RURAL EMERGENCY MEDICAL SERVICE INITIATIVE (REMSI)

PURPOSE

The purpose of our three-year (1999-2001) project is to develop and implement a process to assist rural communities in building and enhancing their local EMS systems. The project possesses three goals: (1) conduct a statewide rural community assessment of EMS issues; (2) develop a technical assistance structure to build and enhance local community capacity in EMS; (3) promote state health policy and programmatic efforts to strengthen the rural EMS system.

RURAL EMERGENCY MEDICAL SERVICES

Rural areas comprise four-fifths of American soil, but contain only one-fourth of the U.S. population. Such regions have encountered difficulty in providing adequate access to quality health care for their residents. Rural hospitals, the backbone of local health care systems, have struggled to survive. A declining and aging population base, failing rural economies, and competition for doctors and nurses from urban hospitals, have all contributed to the difficulties of rural hospitals.

Emergency medical services (EMS), created in 1966 to reduce traffic-related deaths, have been found to reduce human suffering and save lives. EMS plays a particularly crucial health care role in rural and frontier areas. However, few studies have been conducted in this area. In a recent publication, officials of the National Rural Health Association (1997) stated that, "the lack of data to guide the clinical and operational aspects of EMS as part of overall health care delivery systems for rural and frontier areas cannot be overstated."

Because the average U.S. citizen will require the services of an ambulance at least twice in their life span, well-organized emergency medical services are essential. Delays in receiving care in sparsely populated areas put many rural Americans at greater risk of permanent injury or death than those who reside in urban areas. Thus, the development of effective EMS systems is crucial to the health care of rural Americans.

Emerging evidence indicates that rural EMS is experiencing significant problems. In most rural areas, EMS has not attained the same level of sophistication as in urban areas. In a study on rural EMS, the Office of Rural Health Policy cited four reasons to explain the less advanced care found in rural EMS: (1) sparse populations covering large geographic areas make the cost of providing EMS care more expensive; (2) state and local governments in rural areas have a lower capacity to fund programs through taxes; (3) failing rural economies often have difficulty maintaining the public service and responding to change; (4) rural communities do not have the volume and profit potential to operate private sector EMS services when the public support system is absent. In addition, many rural areas struggle with increasing demand and higher community expectations, organizational instability, poor access to training and medical
supervision, shortages of EMS volunteers, extended response times, lower levels of training, outdated equipment, and underdeveloped systems for public access and communications.

Rural emergency medical services are highly dependent upon volunteer personnel. Few small communities have a paid, professionally staffed ambulance service. Most of the state's volunteer personnel work full-time in non-health related positions within the community. Often, employers are not supportive of employees taking time from work to be involved in emergency care provision or training. Volunteer EMS providers donate their personal time to care provision and are usually expected to be available 24 hours a day, and on weekends and holidays. Some of the main reasons why local residents agree to participate in local EMS include the crucial medical need within the community and tremendous pride they possess in their town's autonomy and independence.

The recruitment and retention of health professionals to rural areas are particular problems. Numerous studies have documented the nature of these problems among various health providers, including physicians, nurses, physician assistants, nurse practitioners, psychologists, social workers, lab technicians, physical therapists and occupational therapists. The literature points to a number of explanations for these difficulties, such as lower pay/benefits, outdated facilities/equipment, long hours, lack of collegial interaction/support, unfavorable scope of practice, poor access to specialty care, and poor access to social amenities.

Aside from the challenging work conditions faced by volunteer EMS providers, there is empirical evidence that indicates recruitment and retention of EMS personnel are significant problems in N.D. In 1996, the UND Rural EMS Institute conducted a survey of EMS personnel attending a state regional EMS conference in Grand Forks. Survey findings indicated that EMS personnel felt the most pressing problems for N.D. EMS were retention of personnel (61% of respondents), recruitment of new personnel (58%), getting time off from one's non-EMS job (26%), lack of community acknowledgment/ recognition (24%), and inadequate medical direction (15%).

In 1994, the Center for Rural Health conducted a national study of rural EMS issues. State EMS Divisions and state Offices of Rural Health were asked to identify state rural EMS problems, solutions, and policy options. Results indicated the three most commonly cited problems were staffing, training, and finance. In rural N.D., the study revealed that staffing and training were the most prominent EMS problems.

NORTH DAKOTA

The 1990 census population of N.D. was 638,800, ranking it 47th among U.S. states. Encompassing 70,702 square miles of geographical area, the state is ranked 17th in size nationally and fifth among Midwestern states. N.D.'s population can be broken into three well-defined groups. An urban population lives in and around Fargo, Bismarck, Grand Forks, and Minot, representing 49% of the state's population. In contrast, the rest of the state is very sparsely populated with 36 of the 53 counties designated as "frontier" because of their extremely low population density (less than six persons per square mile). The third distinct group in the
state is the Native American population of 25,305 (4.0%) that predominantly resides on the following rural, Indian Reservations: Fort Berthold; Spirit Lake; Standing Rock; Turtle Mountain.

Rural North Dakotans (including Native Americans), compared to their urban counterparts, are confronted by a number of health and social problems, including limited access to primary care physician and hospital services, high poverty rates, high rates of certain diseases and injuries, poor birth outcomes, high unemployment, and a growing elderly population.

Rural N.D. has historically been plagued with a shortage of physicians to provide primary care at the local level. Of the state's 53 counties, 37 (70%) have substantial regions that are designated as primary care Health Professional Shortage Areas (HPSAs). All 37 counties are considered rural or frontier. The HPSA designation mandates a population-to-primary care physician ratio of 3,500:1 or greater. Currently, 40 of the state's 53 counties are designated as medically underserved areas (MUAs). All 40 counties are considered rural or frontier areas. The MUA designation is contingent upon several "high need" indicators, including population-to-physician ratio, rate of infant mortality, percent elderly, incidences of low weight births, and poverty rate.

NORTH DAKOTA EMS SYSTEM

The current N.D. EMS system comprises the following components: quick response units; rescue services; ground and air ambulance services; dispatch centers; radio communications; and EMS personnel, including first responders, emergency care technicians (ECTs), advanced first aid ambulance attendants and emergency medical technicians (EMTs), nurses and physicians. N.D. has a total of 141 surface ambulance services, twenty-one licensed at the Advanced Life Support (ALS) level and 120 licensed at the Basic Life Support (BLS) level. There are also about 24 quick response units and 40 rescue squads in the state.

The state's EMS providers include approximately 4,424 first responders, EMTs, ECTs, and advanced first aid ambulance attendants. First responders total about 1,803 in ND. Of the 2,430 EMTs in the state, 1,737 (71%) are EMT-Basic personnel. About 363 (16%) are at the EMT-Intermediate level and approximately 330 (14%) are EMT-Paramedics. Also, the state has 81 ECTs and 110 persons trained in Advanced First Aid (Source: ND Division of Emergency Health Services).

PROJECT ACTIVITIES

1. STATEWIDE ASSESSMENT

Each rural community is unique and the local EMS service tends to be reflective of this notion. Thus, it is important to assess the strengths and weaknesses of local EMS squads on a case-by-case basis. This proposed assessment would examine issues related to the problems of adequately supplying EMS personnel in our state. Specific assessment aims, along with their corresponding implications, include:
a) Profiling demographic characteristics of N.D. EMS personnel. Implications: This examination would provide health policymakers with knowledge of age distribution of EMS personnel within each certification level (i.e., first responder, paramedic), squad and geographic region. Thus, it would provide an indication of the number of EMS personnel that are approaching retirement age. Such information could inform EMS policymakers about when they can expect significant changes in the out-migration of EMS personnel in the state's force.

b) Describing current N.D. EMS practice characteristics. Implications: This action would provide information to health policymakers regarding a variety of issues such as how much training has been acquired by EMS personnel and how much time is entailed in providing EMS care. To our knowledge, this examination would be the state's first attempt at measuring the practice characteristics of the state's EMS personnel, and would serve as comparative baseline data for future assessment efforts.

c) Assessing the extent to which EMS personnel are satisfied in their EMS work. Implications: This information would inform policymakers about the extent to which EMS care provision positively or negatively impacts the mental and emotional state of EMS personnel. Given that EMS personnel are traditionally an at-risk group for job "burnout," it is imperative to examine this issue.

d) Estimating the likelihood of EMS personnel leaving their EMS duties within the next 5 years. Implications: This information will inform state health policymakers regarding the expected rate of attrition within the EMS work force in the ensuing five years. Such information will provide implication as to when measures to promote EMS recruitment and retention should be implemented.

e) Discovering reasons as to why some EMS personnel expect to remain in or leave their current EMS positions. Implications: This analysis will provide health policymakers with valuable insight into which personal, training, and job-related issues positively and negatively influence turnover intention among the state's EMS personnel. Such information can assist in formulating successful recruitment and retention strategies for N.D.

f) Examining personal and squad characteristics that are related to low EMS recruitment and retention problems. Implications: The derived information can be compiled and disseminated to the state's EMS squads in order to provide them with possible avenues for remedying their own personnel recruitment and retention problems.

g) Determining demographic, squad, EMS job and community characteristics that are associated with EMS job satisfaction. Implications: This information can be compiled/disseminated to the state's EMS squads in order to provide them with possible means for improving job satisfaction and morale among their existing personnel. Also, the information could provide insight into how the recruitment of new personnel might be enhanced by providing more of what EMS providers find satisfying about their work.
Examining the extent to which EMS job satisfaction is related to EMS job retention.

Implications: This analysis can serve to inform health policymakers about the extent to which the state's EMS personnel enjoy or dislike their EMS roles and how it affects their turnover intention. Such data provides health policymakers a reliable estimation of the number of EMS personnel that could be retained within the state's EMS force for every incremental improvement in EMS providers' job satisfaction.

Anecdotally, it is known that some N.D. communities have desperate problems with recruiting and retaining EMS personnel, while other towns have waiting lists for individuals that want to join their EMS squads. This proposed assessment would determine the extent of this problem and highlight various factors that are associated with EMS squads that have few recruitment/retention problems and satisfied EMS providers.

Results are expected to yield data that would allow for several comparisons to take place: urban versus rural units/personnel; ALS units versus BLS units; paid versus unpaid workers; and paramedics versus lesser trained personnel. It is anticipated that several factors, including EMS job characteristics and satisfaction, will differ greatly across these categories. Thus, from a health policy standpoint, it is imperative to understand these differences to better target resources to the appropriate geographical region and EMS squads.

EMS Personnel Survey: The questionnaire for this study was developed with input from a number of EMS and other health care providers and policymakers, including Tim Wiedrich, NREMT-I (state EMS office director) and Derek Hanson, NREMT-P (President, N.D. EMS Association). The target population for this study is all currently-practicing and former EMS personnel in North Dakota. EMS personnel is defined as paid and volunteer EMT-Bs, EMT-Is, EMT-Ps, Ambulance Attendants, ECTs, and First Responders.

In February 1999, questionnaires will be mailed to all EMS personnel in N.D. (N=4,300). Individuals will be instructed to complete the questionnaire version that is suited to their EMS work status. After about four weeks, non-responding individuals will be sent a revised cover letter and two additional questionnaires. All packets sent to potential respondents will be supplied with self-addressed, postage-paid return envelopes.

EMS Squad Survey: A separate questionnaire will be sent to each N.D. EMS Squad to be completed by their squad leader. Non-responding squad leaders will be telephoned by project staff personnel in an effort to achieve close to a 100% response rate. Squad-specific data will be derived from this assessment effort and linked with data derived from the individual EMS personnel survey. Thus, for each respondent, we will have both individual- and squad-specific information. The squad-specific questionnaire will derive information that would ordinarily not be known by the individual squad members. For example, we will ask squad leaders about their squad's efforts to enhance personnel recruitment/retention and their level of effectiveness.
The statewide assessment process presents two functions. First, health policy (federal and state) is shaped and guided by empirical data gathered through assessment and study activities. For example, the health professions literature documents health policy targeting resources toward the elimination of health provider shortages, particularly primary care. Policy makers have relied upon assessments and studies to ascertain significant factors (e.g., training programs, practice settings, reimbursement, provider relationships, organizational structures) that impact shortages. Policymakers address these issues through policy instruments such as regulation and legislation. At the national level, the federal government addresses physician shortages through the National Health Service Corps program, personnel shortage area designations, training program support, reimbursement strategies and other methods. Also, States employ policy-oriented tactics such as state loan repayment or scholarship programs, state support to training programs, and tax incentives to rural providers. All of these efforts have at their genesis elements of research that lend credibility to the issue and suggest possible solutions.

A critical issue facing N.D. is the lack of accurate data on rural EMS provider needs for policymakers and advocacy groups. While EMS providers are recognized as critical providers in rural areas, little work has been conducted to understand and address these issues. Indeed, EMS is often the forgotten element in the American health system. If N.D. is to understand and address rural EMS provider issues, it must first produce useable data to guide decision making.

A second function of a state rural EMS needs assessment is the enhancement of local community development. Communities benefit when they are intimately involved in a process where the "ownership" of ideas occurs. A statewide EMS personnel needs assessment can identify communities employing successful recruitment and retention models that can be used to educate other EMS units. An important part of rural community development is the opportunity for leaders to learn from each other. Thus, the assessment process can assist communities to learn from each other, build local capacity, and develop local leadership in local and regional endeavors.

2. TECHNICAL ASSISTANCE

Periodically, the Division of Emergency Health Services and the Center for Rural Health receive information requests from rural hospitals and EMS squads. Currently, inadequate resources to respond in an optimum manner are not present. Technical assistance for rural communities in restructuring their local/area health systems is essential. The forces driving health system change (e.g., demographics, economics, provider shortages, urban system expansion into rural areas) are compelling. Rural health facilities must take action, explore new options, and develop capacity for change and adaptation. Technical assistance can help community leaders and providers optimize their choices and cultivate new skills to stabilize their health system.

Technical assistance is a concrete tool used within the context of community/leadership development. The purpose of developing an EMS technical assistance structure is twofold.
First, it exists to provide rural health with facilities assistance, information, new skills, and referrals to other resources to build more stable rural EMS systems. Second, it exists to help them build capacity, develop their own knowledge base, and enhance their independence. This notion is fundamental to development. Taking ownership of your local health system connotes more than legal or financial ownership. It entails a willingness to invest personal time in learning new knowledge, accepting new and at times threatening concepts; it suggests pride in regaining control of external forces impinging local decision making; it signifies the ending of passivity. The underlying assumption of this goal is to provide technical assistance that builds local skills and capacity and diminishes reliance on external organizations. The specific technical assistance services include:

a) Information/Data Searches: The Center for Rural Health has developed a small rural health library. The library is a depository for a wide variety of information (disseminated upon request) in the forms of books, periodicals, research reports, newsletters, and articles. While information regarding EMS is presently limited, efforts will be made to expand the library's acquisition of EMS information. As communities and health facilities make requests for EMS background documents, a variety of sources will be used for answering information requests. The following sources have been identified: holdings contained in the Rural Health Library, databases (e.g., Medline) available from the UND School of Medicine and Health Sciences' medical library, and databases from the U.S. Department of Agriculture's Rural Information Center for Health Services (a national clearinghouse for rural health information).

b) Rural EMS Updates: Documents will be developed and disseminated via fax, mail, and conferences to rural EMS providers. The Updates will cover information and announcements useful to rural providers. This effort will include grant notices (federal and private), workshops, data sources, Internet web sites, and federal program information.

c) Rural EMS Fact Sheets: These brief documents will target specific information and data to providers. Information from the statewide assessment will be disseminated to rural providers in this manner. In addition, when individual information searches are conducted for communities that information will be made available to other communities.

d) EMS Policy Briefs: These documents assist the N.D. Legislature in understanding specific health issues within the context of rural health. Two EMS Policy Briefs will be developed. One will address the structure of the EMS system, how that system operates, and common issues facing rural EMS. The second brief will incorporate findings from the statewide assessment. Policy briefs are intended to be educational in nature. The purpose, at this stage, is not to advocate for policy change but to offer insights to the issue for legislators to factor into their policy making duties. Also, EMS Policy Briefs will be provided to the State Health Council, a policy board that advises the Governor and the Health Department on health policy issues.
e) Grant Development and Mentoring: It is proposed that a grant development and mentor effort be initiated. This is an important component as it provides follow through of the assessment process as well as provides communities with a practical and "hands-on" approach in meeting their needs. Grant writing is often an intimidating endeavor, even for the experienced professional. Most members of rural EMS squads have little or no experience in grant writing or familiarity with the process. The Center for Rural Health will provide one-on-one guidance to representatives from rural ambulance services through all phases of the grant development process. Based on the needs identified in the EMS squad assessment, appropriate funding sources will be identified and provided to the units. Additional background information necessary in writing a proposal will be identified, budget development assistance will be offered, and proposal review/critique will be provided. The development process will emphasize three areas of mentoring.

First, a grant writing workshop specifically designed for EMS providers will be conducted. Such a skill building workshop will be held during the annual state EMS association conference. There have been successful rural EMS grants in North Dakota. The federal Rural Health Outreach grant program has funded two separate projects in the state. This workshop will blend the grant development experience of the Center with the success of rural providers who have written EMS Outreach grants. Again, capacity building and leadership development are enhanced when providers can share in the experiences and lessons learned by their peers.

Second, information sourcing refers to specific information searches related to grant development. Locating funding opportunities (both private and federal) and background information are common requests. The Center has identified over 200 private foundations that fund health and human service subjects. Categories of support have been identified (e.g., abuse prevention, financing, mental health, rural development). EMS is not an identified category. Typically, the Center responds to community requests for foundations funding EMS by providing information from the rural development or capital development categories. To date resources have not been available to refine this identification to a level of specificity that accurately verifies foundations supporting EMS projects. This project will allow resources to be targeted toward enhancing the grant sourcing service and to identify funding sources that are amenable to queries from EMS providers.

The third distinct mentoring step involves the Center, the EMS division, and the state EMS association offering their assistance in critiquing EMS grant proposals. The purpose of this service is to assist these small units in learning more about the grant development process by receiving technical assistance before submitting a proposal. In most cases, the rural applicants will be novice grant writers so an external, impartial review will offer additional perspective to the process and, hopefully, produce stronger proposals.

The grant development and mentor service will enhance grant writing skills and instill confidence in these individuals. These individuals will bring these skills back to their ambulance service and promote local empowerment and autonomy. These individuals
will then mentor peers in neighboring communities in their grant writing efforts. The goals of the mentoring effort are to build local capacity, skills, confidence, and independence. The Center, the EMS division, and the state association will remain available for technical assistance and to offer advice.

f) On-Site Technical Assistance: Even in a time of teleconferencing, e-mail, and fax machines there is still a need for direct, face-to-face contact. Thus, on-site assistance will be provided to rural communities.

PROJECT ACTIVITIES

3. HEALTH POLICY AND PROGRAM DEVELOPMENT: An important conviction underlying the project is that action should result from the assessment stage and go beyond the technical assistance phase. Changes in state policy and program development are expected outcomes. It is anticipated that the statewide rural EMS assessment will produce results that are important for health policy deliberations.

The analysis of the assessment identifies specific issues that are analyzed from the perspective of possible policy or programmatic solutions. The Center will contact state EMS divisions and State Offices of Rural Health to ascertain how other states are addressing rural EMS personnel issues. Policy briefs will be a means to educate policy makers (i.e., state legislators, health council members) on identified rural EMS issues.
REMSI Factsheets / Updates

Update # 1:  Center Implements EMS Initiative (October 1999)
Update # 2:  Outline For Ambulance Fee Schedule Taking Shape As Advisors Define Terms (October 1999)
Update # 3:  Grant Writing Tips: Part I (June 2000)
Update # 4:  EMS Network Grant (November 2000)
Update # 5:  Grant Writing Tips: Part II (December 2000)
Update # 6:  Grant Opportunity for Fire Departments & EMS (March 2001)

Factsheet # 1: North Dakota Deomographic/Economic Statistics (November 1999)
Factsheet # 2: North Dakota EMS Providers Demographic and Work Characteristics (February 2000)
Factsheet # 3: Recruitment and Retention Issues Among North Dakota EMS Personnel (March 2000)
Factsheet # 4: Personnel and Care Provision Needs Among Rural North Dakota EMS Squad Leaders (June 2000)
Factsheet # 5: Corporations That Contribute to Emergency / Ambulance Services in North Dakota (September 2000)
Factsheet # 6: REMSI EMS Web Links (January 2001)
Factsheet # 7: Diggin For Donors (October 2001)
Factsheet # 8: Fund-Drives Vs. Membership Drives (October 2001)
Factsheet # 9: Volunteerism: A Family Affair (December 2001) NEW!
Factsheet #10: Love Em or They ll Leave: Motivating Volunteer (December 2001) NEW!

North Dakota Volunteer EMS Recruitment & Retention Manual