

RESEARCH AND COLLABORATION IN RURAL COMMUNITY HEALTH

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ABSTRACT

Developing collaborative projects that involve community health nurses, researchers, health providers, community groups and individuals is one way to increase an awareness of critical health needs. This paper describes a community, collaborative effort to bring a Remote Area Medical (RAM) event to southwestern Virginia and northeastern Tennessee. It also presents a description of the information gathered from the attendees of the RAM event that was used by local community health care agencies and politicians to leverage state and national officials for increased health care services for this area of Appalachia.

INTRODUCTION

Community participation with the implementation of health programs is an important way to raise the public's awareness and involvement with acute health problems (Maher, 2003; McKinnon, 2002). This paper describes the collaborative efforts of local community health nurses, nurse researchers, community groups and individuals, and local and regional health care providers with a Remote Area Medical (2002) (RAM) event in rural Appalachia. This collaborative RAM event arose out of a need to address access to health care services in southwestern Virginia and northeastern Tennessee (Virginia Health Care Foundation, 2001).

Officially, RAM is "a non-profit, volunteer, airborne relief corps dedicated to serving mankind by providing free health care, dental care, eye care, veterinary services, and technical and educational assistance to people in remote areas of the United States and the world. Founded in 1985, RAM is a publicly supported all volunteer 501 (C) (3) charitable health relief corps with no paid employees. Volunteer doctors, nurses, pilots, veterinarians, and support workers participate in expeditions...at their own expense. Medical supplies, medicines, facilities, and vehicles are donated (<http://www.ramusa.org>).

A community group consisting of community health nurses, nurse researchers, nurse practitioners, health providers, local service groups, churches, individuals and other community groups worked together with the RAM to offer health care events in two rural communities. The nurse researchers, who are also community health nurses, agreed to assist the project by collecting information from the attendees that could be used to disseminate information about the health care needs of this area to local, state, and national legislators. While RAM had provided valuable health services to people in this

region in the past, no information had been collected from the attendees on the actual availability of health care in their home area, the distances that they traveled to get to the RAM site or their specific, and ongoing, health care needs. This paper describes the information that was collected during two RAM events that were held in Wise, Virginia, and Mountain City, Tennessee, in July and October, 2002, respectively.

The driving force behind this collaborative project arose from the recognition of need for a RAM event by a local nurse practitioner and community health nurse, Sister Bernie Kenny. Sr. Kenny operates a mobile health van that delivers primary care services in very inaccessible, mountainous, and remote areas in southwest Virginia. In her several years of operating the mobile health van, she was impressed by the large number of people who were in desperate need of not only primary care, but dental and visual health services as well. She contacted the RAM organization and asked them to consider southwest Virginia as a site for a RAM, health care event. In addition to RAM personnel, she enlisted the aide of the local Lions Club, local universities, other service organizations in the area, church groups, hospitals, State Dental and Optometry Associations, medical and nursing organizations, clinics and individuals for support with the event.

The amount of support that was rendered varied greatly. There were individual community members with no health care experience who assisted with such things as parking, food service, directing RAM attendees to needed services, registering volunteers, registering patients, and transportation of patients from the parking area to the RAM site, and other needed services. Those volunteers with health care experience included primary care physicians, nurse practitioners, optometrists, dentists, dental hygienists, social workers, psychiatrists and psychologists to name a few. Other volunteers dispersed health information about such things as cancer prevention, smoking cessation, depression and family violence.

Planning for the RAM took one year. Sr. Kenny organized monthly planning meetings for the local volunteers, with meetings increasing in number as the event drew closer. An open invitation was extended and advertised in local newspapers to anyone or any group to participate. The RAM organization provided guidelines for setting up the event and assisted with identifying health care providers and others who could assist the endeavor. The scheduling of RAM events was determined by the RAM organizers and was based upon each community's resources including the availability of an appropriate site for the event and volunteer assistance.

Planning for RAM used a model similar to PATCH, Planned Approach to Community Health, which was developed by the Centers for Disease Control. This networking model has been successfully used in numerous settings and provides for planning, implementation, and evaluation. Horizontal (local) and vertical (regional, state or national) networks emerge while maintaining local ownership (Wurzach, 2003).

BACKGROUND AND GEOGRAPHICAL LOCATION

Wise, Virginia, is located in the far southwest corner of Virginia and is nestled in the hills and hollows of Appalachia. The area is noted for its beauty and for the large number of people who exist at or below the poverty level. Previous studies have illustrated that this area has higher morbidity and mortality rates than the rest of Virginia

(Schaller-Ayers, Huttlinger, Lawson, & Ayers, 2001; Huttlinger, Schaller-Ayers, Lawson & Ayers, 2003). It is an area isolated by rugged mountains narrow valleys and few major transportation linkages to other areas. Families have lived in this area for hundreds of years, caring for their own, and working in coal fields, harvesting timber and growing tobacco.

The Schaller-Ayers et al. 2001 study documented many of the problems that working poor people without adequate health insurance encounter when attempting to utilize existing health care services. The findings from this study illustrated that individuals who live in southwest Virginia experienced far more health problems than people in other parts of Virginia. Hypertension, loss of many teeth, mental health problems, diabetes, asthma, arthritis, obesity, and back problems were identified as the primary health problems. Health insurance was another consideration, with 96% of the respondents indicating that their quality of life was negatively affected by their lack of adequate health insurance. Lastly, people from the 2001 study indicated that despite their ongoing and chronic health problems, their greatest need was for visual and dental health care services. Given this information, the RAM organizers, along with the community volunteers, determined that the 2002 RAM event would primarily focus on dental and visual services although limited primary care would also be available.

Community members from Mountain City, Tennessee, requested that a RAM event be held in their community as well. Mountain City lies approximately 80 miles from Wise and is, like Wise, Virginia, an isolated regional Appalachian community with similar health problems and high levels of poverty. This community is located in the very far northeastern corner of the state, with higher morbidity and mortality rates for chronic and debilitating disease than other parts of Tennessee (Meyer & Blumenthal, 1996). In 2002, therefore, two RAM events were held, one in Wise in July, and the other in Mountain City in October.

A total of 3,310 people participated in the services that RAM offered in Wise and Mountain City in 2002. A survey of those who attended both events was conducted to determine how satisfied they were with the RAM event, to identify their perceived health care needs, and to determine the geographical service area that the RAM event covered. The results of the survey were to be used to improve future RAM events in the area and to demonstrate to local, state and national political leaders the need for health care services.

SURVEY INSTRUMENT

The survey instrument was adapted from an earlier study conducted by the researchers (Schaller-Ayers et al 2001). It had been previously pilot tested for reliability and validity. There were 25 forced answer items and three open-ended items. The variable categories included: descriptions of who came to the event, how satisfied they were with the services they received, an identification of services most needed and suggestions to improve the event. In addition, the organizers of the Mountain City event wanted to include questions about tobacco use and overall health status, two items which were not included in the Wise survey as data were collected on this criteria at a previous study (Huttlinger, Schaller-Ayers, Ayers & Lawson, 2003). Completed surveys were obtained from 517 attendees in Wise and 235 attendees in Mountain City. The following

table lists the demographics of the RAM attendees in 2002 and notes the major services performed.

Table 1

Demographics of RAM Event, Wise, Virginia, and Mountain City, Tennessee, 2002

Site	Number of people attending	Number of teeth pulled	Number of people having teeth cleaned	Number of teeth filled	Number of eye exams	Number of glasses distributed
Mountain City, TN	661	533	38	91	304	285
Wise, VA	2,649	2,908	260	871	1,042	642

METHOD AND HUMAN SUBJECTS APPROVAL

Attendees were approached as they stood in line waiting to register for RAM or as they waited to be seen at one of the health care service areas and asked if they would complete a survey form. A disclaimer stated they were under no obligation to complete the survey and that services would not be withheld if they did not participate. The investigators explained the disclaimer to the attendees and assured them that if they participated in filing out a survey that all of their responses would remain anonymous as their names would not be taken or recorded. There were no attendees who agreed to participate with the survey that could not read or write. Official human subjects approval was obtained from the organizing committee of both RAM events and from the Internal Review Board at East Tennessee State University.

RESULTS

The most overwhelming finding was the high satisfaction that people had with the RAM event. The mean response for satisfaction with services on a 5-point Likert scale was 5. Comments from attendees were also extremely positive regarding the delivery of “needed” care. For example, the following is a comment from Wise site: “Thanks so much. Lots of people would be without care if not for this.” Another comment from the Mountain City site noted, “I was very satisfied. Come to Johnson County more often. I certainly appreciate everything everybody did for me. Thanks so much. Be safe and will see you next time. Thanks.”

The following tables describe survey findings from both sites. Table 2 illustrates the percentage of first-time attendees relative to total number of attendees. At both sites, almost 75% of the attendees were first-time users of RAM services. In addition to RAM services and how often services were used, attendees were asked how many people lived in their household, if they had attended another RAM event in Appalachia during 2002, and the age range of household members.



Figure 1. RAM Attendees Wait to Register

Table 2
RAM, First-Time Attendees

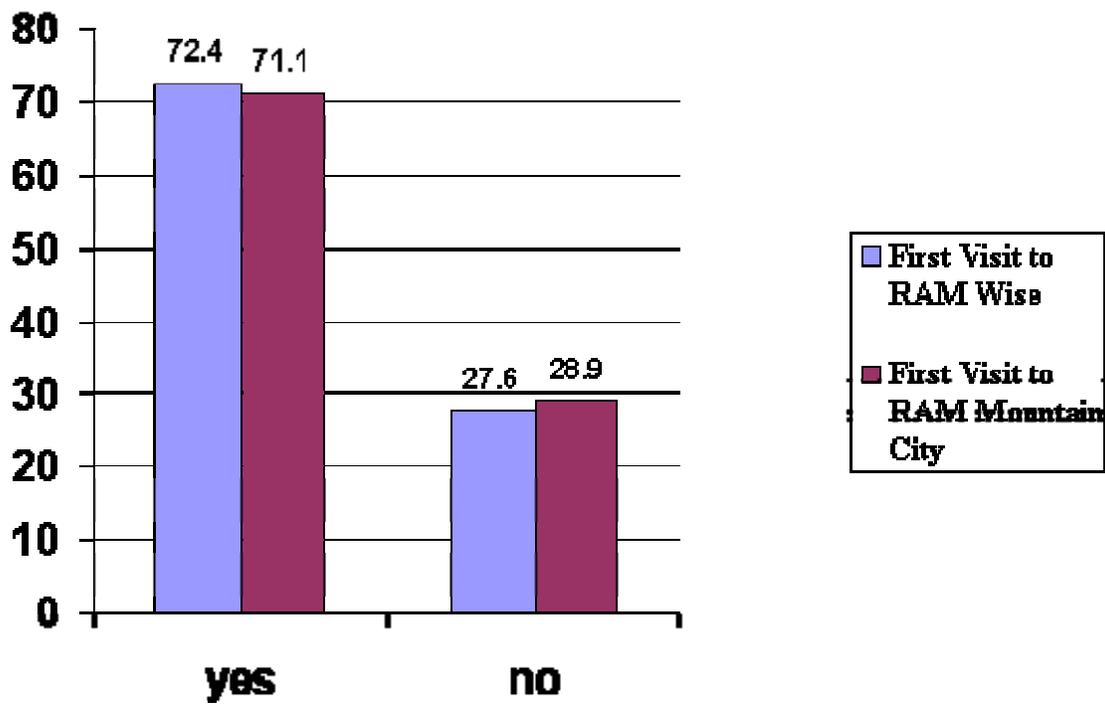


Table 3
Number of Visits to a RAM Event This Year

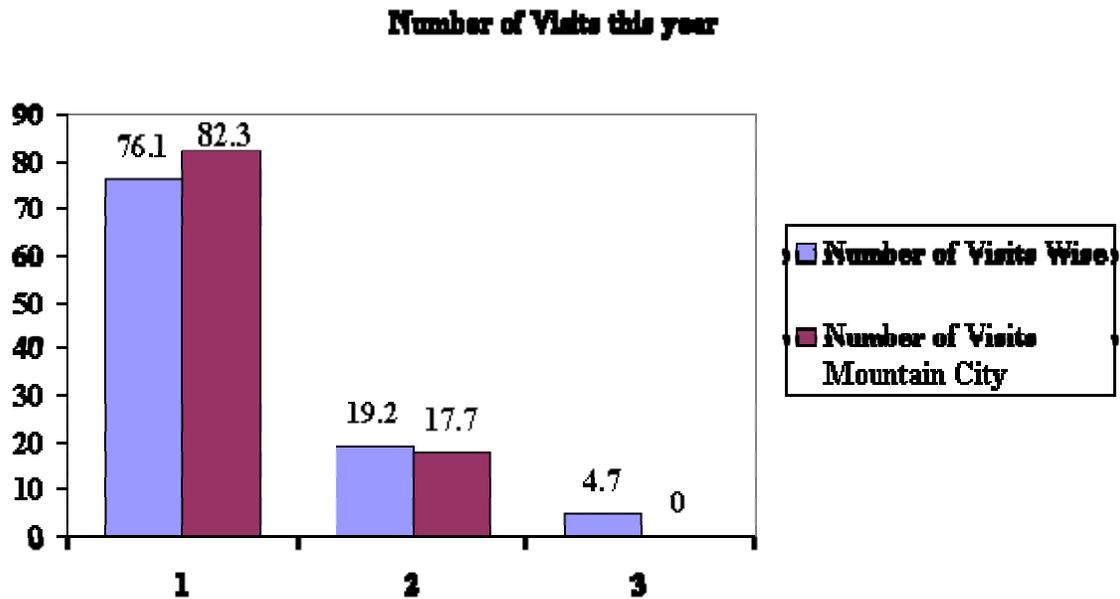
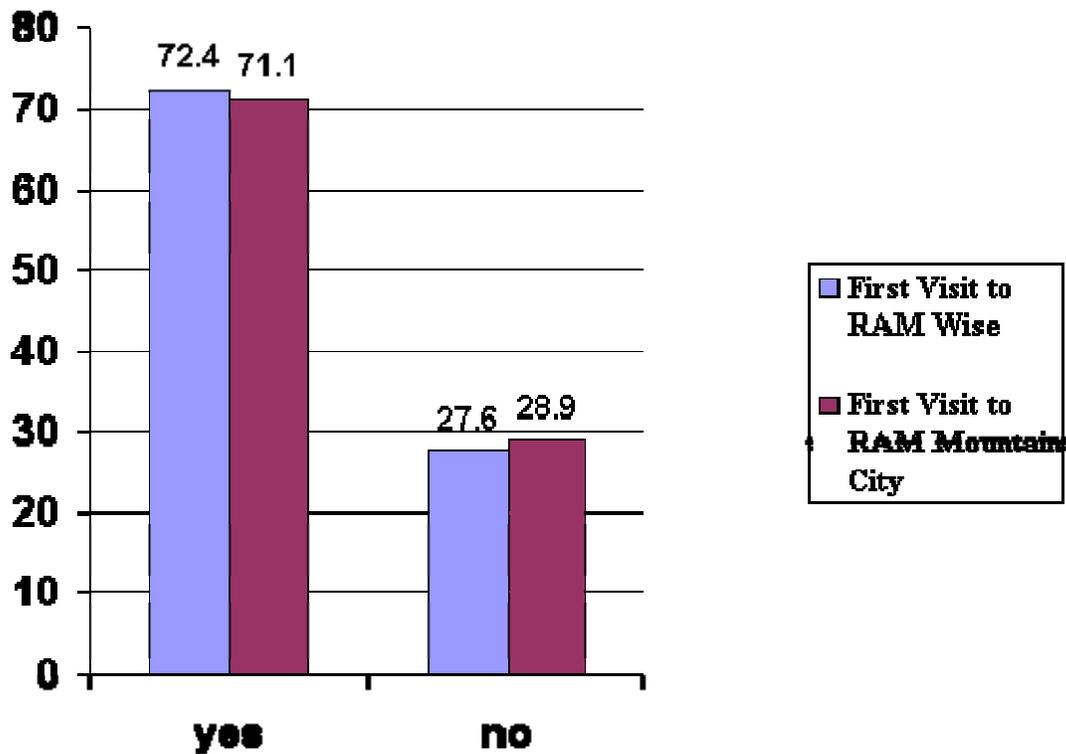


Table 4
Ages of Household Members

Site	Mean age of household members
Mountain City, TN	48.6 years (21-90)
Wise, VA	47.9 years (20-103)

The number of visits made by attendees to 2002 RAM events during 2002 varied from one to three, with most people (76-81%) visiting a RAM event one time. Some people could and did attend more than one event in the region (4.7%). The RAM event in Wise, Virginia, was held over three days, while the Mountain City was held for two days. The extra day in Wise might have allowed people from out of the immediate region the opportunity to attend. Repeat visits in one year were less than 20% for both groups.

Table 5
Number of Visits to a RAM Event in 2002



The number of people living in each household was also of interest to the RAM organizers and community members. The general belief was that there were large, extended families living under one roof throughout the region. However, the average in terms of median was two family members for each household in both communities, which surprised the RAM organizers as they expected the number of people living in a household to be much higher.

Another interest of the RAM organizers was the amount of time that it took to get to a RAM event. Since there is no public transportation in the region, it was believed that people must drive themselves or depend on a relative or friend to bring them to the event. Travel time to the RAM sites and when people started their trip are illustrated below. For both miles traveled and time traveled, a significant difference existed between Wise and Mountain City. Wise attendees traveled further and were in their vehicles longer than were the Mountain City attendees. The range for travel for Wise attendees was 1.50- 250 miles whereas the range for Mountain City event was 0.5 to 240 miles.

Table 6
Number of People per Household

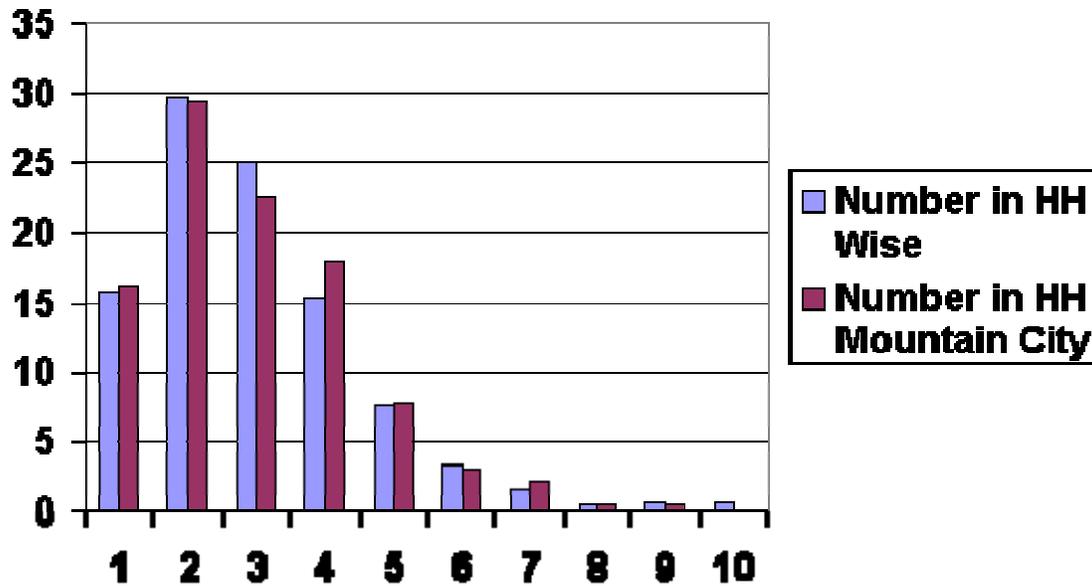
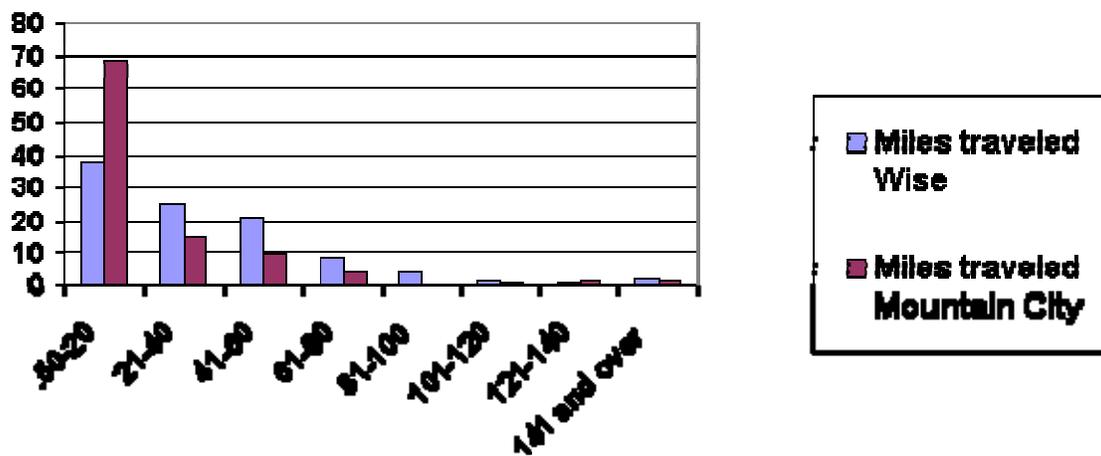


Table 7
Miles Traveled to a RAM Event



Information from previous RAM events indicated that people left their home several hours prior to the RAM event to get an early place in line for services. Table 8 illustrates the hours people left home to get to the RAM site and the time that they arrived to receive services. In general, the Wise attendees left earlier and arrived earlier than the Mountain City attendees to get in line for health services.

Table 8
Time Leaving for RAM Event

Site	Mean hour of day left home	Range of time	Mean arrival time	Range of arrival time
Mountain City, TN	5:53 am	12 AM-10:45 am	6:29 am	3:15AM-12:45 pm
Wise, VA	5:06 am	12 AM-12:30 pm	6:00 am	1:00 AM-12:40 pm

Since the major focus of RAM was to deliver services to the uninsured and underinsured, the organizers wanted to know the extent and kind of health insurance that was held by the RAM attendees. In many instances, RAM attendees had insurance, such as Medicare and Medicaid, that provided coverage for primary health care services but did not cover eye and dental care. Sometimes, the general public assumes that if one has health insurance then one has access to all health care services, which is not the case. One of the concerns of the RAM organizers was that there were unmet health care needs even with those who had insurance. One other point is that sometimes, the deductibles for use of health care insurance were so high that many people elected not to use their insurance coverage and did without health care. Tables 9 and 10 illustrate RAM attendees' health insurance coverage. There were no statistical differences between the Wise and Mountain City sites. More than one half of the attendees had insurance, with Medicare and Medicaid being the most common carriers.

Table 9
Insurance Coverage

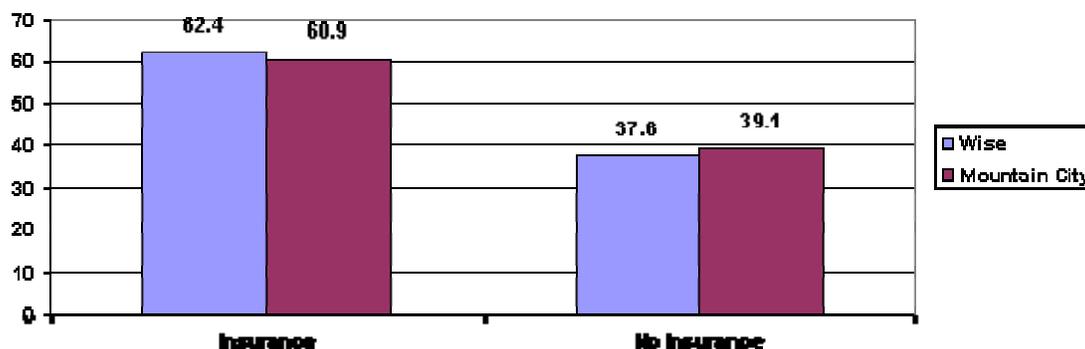
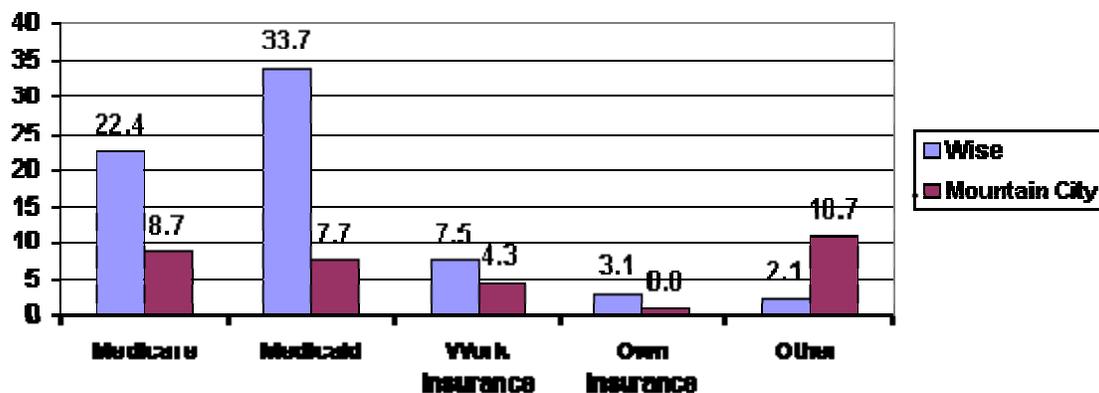


Table 10
Type of Insurance



How the attendees learned of an upcoming RAM event was important to the organizers. Those who attended RAM at both sites learned of it through via several sources including friends and neighbors, television, newspapers, and flyers posted at community gathering places. The following pie tables illustrate how individuals learned of the health fairs. Since RAM services were targeted to the uninsured and underinsured, it was not surprising to learn that health providers were not frequent sources of information. Although flyers were considered more useful in Wise than Mountain City, flyers seemed to be important for both groups.

Chart 1

Sources of Information for RAM Event – Mountain City

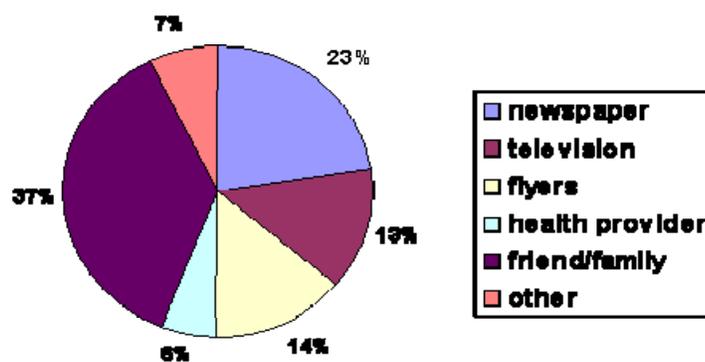
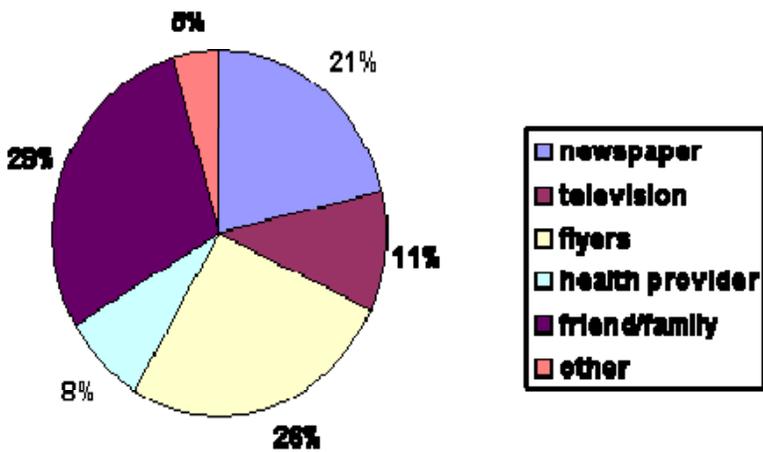


Chart 2
Sources of Information for RAM Event – Wise



Because of a concern regarding points of service, attendees were asked what they would do if RAM was not available for their dental and visual care. The following tables illustrate what most people indicated they do if RAM dental and eye care were not available to them at these events.

Table 11
If No RAM, What Would You Do For Dental Care?

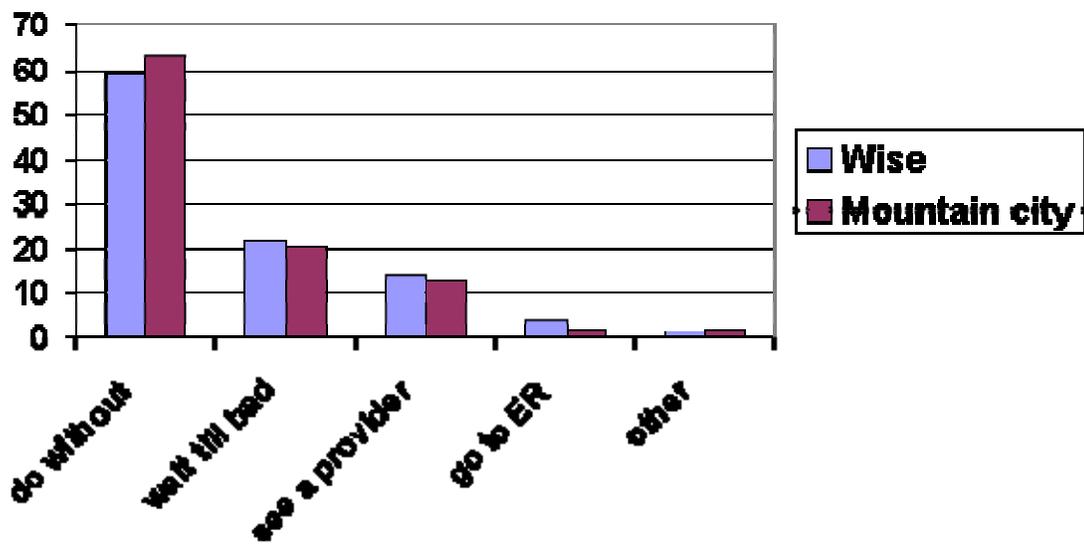
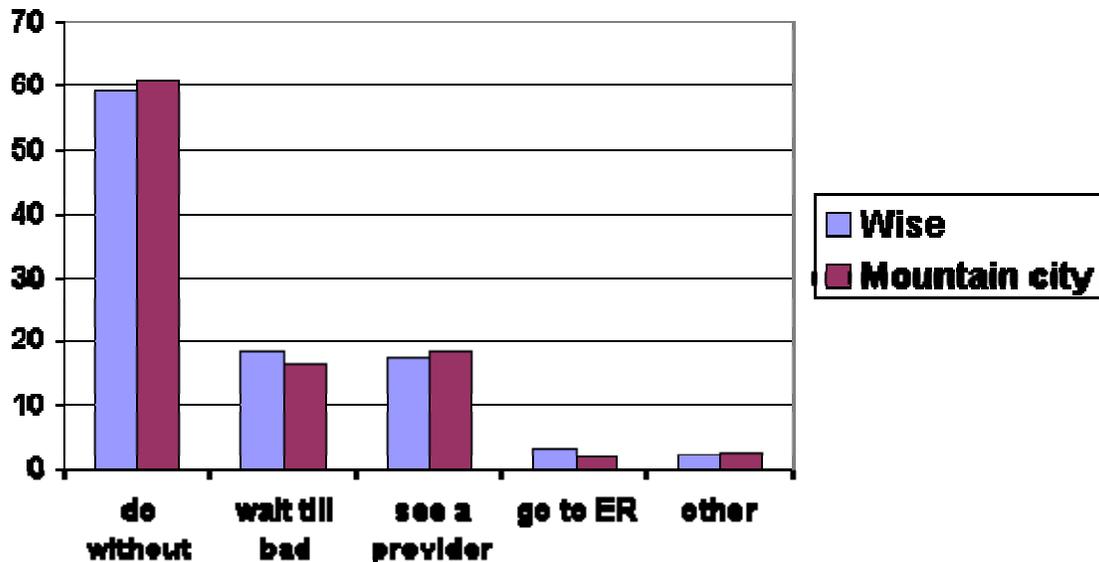


Table 12
If No RAM, What Would You Do For Eye Care?



Six items on the survey instrument addressed satisfaction with services received at RAM. The following tables illustrate high levels of satisfaction for all services. There were no statistical significant differences for satisfaction levels between the Wise and Mountain City sites, except for other services. More “other” services were identified at the Wise site. The Cronbach alpha for these items was 0.92.

Although information on tobacco use was not collected on the RAM attendees in Wise in 2002, the information from the 2001 survey was compared to that obtained from the RAM 2002 Mountain City attendees. There were statistically significant differences between Wise and Mountain City attendees in data reflecting health status and tobacco use. There were no statistically significant difference for income and exercise. Overall, the Wise attendees indicated lower health status and greater tobacco use than did the Mountain City attendees. There were only slight differences, 2%, in numbers of people using alcohol.

Attendees' Comments

In addition to closed ended questions on the survey form, a space was provided for attendees to write in additional comments about desired health care services not offered at RAM, improvements, and suggestions. Forty-four percent of the Wise and 78% of the Mountain City attendees made comments. A few of the attendees' comments are listed below.

Table 13
Satisfaction with Services

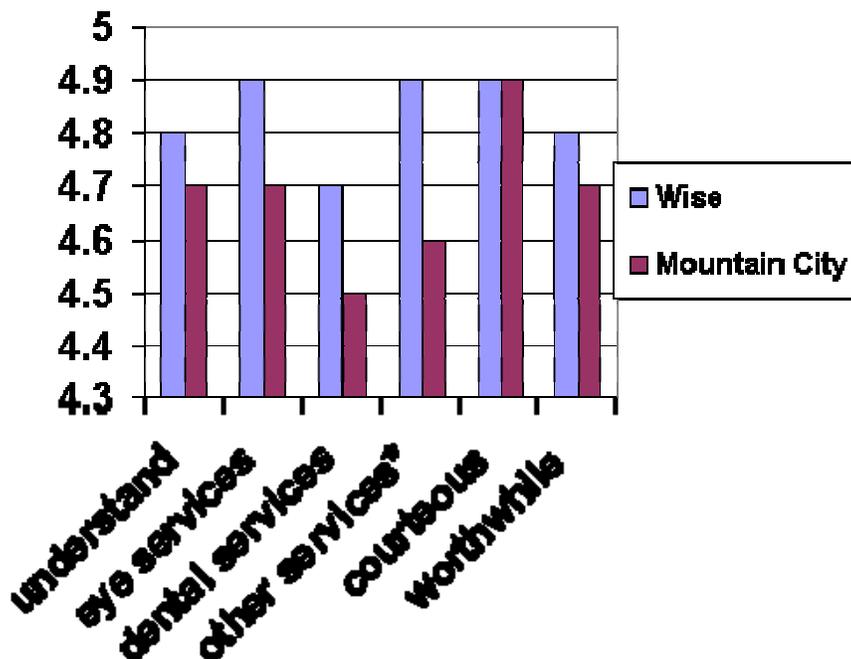


Table 14
Tobacco Use and Health Status

Site	Mean Income Range	Health Status (good to excellent)	Tobacco Use	Exercise Regularly	Use Alcohol
Mountain City, TN	10,000-14,900	49%	55%	58%	19%
Wise	10,000-14,999	31%	72%	48%	17%

Services Requested. Attendees requested more doctors, dentists, eye doctors, medication, hearing services, dentures, dermatology, diabetic services, physicals, orthopedics, cancer services, cardiovascular check ups, cholesterol screening, and X-rays. Examples of comments included:

- I really needed a partial plate, real bad. I came so early I still did not get any so I got my teeth cleaned instead. I was very disappointed not getting any partial.
- Flu shots and other types of shots. People with bad health problems that need these services have a way for them not to have to wait as long as everyone else but they need proof of their illness.

Need for Further RAM Events. Overall, attendees desired RAM services to be available more frequently, have longer hours, and more days. Examples of these comments included:

- Have this service more than three days. All people in this area are poor, and have no insurance or jobs. It would be great if this service could last a bit longer because lots of people get turned away.
- Have more days and be here longer.

Organization. Attendees desired greater organization of services offered. For example, they commented:

- Hand out numbers when you get off the bus to prevent people from skipping line.
- I suggest entertainment and more shelter and chairs.
- Reduce smoking in line!
- I got 11 teeth pulled and feel great. Would do it all over again.
- Eye care and dental care is the most important and to do partial. The wait could not be as long and they could offer food or drinks and chairs. They could also give pain medicine when you get a tooth pulled.

SUMMARY AND CONCLUSIONS

This paper described how community health nurses and nurse researchers collaborated with other health care providers in a rural area to enlist the support of the community to host a RAM event. Information collected from RAM attendees was used to better plan future events and to increase public awareness of the need for health care in rural Appalachia. Importantly, this awareness was transferred to hard data that could be used by legislators at local, state and national levels to leverage money and programs for health care. This collaborative effort yielded not only a health care service event for an underserved area but revealed important information about access to health care services as well. The actual findings from this study indicated that the attendees at both sites were very satisfied with services provided, but wished that the services could be offered more frequently. In addition, although the majority of the attendees had some form of insurance, having health insurance did not guarantee access to needed health care. The attendees had low income levels, high tobacco use, and poor health status ratings. These findings alone indicate a need for comprehensive and affordable health care for all and how the collaborative efforts of a community can raise public awareness of a critical health issue.

REFERENCES

- Huttlinger, K., Schaller-Ayers, J., & Lawson, T. (in press). Population-based care: An Appalachian case study. *Journal of Public Health Nursing*.
- Maher, D. (2003). The role of the community in the control of tuberculosis. *Tuberculosis*, 83, (1-3), 177-182. [MEDLINE]
- McKinnon, M. (2002). The participation of volunteers in contemporary palliative care. *Australian Journal of Advances Nursing*, 19(4), 38-44. [MEDLINE]
- Meyer, G.S., & Blumenthal, D. (1996). TennCare and academic medical centers: The lessons from Tennessee. *Journal of the American Medical Association*, 276, 672-676. [MEDLINE]
- Remote Area Medical Volunteer Corps. (2003). What is remote area medical? Retrieved January 26, 2003, from <http://www.ramusa.org>
- Schaller-Ayers, J., Huttlinger, K., Lawson, T., & Ayers, J. (2001). *Health care access in rural Appalachia*. Symposium presentation at "Head for the Hills: A Retreat for Primary Care Providers," Breaks Interstate Park, October 26, 2001.
- Virginia Health Care Foundation. (2001). *Results of Virginia's 2001 health access survey*. Joint Commission on Health Care. Richmond, VA: Virginia Health Care Foundation.
- Wurzhach, M. (2002). *Community health education and promotion: A guide to program design and evaluation*. Gaithersburg, MD: Aspen Publications.