 1, 2001, through June 30, 2003) is $3,652,532 ($456,566 per region). Of that amount:

- $1,392,532 is available through the Minnesota EMS System Support Act.[88] Each of the eight regions will receive $174,066 from this source which may be expended for personnel training, transportation coordination, public safety agency cooperation, communications system development and maintenance, public involvement, health care facilities involvement, and system management.
- An estimated $2,260,000 is expected from the state's special EMS Relief Account,[89] which is composed of fines collected for violations of the seat-belt use requirement. Each of the eight regions will receive an estimated $282,500 from this source which may be expended for personnel education and training, equipment and vehicle purchases, and operational expenses of emergency life support transportation services.

Each regional EMS system must be governed by a body consisting of representatives from each of the counties in that region and include representatives of EMS providers. Organizational structures that include representatives from EMS organizations on standing committees, and that are considered part of an overall governing body, fulfill this requirement.

Central Region

Central Minnesota EMS Region, a newly designated program in 2001, operates under a memo of understanding adopted by its 14 counties. A joint powers board structure is currently being developed. Each participating county appoints a member to the board and also names a member from the EMS community to an advisory committee. Member counties are Benton, Cass, Chisago, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison, Pine, Sherburne, Stearns, Todd, Wadena and Wright. Primary activities include ambulance personnel training in pediatric emergency care and advanced life support, train-the-trainer courses in use of child safety seats, initial and refresher training for first responders, and the purchase of patient care equipment for providers. The region also supports a critical incident stress management team available to EMS personnel.

Metropolitan Region

The Metropolitan 911 Board, a joint powers board representing seven counties, is the designee in this region. The board has an EMS committee that consists of an individual from each county community health services agency, two emergency physicians, two communications specialists, and two ambulance services. Member counties are Anoka, Carver, Dakota, Hennepin, Ramsey, Scott and Washington. Major activities include: training grants for continuing education in specialized areas; support of a critical incident stress management team; conferences on EMS communications and the development of EMS technology; special

[88] Minnesota Statutes 2002, Sections 144E.50 and 144E.52.
[89] Minnesota Statutes 2002, Section 169.686.

research projects on the effectiveness of EMS practice; guidelines for coordinated regional response to mass casualty incidents.

Northeast Region

Arrowhead EMS Association is a non-profit organization made up of dues-paying members from the EMS community who can serve on the board and hold office. Board membership includes 18 to 21 members in the following positions: two regional trauma centers, two regional EMS resource centers, two designated area-wide hospitals, three designated local hospitals, nine ambulance and first responder organizations, one from neighboring Douglas County, Wisconsin, and the current past president. Member counties are Aitkin, Carlton, Cook, Itasca, Koochiching, Lake and St. Louis. The region sponsors an annual state-wide EMS conference and provides technical assistance to EMS providers. The association also owns and maintains a regional EMS communications system that links pre-hospital providers and connects them with hospital emergency departments and physicians.

Northwest Region

Greater Northwest Minnesota EMS is a non-profit corporation that offers free memberships in the organization. The board makes appointments to fill the following seats: three ambulances, three first responders, three hospitals, one physician, one education, one law enforcement, one fire, one dispatch and one public-at-large. Member counties are Beltrami, Clearwater, Hubbard, Kittson, Lake of the Woods, Mahnomen, Marshall, Norman, Pennington, Polk, Red Lake and Roseau. Primary activities include pediatric education for EMS providers, training of regional medical directors, a pilot project targeting volunteer recruitment and retention, and a traffic safety program for high school students. The region supports a critical incident stress management team, hosts an annual conference for basic and advanced personnel, and conducts a group-purchase plan for patient care equipment needed by providers.

South Central Region

South Central Minnesota EMS is a Joint Powers Board, with appointments made by the nine participating county boards. An advisory committee is made up of 25 members from various EMS-related disciplines: dispatchers, rescue squads, city government, nurses, ambulance providers, community health services, law enforcement, fire, physicians, educators, and emergency management. Member counties are Blue Earth, Brown, Faribault, LeSueur, Martin, Nicollet, Sibley, Waseca and Watonwan. Program activities include a medical director consortium that provides education, protocols, run reviews and quality-improvement programs; support of a critical incident stress management team; a traffic safety program aimed at teenagers; education in the use of child safety seats; management and operation services to regional EMS providers.

Southeast Region

Southeastern Minnesota EMS is a joint powers board, with appointments made by the 11 participating county boards; there are also non-voting members from the EMS community. A pre-hospital advisory committee is made up from various EMS related disciplines. Member counties are Dodge, Fillmore, Freeborn, Goodhue, Houston, Mower, Olmsted, Rice, Steele, Wabasha and Winona. Program activities include a region-wide medical director consortium for volunteer basic life support services and first responder squads. The consortium provides education, protocols, run reviews and quality-improvement programs. The region sponsors an annual EMS conference, supports a critical incident stress management

team, subsidizes equipment purchases, funds research projects and provides numerous educational programs for EMS providers.

Southwest Region

Southwest Minnesota EMS Corp. is non-profit organization with appointments made by the 18 participating county boards. Current members include ten EMS representatives, seven elected officials and one member representing the public. Member counties are Big Stone, Chippewa, Cottonwood, Jackson, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, McLeod, Meeker, Murray, Nobles, Pipestone, Redwood, Renville, Rock, Swift and Yellow Medicine. Program activities include: medical director education; pediatric basic trauma life support courses; traffic safety programs for high school students; funding support for first responder refresher training; funding assistance for purchase of patient care equipment and pagers and hand-held radios for EMS providers.

West Central Region

West Central Minnesota EMS Corp. is a non-profit organization with board members appointed through a nominating committee process. Vacancies are filled from the following disciplines: one physician, two ambulances, one hospital, one community health services, one first responder, one public safety, one training, and a consumer representative. An executive committee is empowered to do board business. Member counties are Becker, Clay, Douglas, Grant, Otter Tail, Pope, Stevens, Traverse and Wilkin. Major activities include: education opportunities for pre-hospital providers and rural hospital emergency department personnel; funding for provider patient care equipment; public safety and traffic prevention programs; disaster drills and exercises; a program to expand the placement and early use of automatic external defibrillators; support of a critical incident stress management team.

Appendix I

Selected Projects:

Minnesota Rural Flex Grant Program

Selected Projects
Minnesota Rural Flex Grant Program
2001-2002

Prepared by the Office of Rural Health and Primary Care,
Minnesota Department of Health

Grantee: Houston County Public Health, Caledonia
Project: Emergency Medical Services workforce development
Award: $25,000 (2001)

Houston County's three ambulance services came together in a collaborative effort to address recruitment, training, and retention of volunteer Emergency Medical Technicians in this project. The ambulance services, along with Houston County Public Health, Houston County Emergency Management, the Houston County Sheriff's Department, and Gunderson Lutheran, Inc., have jointly developed a plan for county-wide emergency training, combined strategies for recruiting volunteers, held events in recognition and appreciation of existing volunteers, and engaged employers in exploring options for increasing the availability of daytime employees willing to take on-call EMS shifts. This was the first time emergency response agencies throughout the county successfully collaborated.

Results of this successful project include:

- Increased EMS Volunteerism: The Houston Community Ambulance Service increased its volunteer roster from 9 to 18 crewmembers in one year.
- Joint training: Eleven EMS-related services (police, fire, Sheriff, ambulance) attended joint training on Cold Water Rescue Awareness and Air Bag Safety. This was the first time this type of training was made available in this county, and the first time all EMS-related services attended training together. Agricultural Trauma training was also made available for the first time. Thirty-six participants from Houston County and neighboring counties in Wisconsin and Iowa attended.
- Communications enhancement: The combination of out-dated communications equipment and the hilly terrain in this county caused great hardship in the area of reliable communications. This grant award assisted in the purchase of pagers, portable radios, and a channel base radio used in dispatching emergency messages.

Grantee: Tracy Area Medical Services
Project: Development of an ambulance services consortium
Award: $15,000 (2001)

Tracy Area Medical Services, a Critical Access Hospital, leads efforts to consolidate ambulance services serving seven small communities in this project. Project activities include hiring a shared Medical Director, developing standardized protocols, developing a training curriculum, group purchasing, and creating a centralized billing system.

Ambulance services in this area are extremely vulnerable financially and report difficulty in recruiting and retaining volunteer EMTs. The consolidation of these services strengthens the pre-hospital care available in the region, provides training and staffing enhancements that help crews maintain adequate numbers of

volunteers, creates options for group purchasing resulting in significant savings, and maximizes reimbursement possibilities through centralized billing.

Grantee: Cook County North Shore Hospital, Grand Marais
Project: Recruitment, training, and retention of EMTs and trauma training for nurses
Award: $25,000 (2001)

The Cook County North Shore Hospital is undertaking two projects with this grant award. One is the development of a training program for the nursing staff that will provide intensive training focused on critical care, trauma, and obstetrical patients. The other is a collaborative project with Cook County Schools in developing and implementing a school-based EMT training program and offering it as part of the school's curriculum.

Students enrolled in this program spend an hour every weekday at the hospital participating in EMT and other healthcare training. This innovative approach is providing high school students the necessary training to become EMTs and gives them an understanding of health-related careers. Several students currently enrolled in this program report the intention of furthering their education in health care and seeking employment in emergency

Appendix J

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