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Becoming an Emergency Medical Technician: Urban-Rural Differences in Motivation and Job Satisfaction

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Becoming an Emergency Medical Technician: Urban-Rural Differences in Motivation and Job Satisfaction

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Executive Summary

Emergency Medical Services (EMS) are a vital part of rural health care services. EMS systems rely on a staff of trained personnel to ensure that the public receives timely response and appropriate treatment in emergency and non-emergency situations. The U.S. Department of Labor has documented high turnover for EMS personnel, and the recent Institutes of Medicine report, *Emergency Medical Services at the Crossroads,* suggests that poor recruitment and retention of EMS professionals may have a detrimental effect on the health of communities.[i]

This study uses cross-sectional data from the 2003 national Longitudinal Emergency Medical Technician Attributes and Demographic Study (LEADS) Project to explore urban-rural differences in why EMTs enter the field, what is important in their jobs, and whether they are satisfied with their profession.[ii] Work location was characterized using the response to a question about the population size of the community served. Four categories were created: very small (<2,500 persons), small (2,500-24,999), medium (25,000-74,999) and large (75,000+).[iii]

Results show that most EMTs, regardless of location, entered the field to be able to help others by providing medical care. Rural EMTs were less likely, however, to enter the field for the pay or benefits, for career opportunities, or because they wanted an exciting job. Most respondents cited working relationships, technical challenges, work schedule, and the ability to help others as important aspects of their job. Again, rural EMTs were less likely to cite as

[i] Bureau of Labor Statistics, U. S. Department of Labor. Occupational Outlook Handbook, Emergency Medical Technicians and Paramedics. http://www.bls.gov/oco/ocos101.htm [2006-2007]. 12-20-2005. 12-29-2005. National Institutes of Medicine. Emergency Medical Services at the Crossroads. Washington, DC. 2006. The National Academies Press.

[ii] For more information on the survey, see www.nremt.org/about/lead_survey.asp.

[iii] Metropolitan status of the county was also available. However, because many large metropolitan counties include substantial rural areas that are served by their own EMS systems, the aggregated community size variable based on population selected by the respondent was used in order to better capture rurality of practice location and allow assessment of trends across a continuum of community size from the most rural places (very small communities) to the most urban (large communities).

important those employment aspects related to financial reward and career opportunity. There was a clear trend across community size regarding the importance of these employment factors, which is consistent with the fact that most EMTs in very small areas were volunteers.

Differences in the characteristics of the EMS workforce across community size may provide better understanding of the challenges rural areas face in maintenance of an adequate response to medical emergencies. Compared to EMTs in larger areas, EMTs working in smaller areas were often older, were more likely to be female, were less likely to be minority and less likely to have post-secondary education. Almost all EMTs in the smallest areas held basic certification, and most reported that they were volunteers. The largest proportion of respondents in medium to large communities worked at fire-based EMS services, whereas the largest proportion of those working in the smallest communities worked at volunteer rescue squads.

Programs and policies that address the needs of volunteer EMTs in rural areas can be informed by the differences in the demographic EMT profile across communities of varying sizes. Identifying the barriers to minority participation and designing programs to recruit and retain minorities are possible strategies to address the EMS workforce shortage. Given the demonstrated age differential in EMS workers across the rural/urban continuum and current population trends, programs such as health insurance and retirement plans for rural volunteers would strengthen the participation of older workers in EMS. Flexible scheduling and incentives for employers to encourage community service could address volunteers' needs. Increased focus on pay and benefits and identification of additional revenue streams would address the concerns of those rural EMTs working in non-volunteer positions, and could possibly shift the rural EMS workforce towards the use of more paid personnel.

This study demonstrates important differences between the urban and rural EMS workforce. New programs to support rural EMS should consider these factors and provide sufficient support to address the diverse array of EMS services that are most likely to be successful. Further research that examines in more detail why EMTs and paramedics leave the field would provide valuable information to policymakers seeking to improve the stability of the EMS system.

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Introduction

Emergency Medical Services (EMS) are a vital part of our nation's health care services.[1] This is particularly true in rural America where access to all forms of health care is often limited by significant distances and variable terrain.[2,3] EMS systems rely on a staff of trained and available Emergency Medical Technicians (EMTs) that can include those certified as Basics, Intermediates, Paramedics, and other specially trained technicians. An adequate supply of these professionals ensures that the public receives timely response and appropriate treatment in emergency and non-emergency situations. The recent Institutes of Medicine (IOM) report, *Emergency Medical Services at the Crossroads*,[1] as well as surveys of rural EMS providers,[4,5] suggest that poor recruitment and retention of EMS professionals may have a detrimental effect on the health of communities. Stories and reports of poor EMS staffing patterns appear frequently in newspapers and other media.[6-16]

Scientific research exploring EMS recruitment and retention is limited. Media reports suggest that volunteers, who represent the majority of rural EMS workers, are decreasing in number,[17] and paid personnel are retiring or leaving for more lucrative positions.[18] According to one report, very few who enter the profession end up retiring as EMS technicians,[19] raising questions about EMS as a career or part-time occupation. The U.S. Department of Labor has also documented high turnover for EMS.[20] Low job satisfaction that results from high stress, burnout, low pay and inadequate benefits has been linked to turnover in nursing,[21] and may have similar effects on retention of EMS professionals. Lack of EMS personnel is pressuring some systems to close or convert to a different model of EMS service.[8]

There are few systematic studies of why EMTs and paramedics enter the field and what factors are important to retaining them, and none of these studies have focused specifically on

rural areas. Excitement and a desire to help others are among the reasons proposed for why individuals choose EMS as an occupation.[22,23] Without national data that describe the motivation of emergency personnel and the factors that lead to job satisfaction or dissatisfaction, programs that seek to remedy the shortage of personnel lack guidance as to the most effective ways to improve EMS staffing. Further, a lack of information for specific populations also makes it difficult to address EMS issues for rural America, where higher reliance on volunteers and issues that result from serving sparsely populated areas, e.g., low volume of calls and longer distances traveled when on call, may create unique challenges in the provision of EMS.[2,3]

Study purpose and objectives

The purpose of this study was to systematically examine recruitment and retention of EMS professionals on a national level, and to assess whether there were important factors that vary with the degree of rurality of a community. Objectives for this study included: 1) describing the EMS workforce across communities of varying sizes based on population, 2) determining if there are geographic differences among EMS professionals in reasons for entering the profession, 3) determining if there are geographic differences in what EMS professionals consider important as it relates to EMS employment, and 4) examining geographic differences in satisfaction and intent to leave the profession.

Methods

Study design and data source

Cross sectional data from the 2003 Longitudinal Emergency Medical Technician Attributes and Demographic Study (LEADS) Project were used for this study. The LEADS

Project is a 10-year longitudinal study of the EMT workforce, supported in part by the National Highway Traffic and Safety Administration (NHTSA) of the US Department of Transportation and administered by the National Registry of EMTs (NREMT).[24] The survey sample is a random sample of EMTs, stratified on whether the respondent is certified as basic or paramedic, who are currently registered by the NREMT. Each sample frame is further stratified by race (white vs. minority) and by duration of continuous registration (<1 year vs. 1+ years). Random samples are drawn from each of the eight strata. Detailed information about the LEADS project is available elsewhere (www.nremt.org/about/lead_survey.asp).[24] Data for the current study was taken from the forty-six item core survey instrument which contained questions pertaining to demographic characteristics, health status, certification level and years of EMS practice, EMS employer information, work activities and conditions, and job satisfaction.

Sample

In 2003, there were 679 EMT-basic and 941 EMT-paramedic survey respondents, for a total of 1,620 respondents. The overall response rate was 28%. Respondents who were currently not registered EMTs, were temporarily or permanently not practicing, did not have a job in which they performed EMT work, or had already left the EMS profession were excluded (n=241 or 15%), along with 34 who were missing work location, which left 1,345 observations for analysis.

Definition of rural used

Respondent's geographic location of EMS work was characterized using the response to the question, "Which of the following best describes the community in which you do most of

your work as an EMT?" which allowed respondents to check one of eight population sizes. These response options were collapsed into four categories: very small (<2,500 persons), small (2,500-24,999), medium (25,000-74,999) and large (75,000+). Metropolitan status of the county was also available. However, because many large metropolitan counties include substantial rural areas that are served by their own EMS systems, the aggregated community size variable based on population selected by the respondent was used in order to better capture rurality of practice location and allow assessment of trends across a continuum of community size from the most rural places (very small communities) to the most urban (large communities). Almost all of the large communities are located in metropolitan counties (96%), and the vast majority of the very small communities are located in nonmetropolitan counties (71%). Consistent with the continuum of community size, 60% of small towns and only 35% of medium sized communities are located in nonmetropolitan counties.

Independent variables

Other demographic and work characteristics available for analysis were age, gender, race (non-white or white), registration level (basic or paramedic as defined by the sampling strata), volunteer status, new or old EMT (defined using sampling strata), type of EMS service (fire-based, volunteer rescue, etc.), years of experience, and level of education.

Dependent variables

Reasons for entering the EMS profession were captured from a list of ten factors to which respondents could answer "yes" or "no" and included reasons ranging from altruism to excitement to career opportunity and financial benefit. Two response options describing career

opportunity were collapsed because the response for the first question was highly correlated with the response to the second question. Response options that addressed EMS as a job requirement or as a financial incentive for current employment were also collapsed. Respondents were further asked to rate the importance of various aspects of EMS employment. These Likert scale responses were collapsed to two categories to represent "Important" and "Not Important" aspects. Rating of satisfaction was queried for the respondent's current assignment, the EMS profession, and aspects of the EMS position. Responses to the satisfaction questions were collapsed in a manner similar to the importance questions. Intent to leave the EMS profession was captured from a Likert scale measure of likelihood, with response categories collapsed to categorize respondents as likely to leave or likely to stay.

Statistical analysis

Data were analyzed using SAS Callable SUDAAN version 9.0.1 and strata weights were applied, reflecting the probabilities of selection and adjustment for non-response. Chi-square analyses were used to compare unadjusted rates of the dependent variables across geographic location (overall, stratified by volunteer status and certification level), volunteer status (stratified by location), and certification level (stratified by location). All tests were two-sided and conducted at α=0.05.

Results

The EMT workforce

There are statistically significant differences in the distribution of respondent characteristics across the four community size groups (Table 1).

Table 1: Characteristics of Respondents

	Size of the Community				
	Very Small <2,500 persons (n=174) %	**Small 2,500-24,999 persons (n=379) %**	**Medium 25,000-74,999 persons (n=256) %**	**Large 75,000+ persons (n=536) %**	**Chi-Square P-value**
Work location	21.5	31.9	17.2	29.4	------
Age					
18-34	32.7	44.5	53.2	58.2	<0.0001
35-49	43.3	40.3	32.5	34.0	
50-64	22.6	14.0	13.1	7.8	
65+	1.4	1.1	1.1	0.0	
Male	47.9	64.7	80.3	71.4	<0.0001
Race – non-white	9.0	9.7	13.3	20.1	0.0018
Registration Level - Basic	93.1	74.5	64.5	56.7	<0.0001
Volunteer	74.3	43.6	23.7	11.0	<0.0001
Type of service*					
Hospital based	9.0	15.3	21.2	18.8	<0.0001
Fired based	21.3	31.3	45.1	49.9	
County/Municipal based	24.3	27.3	20.0	23.7	
Volunteer Rescue	45.4	25.1	12.7	6.1	
Unaffiliated	0.0	1.0	0.1	1.5	
Other	0.0	0.0	1.0	0.0	
New EMT	27.6	24.8	23.2	24.9	0.7947
Years worked as EMT*					
2 or less years	32.3	37.4	24.6	30.0	0.0384
3-10 years	49.8	46.6	48.8	44.7	
11+ years	17.9	16.0	26.6	25.3	
Education - 2 -4 yr degree or graduate degree	46.8	52.6	51.1	61.3	0.0225

**Twelve percent (12%) of responses for the variable capturing type of service are missing. Ten percent (10%) of responses for the variable indicating years worked as an EMT are missing.*

Just over one-half of respondents work in very small or small communities. EMTs working in the smallest areas tend to be older, and the proportion of the workforce that is older decreases as the size of the community increases. The proportion of respondents that are male is lowest in the smallest geographic area; non-white respondents are also less common in the two

smallest areas. The proportion of respondents that are basic EMTs and the proportion that identify themselves as volunteers are higher in smaller communities, with more than 90% of EMTs in the smallest areas holding basic certification and three-quarters reporting that they are volunteers. About one-quarter of respondents, regardless of community size, are new EMS professionals.

The largest proportion of respondents in medium to large communities work at fire-based EMS services, whereas the largest proportion of those working in the smallest communities work at volunteer rescue squads. Almost half of respondents, regardless of community size, have worked as EMTs for three to ten years. Those working longer than ten years are more likely to be in the largest geographic areas. Education differed significantly with fewer persons with post-secondary education in the two smallest areas and more persons with this level of education in the largest one.

Reasons for Entering the EMS Profession

Reasons for entering the EMS profession varied by size of the community (Table 2). Providing medical care to those in need was a universal motivation, regardless of community size. In contrast, wanting a job that was exciting was reported more often by EMTs in larger areas.

Table 2: Reasons for Entering the EMS Profession

	Size of the Community				
	Very Small <2,500 persons (n=174) %	**Small 2,500-24,999 persons (n=379) %**	**Medium 25,000-74,999 persons (n=256) %**	**Large 75,000+ persons (n=536)** %	**Chi-Square P-value**
Would enjoy being able to provide medical care to people in need of assistance	97.5	90.3	91.4	88.8	0.0002
Wanted a job that is exciting	54.9	70.9	80.1	82.0	<0.0001
Opportunity for new career or opportunity to learn if wanted to pursue another health career opportunity	55.3	76.5	79.6	79.6	<0.0001
Having a friend or family member who worked in EMS or who worked with EMTs	40.5	42.4	41.2	36.6	0.5673
Just kind of fell into it	38.7	37.4	40.2	33.3	0.4779
Wanted a job with good pay and benefits	11.3	28.0	39.1	47.6	<0.0001
There was an accident or other serious medical situation at which I was unable to help	12.8	17.2	20.7	13.8	0.2346
It was a job requirement or my job provided financial incentives for becoming an EMT	14.4	23.9	30.0	35.0	<0.0001
Other	11.4	13.6	6.2	10.3	0.1198

Only one-half of EMTs in very small communities entered the profession looking for a new career, compared to 76% or more in other places. Financial benefit of EMS employment was linked to community size, i.e., the larger the community, the more likely a respondent was to cite this reason for entering EMS. Similarly, the larger the community, the more likely a respondent was to report entering EMS because it was a job requirement or because of employment-based financial incentives.

Important aspects of EMS occupation

Respondents were asked to rate the importance of nine aspects of EMS employment (Table 3).

Table 3: What is Important about EMS Occupation

	Size of the Community				
	Very Small <2,500 persons (n=174) %	**Small 2,500-24,999 persons (n=379) %**	**Medium 25,000-74,999 persons (n=256) %**	**Large 75,000+ persons (n=536) %**	**Chi-Square P-value**
Working relationships I have with other EMTs	100.0	99.0	98.9	96.3	0.0016
The amount of pay and benefits I receive	58.4	79.2	88.4	91.5	<0.0001
Having a job that is exciting	87.1	89.3	89.3	91.5	0.5981
The technical challenges provided by the job	91.6	97.6	94.6	94.7	0.0739
Performing a variety of tasks in a variety of different situations	93.5	94.5	91.4	92.0	0.5901
My work schedule	88.3	80.5	81.6	91.6	0.0009
Opportunities for advancement at my job	66.5	77.0	82.0	87.9	<0.0001
Being able to work without close supervision	78.7	84.0	86.1	88.6	0.0826
Being able to help others	100.0	99.3	97.8	98.8	0.0049

Seven aspects (working relationships, exciting job, technical challenges, work schedule, working without close supervision, variety of tasks in different situations, and helping others) were rated as important by more than 75% of respondents regardless of where they worked. Of more interest were the differences in importance of pay and benefits and the importance of opportunities for advancement across size of community. Both aspects of EMS employment were linked to size of the community served, with respondents in the smallest areas less likely to

report that either aspect was important and those in the largest areas more likely. Neither, however, was listed as important by fewer than half of the respondents.

Job satisfaction

Satisfaction with their current EMS assignment and with the EMS profession were also queried. Respondents were also asked about their satisfaction with specific aspects of their current position (Table 4).

Table 4: Satisfaction with Different Aspects of EMS Occupation

	Size of the Community				
Percent satisfied with:	**Very Small <2,500 persons (n=174) %**	**Small 2,500-24,999 persons (n=379) %**	**Medium 25,000-74,999 persons (n=256) %**	**Large 75,000+ persons (n=536) %**	**Chi-Square P-value**
Current assignment	97.1	94.1	89.9	85.9	0.0002
EMS profession	95.4	96.8	92.9	92.0	0.0316
Working relationships with other EMTs	92.3	97.6	98.0	96.1	0.1193
Amount of pay and benefits	65.7	54.3	56.3	54.1	0.1133
Having a job that is exciting	97.4	98.3	97.5	94.7	0.1494
Technical challenges provided by the job	98.3	96.3	95.3	93.1	0.0253
Performing a variety of tasks in a variety of different situations	99.5	97.2	94.7	93.7	0.0002
Work schedule	86.9	91.4	87.3	88.3	0.4019
Opportunities for advancement	80.5	66.9	59.6	64.5	0.0004
Being able to work without close supervision	99.6	98.1	96.6	96.8	0.0301
Being able to help others	99.5	99.8	99.2	99.5	0.5048
Will probably or definitely leave the EMS profession in the next 12 months	**5.9**	**4.2**	**3.8**	**4.0**	**0.8409**

More than 90% of respondents, regardless of location, were satisfied with the EMS profession. There was a similar high level of satisfaction with their current assignment, although satisfaction

did decrease as the size of the community served increased. There was a high level of satisfaction across community size with those aspects previously identified by most respondents as important, i.e., working relationships, an exciting job, technical challenges, work schedule, variety of tasks in different situations, working without supervision, and helping others. Satisfaction with opportunities for advancement did vary significantly across community size, with satisfaction notably higher in very small communities. Satisfaction levels were lowest for pay and benefits. Again, those in the smallest area were more likely to be satisfied than their counterparts in larger areas, but the differences were not statistically significant.

Other factors that explain differences in motivation and satisfaction

Differences exist between EMTs who work in less populated areas and those who work in population centers (Table 1). Of particular importance is whether or not the respondent identified him/herself as a volunteer, which was strongly associated with size of community. Likewise, whether the respondent held basic- or paramedic-level certification also differed significantly across communities of different sizes. Many of the aspects of EMS employment found to differ significantly for those in rural areas, for example, pay and benefits or opportunities for advancement, are aspects that are also likely to differ by whether or not the respondent is a volunteer and by the level of certification s/he holds. Further analyses were carried out to examine the separate effects of volunteer status and certification level on those aspects of EMT employment noted to be significant across the rural/urban continuum as defined by community size (Table 5).

Table 5: Differences in Motivation and Satisfaction by Volunteer Status and by Certification Level

	Volunteer Status			Certification Level		
	Volunteer (n=273-299) %	Non-Volunteer (n=1066-1073) %	P-value	Basic (n=492-521) %	Paramedic (n=847-853) %	P-value
Entered EMS for job that is exciting	61.7	78.6	<0.0001	68.3	82.6	<0.0001
Entered EMS for job with good pay and benefits	9.4	45.1	<0.0001	26.4	45.7	<0.0001
Amount of pay and benefits is important	54.4	94.6	<0.0001	73.5	96.4	<0.0001
Entered EMS for a career change/opportunity	57.5	82.7	<0.0001	69.9	82.2	<0.0001
Entered because job requirement or job financial incentives	12.7	34.2	<0.0001	27.3	23.7	0.1813
Opportunities for advancement are important	62.0	88.6	<0.0001	75.7	86.9	<0.0001
Satisfied with opportunities for advancement	77.9	62.4	<0.0001	73.2	55.1	<0.0001

For every aspect of EMS employment that differed significantly or was viewed as important programmatically across different-sized communities, significant differences were noted between volunteers and non-volunteers. Volunteers were less likely to enter the profession for excitement, less likely to enter for good pay and benefits, and less likely to report that pay and benefits were important. Volunteers were also less likely to enter the profession for a career change/opportunity, because it was a job requirement, or because there were financial incentives related to their job. Volunteers were less likely to cite opportunities for advancement as an important aspect of EMS employment and more likely to be satisfied with the advancement opportunities they have. Further, with the exception of EMT employment as a job requirement or as a job incentive, there were no significant differences among volunteers that can be

attributed to community size (Table 6). In the case of EMS employment as a job requirement or financial incentive, respondents in the smallest communities are the least likely to cite this as a reason for employment. For non-volunteers (25.7% of very small area respondents and 56.4% of small area respondents), community size made a difference for some aspects of EMS employment, with non-volunteers in the smallest areas less likely to have entered the field for excitement or for good pay and benefits and more likely to be satisfied with their opportunities for advancement.

Table 6: Differences in Motivation and Satisfaction for Volunteers and Non-volunteers by Size of Community

	Volunteers					Non-volunteers				
	Very Small n=119 %	Small n=110 %	Medium n=36 %	Large n=30 %	Chi square p value	Very Small n=55 %	Small n=269 %	Medium n=220 %	Large n=506 %	Chi square p value
Entered EMS for a job that is exciting	54.2	65.8	68.3	69.6	0.2546	56.9	74.7	83.7	83.5	0.0082
Entered EMS for a job with good pay and benefits.	7.9	7.4	13.6	21.4	0.3127	21.1	44.1	46.8	50.9	0.0029
Amount of pay and benefits is important	47.8	56.3	69.1	55.7	0.2567	86.8	96.2	93.9	95.7	0.4349
Entered EMS for a career change/ opportunity	47.7	62.7	65.0	68.4	0.0847	77.1	87.2	84.0	81.0	0.2709
Entered because job requirement or job financial incentives	6.5	12.4	15.8	40.4	0.0210	37.3	32.9	34.3	34.4	0.9654
Opportunities for advancement are important	59.3	62.9	69.5	59.1	0.7873	85.9	87.7	85.7	91.3	0.3423
Satisfied with opportunities for advancement	80.8	80.1	65.1	71.6	0.4052	79.8	57.4	58.1	63.7	0.0241

The reasons respondents entered the EMS field and the way they felt about their profession also differed significantly based on their level of certification in all aspects but one

(Table 5). Like volunteers, basic-level EMTs were less likely to have entered the profession for excitement, for pay and benefits, or for career opportunity. While pay and benefits and opportunities were important for most respondents, they were significantly less important for basic-level EMTs. Basics were also more likely to be satisfied with their career opportunities. Unlike the responses seen for volunteers, responses of basic-level EMTs, who also represent the vast majority of EMTs in rural communities, did vary by community size (Table 7). The proportion of basic-level respondents reporting excitement, pay and benefits, job requirement or financial incentives, and career opportunity as reasons for entering the EMS field generally increased as community size increased. A similar trend was noted for employment factors reported as important. In some cases, the association with community size leveled off for the two larger population groups.

Table 7: Differences in Motivation and Satisfaction for Basics and Paramedics by Size of Community

	Basic Certification					Paramedic Certification				
	Very Small n=138 %	Small n=168 %	Medium n=77 %	Large n=126 %	Chi square p value	Very Small n=36 %	Small n=211 %	Medium n=179 %	Large n=410 %	Chi square p value
Entered EMS for a job that is exciting.	53.0	67.5	78.9	80.2	<0.0001	81.6	80.9	82.2	84.3	0.8317
Entered EMS for a job with good pay and benefits.	10.3	22.5	39.2	44.1	<0.0001	24.6	44.3	39.0	52.3	0.0052
Amount of pay and benefits is important	56.0	73.2	84.4	86.7	<0.0001	90.8	96.2	95.2	97.6	0.4227
Entered EMS for a career change/ opportunity	53.2	73.3	76.9	79.6	0.0001	83.3	85.9	84.4	79.6	0.3525
Entered because job requirement or job financial incentives	14.3	23.5	36.7	41.7	<0.0001	16.7	25.1	18.1	26.2	0.2005
Opportunities for advancement are important	65.9	72.9	82.4	86.4	0.0012	73.2	88.6	81.2	89.7	0.0761
Satisfied with opportunities for advancement	80.8	73.1	64.3	70.1	0.0725	76.2	49.4	51.5	57.3	0.0349

Summary and Discussion

This analysis of data from a survey of nationally registered EMTs provides a glimpse into what motivates EMTs in rural areas to become EMTs, and ways that the motivation of those who work in small communities differs from that of EMTs in larger places. Like their urban counterparts, most rural EMTs wanted to be able to help others by providing medical care to those in need. They were less likely, however, to enter the field because they wanted an exciting job, and even less likely to enter the field for the pay and benefits or career opportunities offered

by such employment. Lesser importance of pay and benefits and career opportunity is not surprising, however, given that most (74.3%) EMTs in very small areas identified themselves as volunteers. A clear trend across size of community was noted for the importance of excitement, career opportunity/requirement, and pay and benefits. Thus, many of the survey options available to respondents were particularly relevant to those working in larger areas.

Similar agreement between rural and urban EMTs is seen when respondents were asked about which aspects of the EMS profession are important to them. Most cited working relationships, technical challenges, work schedule, and being able to help others. Again, rural EMTs differed in those aspects related to financial reward and career opportunity, once more a likely reflection of the volunteer nature of many rural EMT positions. Finally, when asked about satisfaction, this group of respondents, all of whom were working in EMS at the time of the survey, reported a high level of satisfaction (greater than 85%) with most aspects of their EMS employment, and those in very small and small communities were more satisfied with opportunities for advancement. More than 90% of respondents did not intend to leave the EMS workforce in the next 12 months.

The differences in the characteristics of the EMS workforce across community size may provide better understanding of the challenges facing rural areas in maintenance of an adequate response to medical emergencies. LEADS respondents overall are more likely to work in fire-based EMS services, but the type of service varies by size of community, with fire-based services only the third most common workplace designation in very small communities. The most common service type reported in very small communities was characterized as Volunteer Rescue (45.4%).

Although women are believed to be underrepresented in the EMS profession,[25] more than half of the 2003 LEADS respondents working in very small areas were female. As the size of the town increases, however, the portion of the EMS workforce that is female decreases. Increased diversity is not seen, however, in the racial make-up of the EMS workforce in the smallest areas where white EMTs predominate and decrease only slightly as population size increases. The age of EMS workforce also varies by geography, with EMTs who are 50 years or older making up one-quarter of EMTs in very small areas compared to less than 10% in the most urban areas.

This analysis of the 2003 LEADS data, which considers the size of the community in which the EMT works, underscores differences in the EMT workforce depending on employment location. These differing demographics have important implications for the development of programs and policies to address the needs of the rural EMS community.

Implications for policy

The national Institutes of Medicine's (IOM) recently released report, *Emergency Medical Services at the Crossroads*,[1] identifies pay and benefits unequal to comparable positions (i.e. nurses), lack of respect, and cultural divides between different models of EMS as contributors to nationwide workforce problems. Increased focus on pay and benefits and identification of additional revenue streams would address the concerns of many EMTs, including those rural EMTs working in non-volunteer positions, and could possibly help shift the rural EMS workforce towards the use of more paid personnel. However, for the majority of EMTs in rural areas who work in volunteer services, significant challenges remain. Programs and policies that address the needs of volunteer EMTs in rural areas can be informed by the differences in the

demographic EMT profile across communities of varying sizes. Women are represented in greater numbers in rural areas and policies that address their needs could encourage the participation of more women in the field. An EMS system's accommodations to the needs of women, such as equality in career advancement and visibility of sexual harassment policies, are several factors that may play an important role in attracting and keeping female EMS professionals.[25]

The racial diversity of the EMS workforce does not approximate the diversity in the general population with even less racial diversity in rural areas. There are significant minority populations in many rural areas who may represent an untapped source of EMS personnel. Identifying the barriers to minority participation and designing programs to recruit and retain minorities are additional strategies to address the EMS workforce shortage.

The EMS workforce in communities with less than 25,000 residents is older than the EMS workforce in other geographic areas and likely to remain so, given the shifting demographics in rural areas. In addition, the EMS occupation is emotionally stressful and physically demanding, and has a higher mortality rate, level of fatal accidents and injuries, and occurrence of early retirement due to medical conditions than has been documented in other health professions.[26] Local EMS officials have typically focused on recruitment of high school students, permitting teenagers with opportunities to ride along and undergo basic EMS education and training in hope that many will choose EMS as a career.[27] Given the demonstrated age differential across the rural/urban continuum and current population trends that have changed the demographics of rural areas, programs that support the participation in EMS by older workers would be beneficial. Incentive programs such as health insurance and retirement plans for

volunteers may be an effective tool for recruiting older workers and retaining those already working in the field.

Volunteerism has been described as the "life-blood" of EMS,[17] and the percentage of EMS professionals that are volunteers increases as community size decreases. Although not specifically addressed in this survey, anecdotal reports indicate that increasing demands on time limit all Americans' availability to volunteer in any community activity.[8,28] For those living in rural areas who might travel significant distances for employment, their time is limited even further. Flexible scheduling and incentives for employers to encourage community service could address these needs.

Many EMS models exist, and new models are continually being created as a result of local pressures,[10,17,29,30] including workforce challenges. National fire service organizations and associations have used "a majority fire-based models" argument to lobby for diversion of federal funding for EMS organizations to fire department-based systems.[31] This broad approach to allocation of funds for EMS services does not consider the geographic variation that exists across the country and would divert funds in rural areas away from the predominant model of EMS service, the volunteer rescue squad. Funding and program support policies that recognize and support the diversity in EMS across the United States are more likely to address the needs of this varied workforce.

Currently, there are few federal programs focused on improving recruitment and retention of EMTs and Paramedics. Previous programs such as The Rural Emergency Medical Service Training and Equipment Program (REMSTEP) provided limited funding to a small number of individual EMS systems that could use the funds for any number of purposes, which ranged from educating the public to acquiring equipment to recruiting personnel. While useful to those who

received REMSTEP grants, this small-scale program lacked the size and focus to provide sufficient guidance or replicable models to address the diversity of EMS needs. Another federal initiative funded the Rural EMS and Trauma Technical Assistance Center (REMSTTAC) which provided technical assistance to EMS organizations, mostly to rural and frontier systems, and performed various state level needs assessments and research projects focused on relevant rural EMS workforce challenges. Funding for this program, however, has ended. The Medicare Rural Hospital Flexibility Program is a third federal program still in operation that addresses the importance of EMS as a part of a community's health care system through grants to States. This multi-year program has focused primarily on the sustainability of small rural hospitals deemed critical to the care of their community and includes EMS as an optional component with considerable discretion given to State programs regarding if and how they address EMS needs.

Limitations

The LEADS project provides valuable information about the EMS workforce, but significant gaps remain in our understanding of why persons become EMTs, and particularly why they stop providing this valuable service. LEADS questions regarding satisfaction are limited to those persons currently working as EMTs and do not measure the concerns of those who have temporarily or permanently left the field. The high satisfaction rates may simply indicate that individuals who are dissatisfied with the field leave, either because as volunteers there is nothing to hold them or because as employees they have other more attractive employment options. In addition, like all population surveys, the responses represent those who chose to respond. Response bias, i.e., the propensity of one group with a particular point of view to respond, must be considered.

Conclusion

This study demonstrates important differences between rural and urban EMTs in demographic characteristics, why they become EMTs, and what is important about their jobs. New programs to support rural EMS should consider these factors. Those that incorporate innovative and flexible approaches while providing sufficient support to address the diverse array of EMS services are most likely to be successful. Further research that examines in more detail why EMTs leave the field would provide valuable information to policymakers seeking to improve the stability of the EMS system in rural and urban areas.

Reference List

1. National Institutes of Medicine. Emergency Medical Services at the Crossroads. Washington, DC. 2006. The National Academies Press

2. McGinnis, K K. Rural and Frontier EMS Agenda for the Future. Kansas City, MO. 2004. National Rural Health Association

3. U.S.Congress, O T A. Rural Emergency Medical Services - Special Report. OTA-H-445. Washington, D.C. 1989. U.S. Government Printing Office1-97.

4. McGinnis, K K. State EMS Rural Needs Survey 2000. Falls Church, Virginia. 2000. National Association of State EMS Directors

5. McGinnis, K K. State EMS Rural Needs Survey 2004. Falls Church, Virginia. 2004. National Association of State EMS Directors

6. Amrhein S. Volunteer vexation. *St Petersburg Times.* 17 Feb. 2006.

7. Trinko D. EMS volunteers critically needed, speaker says. *The Lima News.* 2006;C6.

8. Gruver D. Volunteer shortage taxes EMS. *The Wichita Eagle.* 26 Mar. 2006;1A-9A.

9. Staff. Rose Hill Volunteer EMS to end service. *Goldsboro News-Argus.* 9 Oct. 2005;3C.

10. Todaro V. Boro looks to establish paid ambulance service: Spotswood seeks to address shortage of volunteers. *Sentinel.* 17 Nov. 2005.

11. Olson C. Rural emergency care at risk: Minnehaha towns push for tax to support volunteer ambulances. *Sioux Falls Argus Leader.* 18 Dec. 2005;1A-5A.

12. Edwards B. Officials worried about losing emergency medical personnel. *Goldsboro News-Argus.* 10 Mar. 2006;1A-3A.

13. WBAL TV 11 News. Lack of paramedics creates concern for residents. 11-16-2005.

14. Gray J. Paramedics' ranks decline in rural areas. *The Birmingham News.* 28 Dec. 2005;1A-2A.

15. Ferreri E. EMS labor pool draining: Pay poses retention dilemma for county emergency agencies. *The News & Observer.* 16 July 2006;1A-10A.

16. Erich J. Wanted: warm and willing bodies to fill vacant seats. *Emerg Med Serv.* 2005;34(3):41-42-44, 46 passim.

17. No Authors Listed. Perspectives: Waning volunteerism is emergency for rural EMS. Med Health 55[19], 7-8. 2001.

18. Ferreri E. Paramedics lured away by better pay. *The News & Observer.* 16 July 2006;10A.

19. Ferreri E. Medics seek to ease service standard: Emergency workers hope to be able to retire with full benefits after a shorter career, but they face hurdles. *The News & Observer.* 13 Sept. 2006;B3.

20. Bureau of Labor Statistics, U. S. Department of Labor. Occupational Outlook Handbook, Emergency Medical Technicians and Paramedics. http://www.bls.gov/oco/ocos101.htm [2006-2007]. 12-20-2005. 12-29-2005.

21. Lu H, While AE, Barriball KL. Job satisfaction among nurses: a literature review. *Int J Nurs Stud.* 2005;42(2):211-227.

22. Patterson PD, Probst JC, Leith KH, Corwin SJ, Powell MP. Recruitment and Retention of EMTs: A qualitative study. *J Allied Health.* 2005;34(3):153-162.

23. Chng CL, Eaddy S. Sensation seeking as it relates to burnout among emergency medical personnel: a Texas study. *Prehospital Disaster Med.* 1999;14(4):240-244.

24. Brown W, Dickison P, Misselbeck W, Levine R. Longitudinal Emergency Medical Technician Attribute and Demographic Study (LEADS): An interim report. *Prehosp Emerg Care.* 2002;6(4):433-439.

25. Honeycutt L. Girl talk: an EMS educator reports her findings on the state of women in the industry. *JEMS.* 1999;24(1):50-53.

26. Sterud T, Ekeberg O, Hem E. Health status in the ambulance services: a systematic review. *BMC Health Serv Res.* 2006;6(1).

27. Truschel R. Job training in EMS starts in high school. *The News-Journal.* 22 July 2006;A6.

28. Lucash PD. The changing face of volunteer EMS. *Emerg Med Serv.* 1983;12(5):84-85.

29. Morgan S. Medical squads to merge with town fire department. *The Register-News.* 22 Dec. 2005;3A.

30. Barkley B. Residents respond to possible privatization of ambulance service. *Sweetwater Reporter.* 9 Aug. 2005;1-10.

31. Patterson PD. Emergency Medical Services and the federal government's evolving role: what rural and frontier Emergency Medical Services advocates should know. *J Rural Health.* 2006;22(2):97-101.