

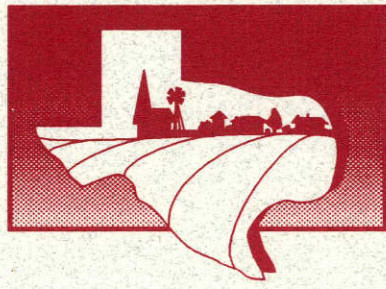
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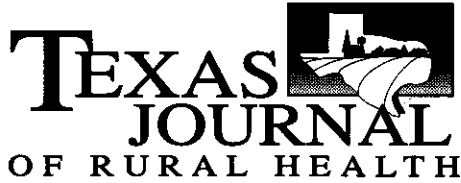
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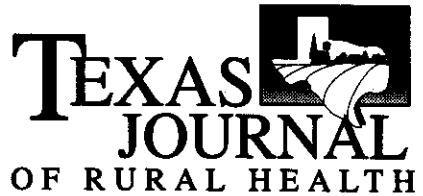
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The purpose of this journal is to provide a forum for sharing ideas related to rural health.

Authors are encouraged to submit relevant and current research studies as well as legislative and/or health care policy papers. Descriptions of innovative strategies in primary health care settings are especially welcome. Manuscripts will be evaluated for pertinence to the issues on a statewide basis. Response to our articles is also encouraged and will be printed under the section "Letters to the Editor."

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Step Two: Blind or Masked Review Process

The editor and managing editor reserve the right to invite manuscripts for publication. The editor and managing editor also reserve the right to accept or reject manuscripts outright. Before a manuscript is sent for review, it **must** meet APA specifications. Manuscripts sent for review are read by those considered experts on the subject. Thus, a peer review is conducted. The author’s name does not appear anywhere on the manuscript, providing a fair review.

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Step Four: Editorial Board

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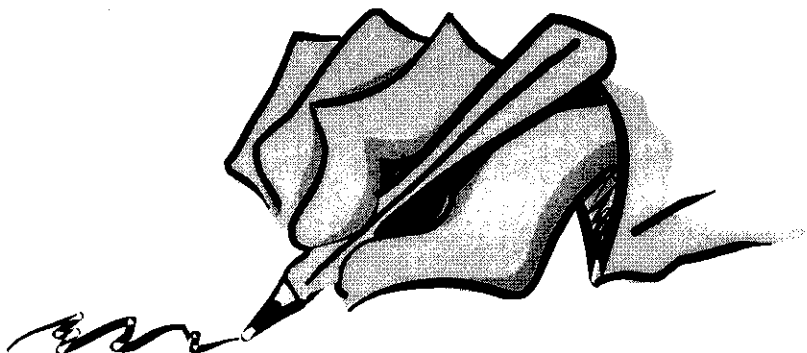
Step Seven: Getting Ready for Publication

The managing editor performs the job of editing, proofing for grammar, syntax, spelling, and word usage and then puts the manuscript into page layout form.

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Call for Papers



The *Texas Journal of Rural Health* is currently accepting manuscripts for publication on various topics relating to rural health issues. We are looking for articles to go into our new sections:

- **Notes From the Field**
- **Policy and Law**
- **Research**
- **Review Articles**
- **Brief Reports**

Some topic examples are listed below:

- **Community and Migrant Health Centers**
- **Critical Access Hospitals**
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- **Primary and Emergency Care in a Rural Setting**
- **Current Legislative Issues**
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Papers should be submitted to the Managing Editor as outlined in the “Instructions for Authors.” Because of our updated look, we are more than happy to accept manuscripts longer than outlined in the “Instructions.”



Acknowledgement



The *Texas Journal of Rural Health* would like to kindly thank the Center for Rural Health Initiatives for underwriting in part the costs associated with this issue.

The Center for Rural Health Initiatives serves as the designated State Office of Rural Health for the State of Texas. In that role, the Center advocates for the broad spectrum of rural health issues and needs. One of those areas is research in or relating to rural health issues. Research is an important component of health care in that it can help discover, uncover, or recover advances or interventions advantageous for health care changes, interventions, or strategies. Working with the provider community, educators, and the consumers of care, research is an important component of the comprehensive search for answers.

The Center for Rural Health Initiatives understands that a broad overview of the entire rural health care arena includes rural health research. It is important that all components of the rural health mosaic are recognized. It is also critical to understand that all these components must interact, working toward a common goal. That goal is the availability of quality and reasonable health care in order that rural citizens may enjoy the best quality of life possible. Research is a partner with delivery by providers, education, and training by institutions, advocacy by professional associations, and regulation by a well-informed legislative and regulatory community. To that end, the Center is proud to assist in the effort in every way it can.

Robt. J. “Sam” Tessen, M.S.
Executive Director (past)

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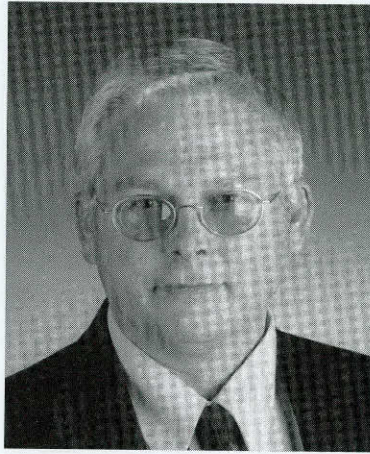
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PRESIDENTIAL ELECTIONS
AND PIECES OF THE
PRIMARY CARE PUZZLE

As I begin to write this editorial, the presidential election is in its final 48-hour period. To some, the future is held hostage to the outcome, with one choice leading to shining opportunities and another choice leading to a new dark age. Pardon my cynicism, but I suspect that the perennial problems of rural America will persist, regardless of who next occupies the oval office. Federal health policy reflects an equilibrium of power; competing interests both within and outside of the national government have arrived at a balance that gives priority to concerns other than rural health. This reality may change a little at the margins, but no revolution in rural health policy is waiting to unfold. Instead, rural communities will be left to handle most of their problems with minimal assistance, just as they always have.

Let's consider just one of those issues: access to primary care. The problem of access to primary care places us on the horns of a dilemma: any effort to increase the supply of primary care providers in rural areas could jeopardize the livelihood of those already in practice. Just as there is only so much grass on the range, there is a limited amount of medical income that can be derived from serving a given population. The question, How many do we need? is always balanced against, How many can the community support? The second figure often is smaller than the first. Neither party has a platform plank that will solve this problem.



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Fortunately, some strategies have not been given a fair test, thus, leaving us room to experiment. In many rural communities, a public health agency, rural health clinic, and physician's office can be found within a few blocks of each other while a satellite clinic affiliated with a community health center is in the next city. The public health agency clinic may lack physician input, the rural health clinic may be staffed on a part-time basis, the physician's office cannot afford to pay nurse practitioners or physicians assistants because of a shortage of patients with good insurance, and the community health center is swamped with low-income patients. Putting the pieces of this puzzle together could make a single picture that amounts to a well-managed and adequately resourced (no frills, of course) local medical care system with the potential to

produce services far more effectively and efficiently than the fragmented system we now have. Yet, different funding streams, ridiculous eligibility restrictions, and turf battles prevent the puzzle pieces from becoming a pretty picture.

The federal government could reduce the level of fragmentation, of course. However, we should at least consider the possibility that the diverse funding streams could be blended informally by well-meaning, sensible, cooperative people who also are friends and neighbors. Maybe we should put all the pieces together locally and tell the federal government about it later, or not at all.

INTERVIEW WITH KEITH MUELLER

Lee Ann Paradise
Managing Editor
Texas Journal of Rural Health
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INTERVIEW

Keith Mueller, Ph.D. is a professor and the Director of the Nebraska Center for Rural Health Research, University of Nebraska. He was the 1996 to 1997 President of the National Rural Health Association, and the recipient of the Association's Distinguished Rural Health Researcher Award in 1998. Dr. Mueller's Ph.D. is from the University of Arizona in Political Science. He is the author of a University of Nebraska Press book, Health Care Policy in the United States, and has published more than 30 articles on health planning, access to care for vulnerable populations, rural health, and access to care among the uninsured. He is the Chair of the Health Panel, Rural Policy Research Institute, and primary author of a number of its publications dealing with rural implications of health reform legislation, analysis of legislation focused on rural health, analysis of the Balanced Budget Act of 1997 and the Balanced Budget Refinement Act of 1999, and analysis of changes in Medicare policy. Dr. Mueller has directed major health services studies funded by the United States Agency for Health Care Policy and Research, the Federal Office of Rural Health Policy, and the Robert Wood Johnson

Foundation. He has testified on numerous occasions before committees of Congress and in other forums, including the Bipartisan Commission on the Future of Medicare and the Medicare Payment Advisory Commission.

LP: There's been a lot of talk lately about the future of managed care in rural areas. What role do you think managed care will play in rural areas over the next five years? Will it expand?

KM: Without legislative change, the role will be very minimal. It will not go completely away, however. There will be some residents enrolled in plans offered through regional and national employers. A lot depends, though, on future changes in the Medicare program.

LP: Do you think it might be locally controlled?

KM: Yes. Local providers will play an important role and will probably enter into more partnerships with insurance entities.

LP: Will it hurt or help rural areas and do you expect to see larger co-pays and deductibles?

KM: Copays and deductibles are going up everywhere. It's a matter of simple economics that they are going up.

LP: What do you think is likely to be the long-term future for rural populations in regard to financial healthcare assistance?

KM: We are likely to see some incremental policies to make it easier to buy your own health care. Increased tax breaks for buying insurance may be available. Maybe some expansions of the CHIPS program will be forthcoming and provide some relief to families with children.

LP: In general terms, how will the new BBA legislation effect the average rural resident? What type of patient will be most effected by the new legislation?

KM: That varies by what policy change we look at. The overall impact is on the providers—the hospitals and physicians. When Medicare is hit hard enough and providers can't stay in an area long enough to provide consistent health care, everyone is effected.

LP: You recently mentioned that a "blessing in the BBA was the creation of the Medicare Rural Hospital Flexibility Program, which created a new classification of rural hospital, the Critical Access Hospital (CAH)." Could a hospital being reclassified as a CAH have negative effects on a rural community? If so, what are they?

KM: The only way that I could see that happening is if a hospital dramatically changed what it was doing and, thus far, that has not been the experience.

LP: With the upcoming presidential election, what types of questions should we be asking the candidates in regard to health care in America, especially rural health care?

KM: The most important question is what will they do to get us closer to universal coverage. Even just framing the debate as a demand for universal coverage would be a step forward. Right now the candidates seem to be responding with improvements, but without outlining a measurable goal such as the 98% goal that Bill Bradley proposed.

LP: What is the best way for a community to be heard that may be made up of mostly elderly people? Should communities form a coalition and then petition outside sources for help or work together as a group?

KM: The best way to be heard is to do it as a rural community, but to do it as a unified rural community.

LP: One problem rural communities face is trying to attract health care providers. What can be done to improve rural health care accessibility?

KM: There are two levels to that question. First, the local community itself needs to decide how much it really wants local health care and take steps to ensure that they have and use what they want. Start with the people that are already there, because those of us from rural communities are more likely to return home. Second, on the state level it's important to create training programs that have rural physician retention as one of their objectives.

LP: Do you know of any good programs that have been successful in meeting that objective?

KM: Yes, the Minnesota program in Duluth is a good one. Our program here in Nebraska has been successful. The Thomas Jefferson Medical Center in Philadelphia has a good record with regard to this issue also.

LP: What would you tell a health care provider who would like to practice in a rural community about the differences between health care in a rural area and urban health care?

KM: The scope of practice is the big difference. It is far broader than it is in an urban area, because they won't be referring their patients to specialists as much as their urban counterparts.

LP: What would you say to people hoping to effect change through advocacy?

KM: Be careful what you ask for and even fixes such as the CAH, which I think is very important, won't solve everything in rural health care delivery. The legislators tend to think 'we gave you what you wanted, now go away.'

DRAWING ON LOCAL EXPERTISE TO MEET MENTAL HEALTH NEEDS AFTER A SCHOOL SHOOTING

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NOTES FROM THE FIELD

ABSTRACT

Following a shooting at the high school in Pearl, Mississippi, local resources were quickly convened to address mental health needs. The present article provides an overview of the interventions organized by the school district. Strategies for addressing concerns regarding the intervention philosophy, credentials, and liability coverage of volunteers are discussed. The roles played by emergency services critical incident debriefing team members, mental health professionals, school counselors, teachers, school nurses, and local clergy are described.

Key words: mental health, Mississippi, psychological counseling, rural, school shooting, trauma recovery. (*Texas Journal of Rural Health* 2001; 19(1): 6-13)

INTRODUCTION

Most disaster scenarios include a number of potentially controversial decision points. The school shooting in Pearl, Mississippi in October 1997 was no exception in this regard. Administrative decisions had to be made regarding strategies for addressing the community's concerns regarding school safety and accountability. Ways of evaluat-

ing rumors of cults, conspiracies, and additional threats had to be planned. A strategy for dealing with disruptive individuals at memorial services had to be developed and coordinated with law enforcement. Leadership needed to coordinate with the media to respond to questions and proactively disseminate information about coping and recovery. Options for canceling or postponing scheduled standardized testing had to be considered. Amidst these tasks, administrators also had to decide whether and how to provide crisis counseling services to those impacted by the event. In discussing these issues at various community and professional meetings in the three years since the shooting, two issues evoke the most diverse opinions: (1) the evidence in the literature for and against the use of a formal critical incident debriefing model, and (2) who should be involved in the provision of counseling following the incident.

Pertaining to the first point, the field is undergoing a shift. Until recently, the critical incident stress management model had been promoted and accepted as the standard of care for crisis response (Everly & Mitchell, 1997). A major component of this model is "critical incident stress debriefing." Debriefing sessions are generally conducted in a group format. Following a semi-structured series of steps (introduction, review of facts, thoughts, affect, symptoms, teaching coping strategies/normalization of typical reactions, summarization), participants are encouraged to fully describe the incident that occurred. While some evidence supports group debriefings (Everly, Boyle, & Lating, 1999), there is also a growing literature reporting mixed results or deleterious effects associated with post-event debriefing (Mayou, Ehlers, & Hobbs, 2000; Rose & Bisson, 1998; Solomon, 1999). Some reviews advocate waiting two to six weeks before offering any intervention (Solomon, 1999). Because this controversy

continues to be addressed extensively in the existing literature, this article will not focus heavily on the issue. However, it is worth noting that there is incredible pressure from both organizational liability and public relations standpoints to offer some form of service immediately after an incident occurs. After any tragedy, there tends to be a cloud of blame looking for places to attach itself. Unless an organization quickly takes a proactive stance in assisting survivors of an on-site tragedy, the public perception is likely to be that the organization (in this case, the Pearl Public School District) is part of the problem rather than part of the solution.

The central topic of this paper is the second controversy, i.e., if immediate counseling is provided, who should be involved in the delivery of those services.

BACKGROUND

The shootings at Pearl took place as students gathered in a commons area on a Wednesday morning, prior to the beginning of the school day. Two students were killed and seven others wounded. (Later, the shooter's mother was also found dead at home.)

Within minutes of the shooting, the assailant was apprehended by a school official. School was immediately dismissed. The police department chaplain began informally counseling those on the scene. As soon as the news became public, local churches began planning vigils and memorial services.

School officials held a press conference approximately two hours after the shootings. It was announced that debriefing sessions would be offered for staff on Thursday morning and for students on Friday morning, and that classes would resume the following

Monday. Following the press conference, the author was contacted to organize the debriefings and other mental health aspects of the crisis response.

Within hours of the shooting, representatives of the state department of mental health and local medical school arrived at school district offices to offer manpower and expertise. Other local and regional mental health professionals and clergy began calling to offer assistance.

INTERVENTIONS ORGANIZED BY THE SCHOOL DISTRICT

Interventions with Staff

A hallmark of the American Red Cross (ARC) philosophy on disaster mental health is that maintaining the capacity of your support team is a primary goal, and often is a greater priority than direct care to an individual disaster victim. The logic is that a functional team can serve the most victims in the long run. Consonant with this view, maximizing the coping of school staff was seen as a major priority not only out of concern for their well-being but also because their assistance would subsequently be needed to respond to the needs of students. Two concurrent sessions were conducted for school staff on Thursday morning, with those most proximal to the incident in one group and those less directly involved in a second group. These large group sessions followed the sequence of a formal debriefing (introduction, review of facts, thoughts, affect, symptoms, teaching coping strategies/normalization of typical reactions, summarization), but with general group participation at each phase rather than formal turn-taking. The goals of the sessions were to assist staff, screen for any acute distress that would warrant individual care,

and prepare staff for the sessions planned for students on Friday. The staff sessions took place at district administrative offices a few miles from the high school.

Some staff were tearful, but all were strongly committed to addressing their own reactions effectively so they could best support the students. One concern shared by most of the staff was whether they would be able to maintain their composure on Friday morning when they returned to the school for the sessions with the students. A group visit to the site of the shooting was proposed so that staff would not be returning to the site for the first time in the presence of students on Friday. Although no one was particularly eager to return to the site, staff embraced the suggestion and a trip to the high school was added to the Thursday morning staff session.

Interventions with Students

Volunteers convened at 7:30 a.m. on Friday for instructions. School administrators conducted a general assembly with students at 8:20 a.m. Then students reported to their homerooms. Friday was not considered a formal school day, and student attendance was voluntary. Three adults were assigned to each homeroom: the homeroom teacher, a mental health professional, and a local pastor or youth minister. Students were free to leave the group discussion sessions at any time. Individual counseling was available for those who might not be comfortable discussing their concerns in a classroom group, or who might need more intensive follow-up.

Attendance was greatest among students who knew the deceased. Many members of the senior class, who would have had the least contact with their younger classmates, opted not to attend. The emotional tone among those who attended was varied. Some, particularly girls who knew the slain students, were initially tearful. Many girls and boys

took on a caregiver role, comforting their distressed classmates. Many students were focused on the philosophical question of why someone would do such a thing. Fears that the shootings were part of a larger cult or conspiracy were also expressed. Anger toward the shooter was expressed.

Over the course of the morning, students began to emerge into the central commons area once they had completed their classroom discussions. Refreshments were offered in the commons area—deliberately placed near where the shootings had occurred, in an effort to minimize phobic avoidance of this location. As students lingered over refreshments, small groups of students would walk over to the site of the shootings and talk amongst themselves, pointing to repaired plaster where bullets had been removed.

By 10:30 a.m., all groups had adjourned and buses were waiting to transport students home. Many students planned to attend the two funerals scheduled that afternoon. Volunteers met from 11:00 a.m. to 11:30 a.m. to share impressions and convey any areas of concern.

Interventions with School and Community Officials

The author worked closely with school and community leaders throughout the days following the shooting, planning interventions, coordinating with the media, and providing ad hoc mental health services. On Monday evening, when the dust finally began to settle, the author conducted a separate session for school administrators, the school board, and community officials. Similar to the session that had been held for school staff on Thursday, this session covered most of the content that would be addressed in a formal critical incident debriefing, but employed a less formal discussion format. One of the

reactions that all members of this group shared was surprise at how utterly exhausting and demanding their various roles had been since the shooting. There was a consensus of satisfaction that a terrible situation had been handled as well as possible under the circumstances, and that all looked forward to a return to more mundane daily duties.

SELECTION OF VOLUNTEERS

While conducting debriefings secondary to other workplace shootings during the preceding year, the author had an opportunity to observe the potential for difficulties when either (1) bringing in outside disaster specialists or (2) relying on mental health workers from the local community who were unfamiliar with disaster work. In the first scenario, the author was invited to assist after a multiple murder at the local fire station. Although a member of the same geographic community, the author was an outsider to the fire department culture. As a result, she was far less effective than the in-house critical incident debriefing team in providing care. In the second scenario, in-house mental health staff were used to conduct debriefings following a murder-suicide at a local medical center. Accustomed to dealing with chronic psychopathology, the clinicians had difficulty tolerating the acute anger and grief of their peers without trying to “correct” perceived dysfunction.

Based on these past experiences, the author sought the ideal, i.e., mental health personnel who were indigenous to the community and had specialized training and experience with disaster/critical incident response. Given the potential for litigation, certification and malpractice coverage issues were also a concern. As may well be the case in many rural locales, however, only a handful

of local providers met all these criteria. Given this limitation, the decision was made to rely on several categories of indigenous providers who worked under the auspices of their specific agencies and whose various areas of expertise were viewed as mutually complementary and synergistic.

American Medical Response (AMR)

Staff of the local ambulance service, AMR, were among the first on the scene. Their affiliated critical incident response team was not indigenous in the sense of the individuals living locally—the team was based 150 miles away. However, they were indigenous in the sense that they were part of AMR, and AMR had already initiated an on-the-scene counseling relationship with many of the school teachers. The author had been impressed with AMR's previous handling of a workplace shooting at the Jackson, Mississippi Fire Department. Plus the team was specially-trained and had liability coverage through AMR.

The AMR response team was nervous about working with “civilians,” being accustomed to working only with emergency personnel. As a team already used to working together, however, they were deemed the most “ready to go” and agreed to conduct the debriefing sessions for school staff the day after the shooting (Thursday). On Friday, the AMR team did not directly counsel students. They were instrumental, however, in monitoring the appropriateness of the interventions being conducted by others, and detecting and assisting groups that would have otherwise been overlooked (e.g., school bus drivers).

Mississippi Department of Education

- Pearl Homeroom Teachers: After participating in a debriefing session and revisiting the scene of the shooting on

Thursday, Pearl High School teachers returned to their classrooms on Friday to help counsel the students assigned to their homeroom.

- Guidance Counselors: Counselors from the surrounding area were among the staff assigned to each homeroom for counseling sessions with students. They also returned the following Monday morning to monitor student functioning when regular classes resumed.
- School Nurses: A school nurse was assigned to each hallway to attend to any students who were in acute distress. No students manifested medical needs, but the nurses assisted by escorting a few students who needed individual care.

Local Mental Health Professionals

Because there was no time or manpower to check individual credentials and insurance coverage, only clinicians affiliated with the ARC or working under the auspices of the Mississippi Department of Mental Health were allowed to participate in the interventions based at the high school.

- Local ARC-Certified Disaster Mental Health Volunteers: By virtue of ARC certification, such individuals were known to be licensed mental health professionals with specialized training in disaster response. Furthermore, in their role as ARC volunteers, all were covered by ARC's insurance. These individuals assisted in coordination and planning, and in direct service to students.
- Clinicians Employed by the State Department of Mental Health: Several state-employed clinicians were detailed from

their positions at nearby facilities as part of their official government duties. Each was assigned to assist in one of the home rooms.

- Clinicians from Region 8 Mental Health Center: A regional mental health center is located very near the school, and operates under the umbrella of the Mississippi Department of Mental Health. Two representatives from the center were posted in the school library on Friday to do individualized screenings with any students who appeared to be in acute distress during the classroom counseling sessions. The homeroom teacher merely needed to signal the nurse in the hallway to escort the student to the library. There were only a few such referrals. It was anticipated that some students might simply prefer individual counseling rather than talking in the classroom setting, but no students expressed this preference.

Local Clergy

Clergy were not in the mandatory staff debriefing sessions on Thursday. However, they were readily available in the building to talk with any school employees who chose to meet with them.

As previously noted, clergy participated in each of the homeroom discussion sessions on Friday. The sessions for students were voluntary and it was not considered an official school day. Clergy were also invited to be on school grounds the following Monday when regular classes resumed, and to talk with any students who sought their input.

From the perspective of Pearl school administrators and school legal counsel, the decision to include local pastors and youth ministers in the interventions offered on

school property was not controversial. As a federal employee organizing the interventions and not being native to the Bible Belt, the author was somewhat more hesitant at first. However, through observation of the local faith community in action, she quickly became convinced that clergy brought a distinct value-added component to the recovery process. Audiences with whom this decision has subsequently been discussed have expressed very divergent views. Given the complexity of this particular issue, discussion of this aspect of planning will be presented in detail in a separate article to be published in the next issue of the *Texas Journal of Rural Health*.

DISCUSSION

Throughout the days following the shooting, the author worked closely with local and national media to ensure that helpful (rather than inaccurately alarming) information was provided to the public. The media were extremely helpful in circulating suggestions for coping and educating the public about the normal course of recovery following such a tragedy. The local newspaper provided the opportunity to submit a guest editorial thanking volunteers and encouraging others to seek certification through agencies such as the Red Cross in preparation for future community needs (Lyons, 1997).

Generally, mental health professionals who offered their services were very accepting of our decision to limit involvement to members of the groups listed above. They particularly understood that there were insufficient administrative resources to begin verifying licensure, liability coverage, and specialized disaster mental health training on an individual basis. All were encouraged to also contact the local mental health center for

possible inclusion in subsequent interventions. One volunteer persisted, to the extreme of gaining access through another door after having been turned away. This person was given tasks such as making sure each room had an adequate supply of tissues; this effectively satisfied her need to be involved.

The Department of Veterans Affairs model for disaster intervention (Young, Ford, Ruzek, Friedman, & Gusman, 1998) includes the following stages: Protect (get people away from danger and gore), Direct (e.g., steer away from overstimulation, advise regarding coping), and Connect (unite families, connect with indigenous resources). Based on our experiences in Pearl, the author suggests a fourth step in the rhyming sequence: Eject. Turning everything back over to school personnel and community groups, and extricating the “outsiders” as soon as possible is crucial to facilitating wellness and recovery. Some volunteers were so energized by their involvement in helping that it took fairly firm (but appreciative) directives to stop them from dropping by the school the week after the shooting.

Feedback received regarding the mental health interventions has been very positive. An extra grant-funded counselor was posted at the school for the remainder of the year, but reported few consultations specific to the shooting incident. A few individuals are known to have independently sought subsequent mental health services, but we have not received any reports of serious psychological impairment related to the shootings. When the school band was selected to march in the 1999 Macy’s Thanksgiving parade and perform on the *Today Show*, their musical selection included the song “Celebrate,” their focus was on good times, and they respectfully asked to be recognized for their accomplishment rather

than the tragedy of October 1, 1997. Interviewed about her trip, the drum major reported “I said that our school had been through dark days, when a person came into our school shooting....But I said that the Macy’s parade and the *Today Show* are a way we can show everyone we can recover and keep going” (Harden, 1999).

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CONVERSION TO A CRITICAL ACCESS HOSPITAL (CAH)

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ABSTRACT

Should you take a chance on a roll of the dice? This “roll of the dice” is deciding whether or not to become a Critical Access Hospital (CAH). There is a lot at stake in this issue, the chief matter being reimbursement. The issues that may help or hurt your facility as you consider the overall impact on reimbursement to your hospital will be discussed in this article. A hospital can, in fact, survive and thrive under cost-based reimbursement. The description of a typical CAH will be discussed as well as how and why cost-based reimbursement works, the characteristics of reimbursement, and an explanation of what the Balanced Budget Refinement Act (BBRA) has done for CAHs.

Key words: BBA, BBRA, Critical Access Hospitals, health care costs, rural hospitals.
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INTRODUCTION

First, let's talk about rural access. In Texas, we now have 66 counties without a hospital, whereas in 1985 there were only 37 counties without a hospital (TORCH, 1999). This means that we've had many more closures since 1985. Each health care dollar circulates a minimum of 1½ times in a rural community,

which means for every five jobs in health care, there are four additional jobs in the local community. In general, rural health care is provided at a much lower cost (26% lower in Texas) than in urban counterparts. Hospital closure is almost always traumatic in the rural setting. Area citizens become distraught, clamoring for the hospital to be re-opened; and understandably so – they want their loved ones to have access to health care within their own community.

Four Texas CPA firms conducted a study of rural community hospitals prior to the passage of the Balanced Budget Act (TORCH, 1999). They found that the average rural hospital in their study had an overall loss of about 9%. With the passage of the Balanced Budget Act, their annual losses increased to 14%. This is a critical loss for rural hospitals. The Balanced Budget Act has brought about a new program called the Critical Access Hospital Program — a program that may prove to be the savior of many small hospitals.

CRITICAL ACCESS HOSPITAL PROGRAM

Is this program advantageous for your hospital? In determining whether your hospital might be a candidate for this program, the following financial feasibility points should be considered:

1. Costs in excess of DRG.
2. Outpatient lab costs in excess of the fee schedule.
3. Outpatient x-ray, ASC, and other diagnostic services with a blend that limits cost.
4. Departments that have a cost-to-charge ratio greater than one.
5. Sole community hospital without cost reductions on the cost report.
6. High Medicare inpatient utilization.

Your hospital might be adversely affected if you convert to a Critical Access Hospital (CAH) if:

- You have a DRG profit.
- You are a sole community hospital or a Medicare dependent hospital with a higher DRG rate.
- You provide care that can be given in higher intensity acute care hospitals.
- Your length of stay is in excess of 96 hours.
- You have low Medicare utilization.
- You have profitable outpatient departments.

To make a quick assessment of your hospital, a review of the prior year cost report and 96-hour criteria become a good starting point. Appropriate adjustments for utilization in cost savings and adjustments for lab and fee schedule items should be made. These items give you an “at a glance” overview of the reimbursement impact under the Critical Access Hospital Program. If after this “mini-assessment,” it appears that the program would be beneficial to your hospital, the next step would be to conduct a complete financial feasibility study. Bear in mind that if you do qualify as a CAH, and if the program is beneficial to your facility, it is very important to set up your chargemaster appropriately. The reason for this is because costs are allocated in your ancillary departments based upon charges.

In the routine area, costs are allocated based on days. An analysis has been done including 16 different hospitals by our firm, Parrish, Moody & Fikes, p.c. (2000), to determine their impact from potentially increased reimbursement as a CAH. Nine of the hospitals in the analysis have shown the potential for gain, and seven have shown losses. The largest gain is \$469,000, and the

average gain has been about \$254,000. The average loss of \$350,000 highlights the need to proceed with caution.

What about the issue of “lower of cost or charge” and allowability of bad debts in CAHs? The “lower of cost or charge” does not apply, and bad debts will be reimbursed 100%, whereas in an acute care hospital, reductions in bad debts of 45% is typical. This is a very positive aspect of the Critical Access Hospital Program.

But, can a hospital make it with increased reimbursement? A community hospital generally has both bad debt and charity. There will also be, in most hospitals, some disallowed Medicare charges. Where does

the additional money come from in this case? An example is shown in Figure 1. In this example, there is an overall loss of \$750,000. The question is, who will make up that overall loss? Some of the possible sources could include taxes, sales taxes, real estate taxes, gifts and grants, or disproportionate share funds, to name a few. Another possibility is shown in Figure 2. Can you survive by attempting to profit from private pay and controlling your expenses? Surviving this way has become increasingly difficult, but in this exhibit there is \$240,000 being derived from the private insurance patient, and \$120,000 is lost to bad debt and charity.

Figure 1. Who Will Make Up \$750, 000

	<u>Medicare Medicaid</u>	<u>Private Insurance</u>	<u>Bad Debt Charity</u>	<u>Total</u>
Revenue	3,500,000	1,050,000	450,000	5,000,000
Contractuals	(700,000)		450,000	(250,000)
Expenses	4,200,000	1,260,000	540,000	6,000,000
Net	-	(210,000)	(540,000)	(750,000)

Figure 2. Or We Can Make It Back Controlling Expenses and Profiting From Private Pay

	<u>Medicare Medicaid</u>	<u>Private Insurance</u>	<u>Bad Debt Charity</u>	<u>Total</u>
Revenue	2,100,000	720,000	180,000	3,000,000
Contractuals	700,000		180,000	880,000
Expenses	1,400,000	480,000	120,000	2,000,000
Net	-	240,000	(120,000)	120,000

Figure 3. Why Does Cost Reimbursement Work?

General Service	\$2,000,000	-\$2,000,000
Revenue 1	\$1,000,000	\$571,428
Revenue 2	\$500,000	\$285,714
Revenue 3	\$2,000,000	\$1,142,857

Overall, it still nets out to a profitable situation.

Next question: Why does cost reimbursement work? To illustrate, there are general service costs in any hospital, of which those general service costs have to be spread to the revenue producing departments of that hospital. If a revenue-producing department happens to have a high Medicare utilization rate, those general service costs become cost reimbursed. Please refer to Figure 3 and note that the revenue-producing department of Revenue 3 is picking up over a million dollars of general service costs. If Revenue 3 happened to be a high Medicare cost reimbursement department, that general service cost would become reimbursable by Medicare. With payment in place for outpatient services and home health care, and all the various fee schedules, cost reimbursement is not nearly as critical except for hospitals like CAHs.

A typical hospital that could do well as a CAH has an average daily census on an inpatient basis of 2 to 3, losses in lab, high fixed costs, and is limited by the fee schedule for radiology and other diagnostic services. Per an analysis done by our firm, a typical hospital that should not consider becoming a CAH might have an average daily census of over 12 and have made a profit from their Medicare inpatients (Parrish, Moody, & Fikes,

1999). In this situation, typically the Medicare outpatient revenue benefit is not enough to offset the inpatient profit.

In view of the fact that Section 403 of the Balanced Budget Refinement Act of 1999 (BBRA) improved the Critical Access Hospital Program, the 96-hour length of stay limitation was changed to state an average annual basis rather than a per-case basis. This change was a boon for CAHs. In addition, the improved program permitted for-profit hospitals to participate, specified the payment method for outpatient services as being cost based, and clarified that CAHs could participate in the swing bed program. In addition, CAHs would be exempt from outpatient prospective payment.

Furthermore, laboratory reimbursement is also in question. One of the first CAHs in the country was in Atoka, Oklahoma. They had a community perception problem when the beneficiary started having to pay co-insurance on laboratory services. The BBRA was supposed to eliminate that, but in drafting the legislation, labs were put in the same paragraph as being fee scheduled. This has taken away approximately 20% of the benefit from CAH reimbursement. This was an unexpected result of a legislation intended to solve a problem rather than create one. Correspondence has been made with the Health Care Financing Administration (HCFA) on the matter, and HCFA has indicated the only way to correct the problem will be through a second refinement act to clarify the issue.

What do others think about CAHs? One group in Mississippi has come up with a new hospital concept, which is called the Essential Access Hospital. This group would have, among other things, a disproportionate share adjustment for those hospitals that qualified as an Essential Access Hospital. The proposed adjustment factor is a 20% benefit

applied to inpatient DRG payments.

If you're considering becoming a CAH, be sure to do your homework regarding cost reimbursement and the reimbursement advantages for CAHs. Also, be certain to examine other potential revenue sources to make up for charity, bad debt, and lost charges that you will probably experience.

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THE SECOND ANNUAL RURAL HEALTH SUMMIT: SETTING A RURAL HEALTH AGENDA FOR TEXAS

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ABSTRACT

The Second Annual Texas Rural Health Summit, sponsored by the Center for Rural Health Initiatives, provided a forum for stakeholders to discuss rural Texas health care. The forum brought together over 150 key state leaders, state health regulators, policy experts, and rural health professionals to collaboratively identify rural Texas' top health care issues, barriers to addressing those issues, and possible solutions. The results outline a program for action in the further development of Texas' rural health agenda.

Key words: Center for Rural Health Initiatives, rural caucus, rural health summit, Texas, TORCH, TRHA. (Texas Journal of Rural Health 2001; 19(1): 19-27)

INTRODUCTION

On March 2, 2000 over 150 representatives from health care associations, state agencies, community activists, providers, members of the academic communities, and legislators and staffers gathered at the Second Annual Rural Health Summit to discuss rural health in Texas. The day-long event, organized by the Center for Rural Health Initiatives, the Texas State Office of Rural Health, was co-sponsored by the Rural Caucus of the

Texas Legislature, and was further supported by the Texas Rural Health Association (TRHA) and the Texas Organization of Rural and Community Hospitals (TORCH).

The forum began with panel presentations from representatives of state government, community development, and health care interests who touched on different pieces of the rural health care puzzle, offering perspectives from their professional points of view.

Summit attendees worked through their lunch hour, listening to additional presentations. The Speaker of the House, James L. "Pete" Laney (Hale Center), and four key rural representatives explained their personal experiences and understandings of the status of health care in rural Texas, and offered critical perspectives of rural health care at the community and state levels.

Throughout the Summit, attendees participated in three different interactive work sessions, each having a distinct charge. The presentation and discussion processes resulted in the formulation of a comprehensive, proactive agenda for rural health in the state of Texas.

The Second Summit resulted in the defining of specific issues, barriers and solutions to providing health care to rural Texans. Actions taken by those who participated in the Summit, and those with whom they established viable collaborations, will further enhance the prognosis for the health of rural Texas.

PURPOSE OF THE SUMMIT

The Charge

The charge of the Second Annual Rural Health Summit was to establish an interactive forum for rural Texas health care stakeholders to continue the work of establishing a rural

health agenda for Texas, which began at the Inaugural Summit held in 1999. The Second Summit was to provide a unique setting for the discussion and development of innovative solutions to the ongoing deterioration of the rural health care delivery systems in Texas. Four goals were set to insure that the Second Summit remained on target to fulfill its mission.

The first goal was to provide an opportunity for legislators and representatives from rural Texas communities, relative state agencies, and health care professional associations and organizations to discuss each others' perspectives and learn which pieces of the rural puzzle each member holds.

The next goal was to purposefully instigate open dialogs through which Summit participants would identify specific rural health issues, determine the barriers to those issues, and propose possible solutions to the barriers discussed.

Fulfilling the first two goals, each participant would recognize their particular role in identifying and implementing the tasks required to meet the goals of the rural health agenda. Attendees would then energize and motivate individuals to accept his/her responsibility in the solution process, and encourage participants to form alliances to work toward achieving that goal.

Finally, having inspired attendees to recognize and use their ability, dedication, and commitment to impact the state of health care in their arena, participants left the Summit having gained new knowledge, awareness and clarity of the actions needed to address particular issues.

DISCUSSIONS ON THE STATUS OF
HEALTH CARE IN RURAL TEXAS:
HEALTH CARE IS LOCAL

Participants attending the Summit represented a broad range of interests, including members of the Texas legislature, state agency representatives, public health officials, rural health care providers, and consumer advocates.

Sharing perspectives, insights, and experiences in open dialogs, participants took advantage of the Summit as an opportunity to work together to collaboratively build partnerships that could increase the possibility of success in actions taken to address the issues raised and actions identified at the event. "No one entity can tackle the concerns of rural Texas alone," Robt. J. "Sam" Tessen, the previous Executive Director of the Center for Rural Health Initiatives said in his opening statement.

Representative Judy Hawley, (D-Portland), Chair of the Rural Caucus of the Texas State Legislature, co-sponsor of the Summit, set the stage for the event, noting the importance of addressing the health care issues facing rural Texas in her opening statements. "Even though our nation has the best health care system in the world, access to that care is eroding. Not only does that effect health care delivery, but the general economic well being of rural communities as well," she said. "If we are to continue to provide the standard of care our families deserve, we must quickly take steps to address these issues and ensure access to quality, affordable health care, whether we live in Houston or Mathis."

Guest speakers also included Don Gilbert, Commissioner of the Texas Health and Human Services Commission; Robert Wood, Deputy Assistant Commission for AgriBusiness Development at the Texas Department of

Agriculture; and Dr. Joyce Roberts, a family physician from Mount Vernon, Texas. Representative Robert L. "Robby" Cook (Eagle Lake), Rep. Rick Hardcastle (Vernon), and Rep. Robert R. "Bob" Turner (Coleman) provided further legislative commentary.

The 150 Summit attendees participated in interactive forums throughout the day, leading to a greater understanding of the many facets of community life that health care touches. The day-long event was divided into two sets of presentations, and intervened for three work sessions to facilitate discussions to collaboratively address the topics at hand.

IDENTIFICATION OF ISSUES,
BARRIERS, AND SOLUTIONS

Throughout the day, Summit attendees participated in open dialogs within small groups, discussing and identifying specific concerns pertaining to rural health care.

Group Work Sessions

In order to meet the goals of the Second Annual Rural Health Summit, all of the attendees were encouraged to participate in the open forums established through the formation of small work groups. Assigned seating arrangements were predetermined to provide each attendee the best opportunity to interact with other participants whom they might otherwise not have an occasion to meet. Groups ranged in size from eight to ten people, which provided a workable forum for the discussions that transpired throughout the Summit.

Purpose

The purpose of the small groups was to enable discussions among members. With each group being comprised of representatives from the various health care interests, such as policy and decision-makers, providers, citizens, academia, etc., groups were able to exchange views, define perspectives, and achieve the charge for each session.

Methodology

The Summit's agenda allowed for small group work sessions throughout the day. Following each set of presentations, the groups were asked to address the charge specific to the session:

Small Group Work: Session 1

What are the key issues facing rural health?

The morning panel presentations were followed by small group discussions where Summit participants identified key rural health issues.

Small Group Work: Session 2

What are the barriers to resolving the issues identified in Session 1?

Following the lunch presentations, Summit participants broke into small groups to further discuss the issues identified in Session 1; this time the barriers to addressing the issues were noted.

Small Group Work: Session 3

What are the actions needed to address the barriers discussed in Session 2?

After a short afternoon break, attendees broke into small groups for the final discussions of the day. At this point, Summit attendees had:

- Heard the concerns and advice of the policy makers;
- Identified important issues; and
- Discussed some of the barriers to resolving those issues.

Participants identified the actions needing to be taken as solutions to the barriers previously identified in Session 2.

To achieve these goals, groups were asked to openly communicate with each other and make one list of their specific ideas relevant to the particular work session. After a designated period of time for discussion ended, each group member voted on their top three items on the single list generated by the group. The items on the list were then ranked in descending order according to the number of votes received; the first item on the list being the item having the most votes. A group appointed spokesperson then reported the items, in the order of their ranking on the group's list, to the other groups of Summit participants.

RESULTS

The small groups allowed for dynamic interaction between individuals representing different fields of interest, all of whom play critical roles in the health care arena. The diversity of members among each group proved valuable to meeting the goals of each work session. The broad spectrum of interest representation opened doors to greater understanding of various perspectives, providing global applications to the group discussions. Expressing their individual perspectives through the work group process, the participants identified the key issues facing rural health care in Texas, the barriers to those issues, and possible solutions to

address the barriers identified. The list of solutions is admittedly not all-inclusive, but given the time constraints of the one-day Summit, the list reveals the expansive range of creative, possible solutions to the rural health care puzzle.

The following (see Table 1) is a sampling of the issues, barriers, and potential solutions

identified by participants at the Summit. It should be noted that the barriers and solutions presented here address the general issue, and are not specific to each other. For example, in the samples below, the barriers identified pertain specifically to the issue being addressed, as do each of the potential solutions; the barriers and solutions speak

Table 1a. Sample of Identified Issues, Barriers, and Potential Solutions

<u>Issues</u>	<u>Barriers</u>	<u>Solutions</u>
<i>Recruitment and retention of health care professionals</i>	Lack of community education on recruitment importance.	Identify key community members to be involved and participate in the recruitment process.
<i>Reimbursement</i>	Rural/urban disproportionate reimbursement rates. Heavy regulatory / administrative burdens.	Reimburse fairly based on total dollars and volume; don't discount reimbursement to rural providers. Mandate the use of universal billing forms and systems.
<i>Access to health education</i>	Need more of a career track plan for high school students to prepare them for college.	Create educational opportunities at the local level. Expand Area Health Education Center coverage statewide.
<i>Uncompensated care / Uninsured patients</i>	Access to care is available; access to funds is cumbersome.	Establish a lay health workers program for outreach and understanding of the services that are available; something modeled like the Promotoras Program.

*The sample barriers and solutions presented here suggest possible resolutions to the issue noted; the resolutions speak directly to the issue.

Table 1b. Sample of Identified Issues, Barriers, and Potential Solutions

<u>Issues</u>	<u>Barriers</u>	<u>Solutions</u>
<i>Emergency Services</i>	50% of rural EMS are volunteers. 911 issues, i.e., lack of infrastructure.	Support training at the local level for both the volunteer and full-time EMS workers. Strengthen the standards for dispatch and include the areas of dispatch proficiency, and use of technology.
<i>Transportation</i>	Lack of providers.	Identify current transportation resources, i.e., agencies, churches, public, private, and others.
<i>Public health information and infrastructure</i>	Privatization of public health resources not successful.	Increase community collaboration between primary and public health providers.
<i>Minority health disparities</i>	Language and cultural barriers.	Encourage area schools, churches, and community organizations to address local minority health disparities.
<i>Access to mental health care</i>	Lack of provider infrastructure.	Provide more mental health education for local providers, especially family and general providers.

*The sample barriers and solutions presented here suggest possible resolutions to the issue noted; the resolutions speak directly to the issue.

Table 1c. Sample of Identified Issues, Barriers, and Potential Solutions

<u>Issues</u>	<u>Barriers</u>	<u>Solutions</u>
<i>Regulatory burdens and paperwork requirements</i>	Lack of (paperwork) standardization.	Minimize paperwork requirements. Advocate for a clean claims process; work to establish one code or some other kind of streamlining.
<i>Telemedicine acceptance and reimbursement</i>	High cost of infrastructure.	Develop source(s) of objective, reliable information on hardware, software, and lines needed / available for rural telemedicine. Advocate for ease of billing for telemedicine services.
<i>Communication of rural health issues</i>	Lack of understanding of the issues facing local health care infrastructure. Lack of awareness of employers regarding insurance plans, i.e., whether or not plans include local providers.	Build linkages among organizations and groups in the community.

*The sample barriers and solutions presented here suggest possible resolutions to the issue noted; the resolutions speak directly to the issue.

directly to the issue as opposed to each other.

The result is a comprehensive, practical agenda for action by state leaders, health providers, advocates, academia, rural communities, and citizens.

CONCLUSION

It is very clear that the Second Annual Rural Health Summit, the second step in establishing a rural health agenda for Texas, was successful in meeting its goals. The event's unique interactive format provided opportunities for all key players to participate

Table 1d. Sample of Identified Issues, Barriers, and Potential Solutions

<u>Issues</u>	<u>Barriers</u>	<u>Solutions</u>
<i>Understanding “rurality”</i>	Costs that are accrued in rural areas that are not covered or considered.	Set up an interagency task force created to work with the Center for Rural Initiatives to address standardization issues in rural special needs. This task force would report to the legislature, utilizing the Rural Caucus, to assist in the awareness and promotion of rural health care issues. The task force would be under the direction of the Center for Rural Health Initiatives in cooperation with the Texas Agriculture Extension Service and other state agencies, provider groups, and consumer groups to develop a community health program.

*The sample barriers and solutions presented here suggest possible resolutions to the issue noted; the resolutions speak directly to the issue.

in the development of the rural health agenda. The discussions that took place within the forum were essential to the broad assessment of topics. Without the discussions among group members, the diversity of possibilities may not have evolved into the expanded lists of opportunities developed at the event.

As a result of the open conversations, key health care issues in rural Texas were deter-

mined, barriers to addressing those issues discussed, and potential solutions identified. The possibilities for resolutions are endless; the interaction of the participants, their comments and suggestions, have been presented as starting points to encourage further collaboration and action.

The charge now is for all health care providers, stakeholders, policymakers, and

citizens to review the critical points made at the Second Summit and use the discussions presented at the forum to:

- Plan for the future of rural health care;
- Build additional innovative approaches to addressing rural health care in Texas;
- Create collaborative partnerships with fellow citizens, associations and organizations on local, regional, and state levels;
- Reach out, network, and nurture relationships with others; share ideas and learn from each other;
- Become active in defining goals and developing strategies to meet those goals; and
- Communicate ideas to appropriate legislators.

The official report on the Second Annual Rural Health Summit has been distributed to all those who attended the event and is available upon request from the Center. The implementation of the solutions suggested at the event, and those yet to be identified, are up to the individuals, groups, and communities who choose to move forward in working to address their specific issues. Each and every action can lead to results. The challenge is for all of us to take the actions necessary to meet the needs of the rural Texans we all serve.

The next step in furthering the development and implementation of an agenda for rural health in Texas will come in early 2001. The Third Annual Rural Health Summit will bring rural health into sharper focus as the formulation of the rural health agenda becomes increasingly defined.

MOBILIZING PRIVATE CAPITAL FOR SOUTH AFRICA'S HEALTH SECTOR

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■■■■■ POLICY AND LAW

ABSTRACT

South Africa has a relatively large private health sector that is expected to grow to meet the needs of the more affluent. It is possible to use private funds to improve health services in rural areas. Low premium products being developed by Health Maintenance Organizations (HMOs) and other forms of managed care can help meet the health needs of those of more modest means in both rural and urban environments. Capital formation can be facilitated with the introduction of a health mutual fund.

Key words: dual economy, economics, health care investment, HMOs, mutual fund, rural, stock exchange. (Texas Journal of Rural Health 2001; 19(1): 28-39)

INTRODUCTION

South Africa is a country marked by a dual economy. There is both a large developed sector of the economy, and in terms of population, a larger impoverished segment. Similar dual economies are found in Latin America and parts of Asia. Dual economies are characterized by very skewed income distributions and South Africa is no exception. As in many dual economies, rural South

Africa tends to be less developed. The presence of a dual economy has important implications for health services. A well-to-do and powerful class accustomed to private health services with access to the latest technologies may be opposed to a more equitable and effective national health service. The wealthy fear that the services to which they are accustomed would deteriorate in a more equitable system. Efforts to nationalize health care in South Africa have failed. It is estimated that currently 60% to 70% of health spending is allocated to approximately 20% of the population with private insurance. The remaining approximately 80% of the population must get by on the 30% to 40% of health resources that are provided by the public sector. But public services are limited by fiscal constraints and poor implementation of services at the provincial level. Relative to the apartheid era, rural South Africans, especially non-Whites, do have increased access to public health services, but the services appear to be inadequate and increasingly, the private sector is expected to meet rural needs. This article explores the potential for generating private capital through a health sector mutual fund and discusses some of the implications for rural health.

HEALTH SPENDING IN SOUTH AFRICA

South Africa has a well-developed private health sector that has traditionally served the more affluent. The private sector has tended to stay abreast of changes occurring in developed economies and has integrated much of the latest technology into the fabric of medical care. It has pioneered new technologies, and in the 1960s was the first to perform a heart transplant.

Much of this pioneering work occurred at publicly supported tertiary academic medical centers. In the post-apartheid era, public sector resources have been shifted away from academic medical centers towards primary care. This is part of an effort to redistribute resources to the under-served. However, public sector resources for preventing and treatment of AIDS as well as other illness are severely constrained by South Africa's relatively low level of development, disappointing rates of economic growth, debt, and a lack of sound management practices, especially at the provincial level where most health services are provided. Substantial reliance on the private sector is expected to persist. Multilateral organizations such as the World Bank are calling for expanded opportunities for private sector activity in health.

The most recent available estimate for South Africa in 1992-93 puts the share of the Gross Domestic Product (GDP) allocated to health at 8.5% (McIntyre et al., 1995). This is a greater share of the GDP than is typical of developing countries. Mexico and Turkey, for example, allocated 4.9% and 3.3% respectively to health in 1995. Figure 1 shows a trendline for the Organization of Economic Cooperation and Development members. It maps the relationship between rising per capita income (measured in United States dollars in terms of purchasing power parity) and the share of GDP allocated to health. The high proportion of relatively unconstrained private sector spending, 58.0% in 1992/93 (the last official estimate), may be part of the reason for South Africa's outlier status in Figure 1. Private sector health spending, serving only about 20% of the population, largely drives South Africa's relatively high allocation to health.

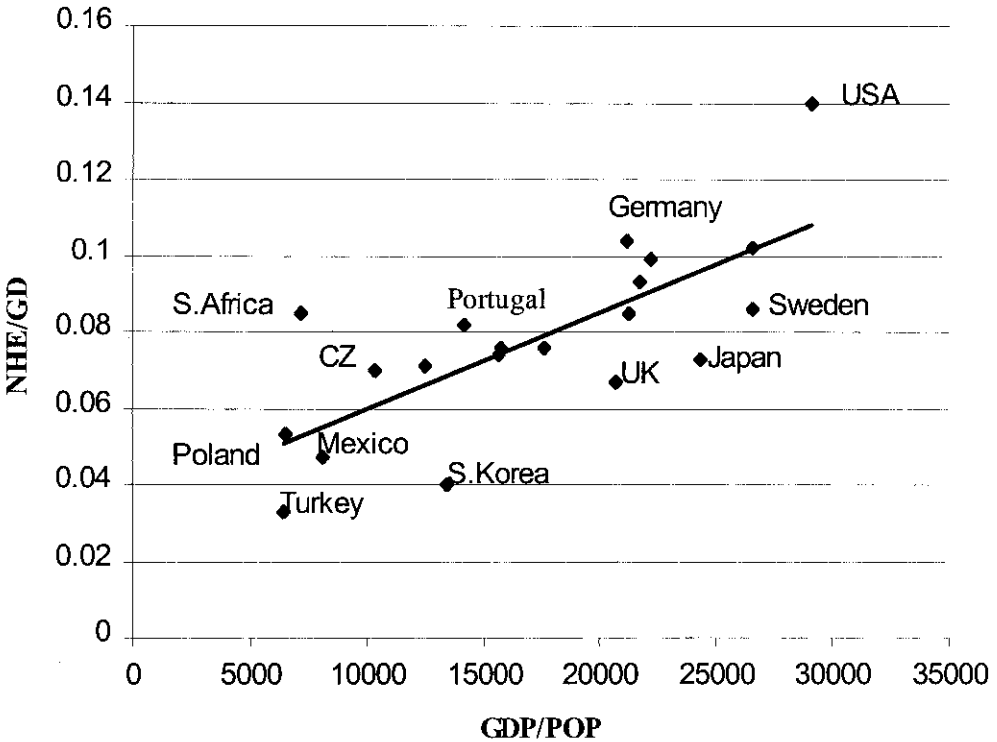
The public sector is more constrained. Under leadership of the African National Congress (ANC) the South African government has accorded health a priority in its

budget and health has moved up as a share of government spending since 1994 (Hilsenrath, 1999). However, an even greater priority for the new government has been fiscal discipline. Sustainable budget deficits are sought and this is associated with maintaining a ratio of the budget deficit to the GDP that is no greater than the growth of the GDP. With growth averaging only 2% to 3% from 1994 to 1999 and a higher deficit to the GDP ratio, South Africa has constrained public sector spending. This has been a big disappointment to those looking for a “new deal” spending program to put people to work and uplift the country. It has also curbed growth of health spending for the public sector in

spite of pressing needs. Growth of health spending in the public sector will be held hostage to growth of the GDP unless there are substantial gains in reigning in public spending elsewhere, or unless a more Keynesian approach to fiscal policy is adopted.

South Africa has a substantial backlog of health care needs resulting from inequities of the apartheid era, the HIV/AIDS crisis, and other factors. HIV infections have become very widespread in South Africa. The United Nations reported that 19.9% of the adult population was infected at the end of 1999 and the incidence has been rising. Prevalence is highest in the northeastern region of the

Figure 1. Development and Health Spending: 1997



country where South Africa's HIV epidemic began (Health Systems Trust & Henry J. Kaiser Family Foundation, 1996). It has been reported that some antenatal clinics in KwaZulu-Natal have experienced HIV incidence rates as high as 40.0% to 45.0% in 1999.

Rapid increases in insurance premiums have led to the introduction of managed care in South Africa. Health insurance premium increases in 1999 varied from insurer to insurer, but average increases were reported to exceed 15%, which is well ahead of the Consumer Price Index (Bisseker, 1999). Managed care has met with mixed success in this part of the world in large part because of resistance from providers, the limited ability of insurers to help manage costs and outcomes, and consumer resistance to limitations imposed on choice. In addition, the Competition Board, the antitrust authority in South Africa, takes a dim view of closed panels. Nevertheless, some elements of managed care appear to be well established and the potential for growth of both private insurance and private care is widely recognized.

One of the problems facing the private sector in South Africa is the relatively undeveloped state of managed care. Many health insurers and Health Maintenance Organizations (HMOs) are small and under-capitalized. They cannot afford to purchase adequate information systems, which are necessary to build provider networks needed for successful competition. Size may also be important for reaching out to new markets, particularly among low-income populations. To build financial strength, many health service organizations have consolidated with other organizations. Another strategy is to list on the Johannesburg Stock Exchange to attract equity capital. Investors have been very cautious regarding health sector equities in South Africa. There is widespread recognition of the vulnerability of health sector

organizations to the vagaries of government policy and there have been mixed signals coming from Pretoria about the role of private capital in South Africa's health sector. However, the dust has settled following the assumption of power by the ANC in 1994, and it is becoming increasingly clear that a partnership between public and private sectors is the likely scenario for South Africa's health sector. Caution about investing in South Africa's health sector is also the result of weak performance in the United States' health care delivery sector, though United States health care delivery did reasonably well in the first half of 2000. It is also the result of a backlash against managed care and the perception of a loss of control over costs. Proposals for HMOs to reach out and provide basic health services to the less affluent in rural and urban environments have been advanced. Typically, these products are priced between 150 and 200 rands (7.36 South African rands per United States dollar as of October 10, 2000) per month, and offer primary care services along with limited hospital access. They commonly provide capitated payments to primary care groups who serve as the gatekeeper and dominant source of care, but there are questions about financial viability and many health insurers are reluctant to enter this market, especially with looming AIDS treatment costs.

RURAL HEALTH IN SOUTH AFRICA

Rural South Africa, especially the non-White rural areas, has long been under-served with a paucity of hospitals, physicians, and other providers. Substantial efforts have been made by the public sector in recent years to correct some of the imbalances that have prevailed. A construction program of rural clinics has been successfully imple-

mented and this has been partially financed by reduced commitments to tertiary care including academic medical centers. But overall funding constraints dictated by the Pretoria's commitment to fiscal discipline combined with weak management and poor delivery of health services have conspired to constrain access for much of South Africa's rural population.

However, the public sector is not the only option available. Some rural residents rely on the philanthropic health related activities of religious denominations, a significant and often under-reported form of care, at least in the academic literature. Other rural residents rely on traditional healers (witchdoctors) who have recently been courted by mainstream providers to integrate traditional practices with elements of "western" medicine.

A remaining option is the private sector. Private care requires resources that much of the rural population does not have. On the other hand, a significant portion of rural South Africa does have resources for at least minimal access to private services. A recent study found a surprisingly high use of rural health services in South Africa. The study was confined to the Eastern and Western Cape Provinces and found that 49% of rural residents who sought care used the private sector (Health Systems Trust, 1999). The reason for such high use, even among the lowest income quintile, appears to be dissatisfaction with the public sector. There are some who have private health insurance. Those with unionized jobs such as in mining are an example. Others rely on private clinics for episodic care and pay out of pocket.

What has not been developed and is regarded as the "emerging market in South African health care" is provision of the low premium policies mentioned earlier in this article. Ordinarily the success of HMOs in rural areas is constrained by population density and access to specialists, but when

benefits are limited to primary care, rural HMOs are substantially more viable. This is the case in South Africa and many insurers are considering this possibility. The rapid consolidation of the South Africa health insurance industry should facilitate development of rural HMOs as sheer size confers critical mass and other advantages in the marketplace. Greater access to private capital could also catalyze development of private rural health services in South Africa, especially if health care delivery organizations and/or insurers utilize such funds to develop infrastructure to exploit this emerging market.

In many respects the growth of the private sector to meet rural health needs is a sub optimal development. Well-run public health services can be much more cost-effective at improving health, as observed in nations like Cuba. But effective national health services require a national commitment to equity, something that is lacking in South Africa in spite of the demise of apartheid. If equity objectives were to be deemed important, there are measures that could be pursued. One option would be to provide vouchers for health insurance to the poorest elements of rural and urban South Africa. In many respects this proposal is not unlike proposed vouchers for education in the United States. Holders of the vouchers can opt for private or public providers. This competition would then, it is argued, improve the performance of all providers, but the private sector would have an advantage in that it could draw on portfolio capital for the development of the infrastructure. Another option would be a tax credit, or a "negative tax" for health insurance, which might be somewhat similar to the earned income credit in the United States.

The political realities being what they are, there is little chance that the large share of resources going to the private health sector will be reallocated to provincial health services. Nor is there much likelihood of

supply side subsidies to the rural poor increasing appreciably. Perhaps the best that can be realistically hoped for is some improvement in the efficiency of public health services with existing levels of funding as well as an increased contribution of low-cost private sector options that will at least help better meet some of rural South Africa's health needs. Establishment of a dedicated health mutual fund to draw portfolio capital from South Africa and abroad will help facilitate this latter objective.

ADVANTAGES AND DISADVANTAGES OF PORTFOLIO CAPITAL

One of the defining characteristics of capitalism is the generation of capital including in South Africa. Large and growing sums of capital are tied up in the world's equity markets. Companies listed on stock exchanges have access to capital through reserve accounts of portfolio investor funds. These funds can catalyze growth and development but only recently have they become important in the health sector.

There are special circumstances concerning investment in the health sector. A large proportion of the health sector is in unlisted or private services such as for physician services, dental care, or nursing homes. Additionally, investing is generally limited to larger firms often producing goods instead of providing services. And, the public sector plays a large, if not dominant role, in health care in all countries of the world. Some countries, such as the United Kingdom, rely heavily on the public sector to finance and deliver care. In other countries, such as Canada and much of Western Europe, government or quasi-public agencies pay for care, but generally do not provide it. In the United States and South Africa, the private

sector is important in both financing and providing health services, but governments remain pivotal in both of these countries because of large amounts of public spending as well as regulatory authority. This weighs on investors. Changes in government policies can have large effects on the performance of shares in the health sector.

HMOs in the United States have leveraged their positions using portfolio capital and now insure tens of millions of beneficiaries. HMOs in South Africa have sought similar strategies, but have thus far primarily focused on more affluent beneficiaries willing and able to afford policies comparable to those found in the United States. The potential exists to reach out to greater numbers of South Africans with low-cost health insurance products. A targeted health sector fund in South Africa would offer investors the first focused vehicle for investment of this nature.

Reliance of private capital markets and private delivery of health services is not a panacea for hard-pressed developing nations such as South Africa. Private capital markets can raise capital where public resources are constrained. And they can quickly respond to demand by mobilizing capital for important needs. But demand, defined as willingness and ability to pay, must be present. For many South Africans, a low-priced primary care benefits package would be affordable and attractive. For many others, private health insurance is out of reach. Reliance on health specific mutual funds to mobilize capital can serve the purpose of greater efficiency in health services so that those with resources will be better able to obtain the care they want. It will not serve social equity objectives and may even undermine them. Private markets will not respond to unprofitable opportunities and there are clearly large numbers of South Africans, especially in rural areas, for whom this would be the case.

Moreover, increased reliance on private services will tend to draw away support for public health spending by those with the most to contribute to it. Also, the success of such endeavors is by no means assured and is fraught with a myriad of difficulties including managing costs and complying with public mandates.

WHY INVEST IN SOUTH AFRICA'S HEALTH SECTOR?

To be feasible, a health care mutual fund must attract investors. Investor's will focus on several factors when they consider investing in any investment. In this particular case, they will be concerned with the potential for growth in South Africa, and its health sector. Investors will also be concerned with the degree to which an investment in South Africa's health sector diversifies their portfolio of investments. The following section of this article discusses these issues.

Growth of the South African Economy and Its Health Sector

In the long run financial returns are closely correlated with growth. Countries with high rates of economic growth tend to be more rewarding places for investment than countries with slow rates of growth. Similarly, sectors with high rates of growth tend to command high price earning multiples in anticipation of the rapid growth of revenue and profit.

South Africa has a long history of economic growth. Economic development in both British- and Afrikaans-controlled South Africa was relatively modest until the discovery of diamonds and gold in the latter part of the 19th century. Mining, agriculture, and processing of primary products fueled

South Africa's growth in the 20th century. Real economic growth from the 1920s through the 1940s averaged approximately 5% annually with gains in real per capita income of 2% to 3%. The formalization of racial segregation with apartheid led to increasing international isolation and periodic internal unrest, especially as urbanization accelerated. Nevertheless, economic growth remained solid into the early 1980s. Real per capita income peaked in 1981 at 16,347 rands in 1995 rands (South African Reserve Bank, 2000). Since that time, as a result of political instability, weakening gold prices, and other factors, real per capita income declined by 14% by 1998. On a purchasing power parity basis per capita income in 1997 was 7,190 in United States dollars (United States Census Bureau, 1999). This is a little lower than Mexico, which stood at 8,110 in United States dollars in 1997. Despite difficulties, South Africa managed to establish an impressive infrastructure including communications, transportation, and financial institutions. Since the abolition of apartheid in the early 1990s, South Africa has been welcomed back into the international community.

The outlook for growth in South Africa is mixed. There is an ample pool of rural and urban unemployed labor, as well as a backlog of technologies that can be used to bolster productivity. Global trade is being encouraged and important infrastructural building blocks are in place. The ANC government has not introduced sweeping socialization measures and appears committed to a market economy. But the combined effects of low gold and other commodity prices, a brain drain, capital flight, overly cautious fiscal and monetary policies, crime, and a general lack of cooperation between White and Black communities has contributed to disappointing GDP growth and falling per capita incomes. It is not clear that any of this will change in the

near future, especially with a worsening AIDS epidemic.

Economists have addressed the issue of economic growth in Africa and remain perplexed about its rather poor performance during the 20th century (Collier & Gunning, 1999). A variety of reasons for lack of solid long run growth have been put forward (Sachs & Warner, 1997). They include poor government, often accountable only to the social elite, unsound macroeconomic policies, and structural problems at the microeconomic level. The 1990s brought change to some countries with more democracy and greater market liberalization. This has generated some optimism about Africa's long-term future. But ultimately, economic growth is driven by deployment of an educated workforce with the ability to integrate productivity enhancing technologies. South Africa's education sector is in disarray and the general skill level of human resources is not as competitive as in other developing regions of the world such as Asia and Latin America. A realization of the importance of education exists within the ANC leadership, but it remains to be seen if substantial

improvement will occur. South Africa's private sector spending on health is expected to grow as insurers offer new products and services. The public sector is also expected to step up allocations to health in response to the HIV/AIDS crisis and international pressure to focus government spending on health and education.

DIVERSIFICATION AND INVESTING IN THE SOUTH AFRICAN MARKET

Diversification is an important part of investment strategy and holding South African equities can be a significant part of diversification for the global investor. One criterion investors will consider is the degree to which the changes in the return on investments in South Africa are correlated with the changes in return on the investor's other assets. For example, if over time the returns on two investments always change by the same amount, then there would be no diversification from holding both investments, instead of holding either one. Over time, the Johannesburg Stock Exchange (JSE) has

Table 1. Comparison of Correlations and Volatility

	r^2	Beta
1975-1993		
JSE ALSI & S&P 500 1975-93	0.96	1.88
JSE ALSI & Emerging Asia* 1975-93	0.88	0.82
Emerging Asia & S&P 500 1975-93	0.84	2.17
1994-1999		
JSE ALSI & S&P 500 1994-99	0.29	1.05
JSE ALSI & Emerging Asia* 1994-99	0.57	0.63
Emerging Asia & S&P 500 1994-99	0.00	-0.09

* Includes South Africa

become much less correlated with Wall Street. Table 1 shows the coefficient of determination (r^2) for the Johannesburg All Share Index (ALSI), the Standard and Poors 500 (S&P 500), an index that includes 500 of the largest companies listed on the New York stock exchange, and the Emerging Asia Index (consisting of Hong Kong, India, Israel, Malaysia, Pakistan, Phillippines, Singapore, South Africa, South Korea, and Taiwan). The coefficient of determination indicates how much of the movement of one market is explained by the other. For example, in the pre-Mandela era movements of the S&P 500 explained 96% of the movements of the ALSI. Since 1994 when Nelson Mandela took office, the coefficient of determination with New York has fallen sharply to 29%. In the pre-Mandela era, South Africa was more correlated with New York than emerging Asia. The reverse is true since 1994. This is perhaps indicative of the political changes South Africa has undergone in its evolution from apartheid. South Africa is now seen as an emerging

market as opposed to an errant member of the developing world.

Investors will also be concerned about the relative volatility of an investment. When securities with highly volatile returns are added to a portfolio, it increases the risk associated with holding the portfolio. South Africa's equity markets are relatively less volatile than most emerging markets. For example, during the economic downturn experienced from December 31, 1997 to October 21, 1998, South Africa was down 21.5% in United States dollar terms. In comparison for this period, Russia was down 94.5%, Turkey 52.7%, and Mexico 40.8%. In the period from December 31, 1998 to January 19, 2000, a period of appreciation in emerging markets, South Africa gained 62.3% in United States dollar terms, whereas more volatile Russia gained 211.6%, Turkey 308.5%, and Mexico 97.8%.

Investors use beta (b) as a measure of volatility. Beta is a measure of the average change in returns on one investment, given

Table 2. South Africa Health Sector Listed with the Johannesburg Stock Exchange

Revenues in Million Rands (1999 Final Results)		
Network Health Care Holdings	2,566	Hospitals and Clinics
Clinic Holdings	2,533	Hospitals and Clinics
Medi-Clinic Corporation	1,539	Hospitals and Clinics
Afrox Health Care	1,237	Hospitals and Clinics
Macmed Health Care	673	Medical Equipment
Aspen Health Care Holdings	522	Pharmaceuticals and Personal Care
Beige Holdings	317	Pharmaceuticals and Personal Care
Alliance Pharmaceuticals	198	Cosmetics, Pharmaceuticals, Toiletries, and Disposables
General Optical Company	147	Eyecare Products
Carson Holdings	120*	Ethnic Health and Beauty Care
Natural Health Holdings	46	Nutritional and Health Care Products

* Interim results

the change in returns of another investment. A beta of 1 between Johannesburg and New York implies equal volatility. A beta of 1.88, as shown in Table 1, indicates that if the S&P 500 increases by 1%, then there will be a 1.88% increase in the Johannesburg index. The Johannesburg index would also be expected to decline by 1.88% for every 1% decrease in the S&P 500 index. The beta of Johannesburg relative to New York has dropped since 1994 due in part to a lower correlation between the two. Both before and after 1994, Johannesburg has been more volatile than New York and less volatile than emerging Asia (the inclusion of South Africa in the emerging Asia index distorts the correlation and beta between the two). Johannesburg's volatility compared to emerging Asia was lower in the more recent period than prior to 1994, but this is based on a limited sample of annual data for a period when Asia suffered a wrenching recession.

Investors are also concerned about the size of the equity market, because an active market is necessary to easily get a fair price when a fund buys and sells equities. South Africa has a relatively large amount of market capitalization. In 1998, South Africa's financial markets had 170 billion in United States dollars, a number larger than that for Brazil (161 billion in United States dollars) or South Korea (115 billion in United States dollars) (Global Financial Data, 2000). Many international fund managers seek to keep their country weightings within a fairly close range to the international indices, and South Africa features prominently in emerging market indices.

FUND STRUCTURE

In the United States, investors have generated a great deal of interest in health

sector mutual funds. The largest, Vanguard's Health Care Fund, has 14.3 billion in United States dollars in assets. Fidelity's Health Care Select manages 2.8 billion in United States dollars. For reasons noted in the previous section, there may be considerable interest for similar investment opportunities in South Africa. However, there are currently no South African health sector mutual funds, or unit trusts, as they are sometimes called.

Several factors influence the implementation of a health sector fund in South Africa. Because of the limited size of South Africa's health sector, specialized funds focusing on health would probably be diversified globally. For example, a fund may be 40% invested in domestic equities and 60% in international equities. Investments will generally be in stocks of companies positioned to benefit from growth of the health sector. This includes companies engaged in pharmaceuticals, biotechnology, medical equipment and supplies, and health care finance/delivery. There were only 11 health sector firms listed on the Johannesburg stock exchange in 1999. Table 2 shows firms listed in South Africa's health sector by descending revenues.

Some of the largest players in the health sector are no longer available as "pure health sector plays." For example, in 1999, South African Druggists was split into several pieces and divested. Tiger Oats acquired Adcock-Ingram, another large pharmaceutical firm. It is still possible to invest in these operations, but only along with the other non-health activities of acquiring firms. The largest listed companies on the JSE in health are in medical care delivery, and this sector remains plagued by negative sentiment although a few firms did well through mid-2000. Substantial exposure to a broad range of international health companies is considered essential to provide the adequate breadth and depth of a South Africa based health fund.

The limited number of health sector equities and constraints on the maximum allocation to any individual company within a South African mutual fund virtually necessitates international diversification. Such diversification should also help to reduce risk without adversely effecting performance. However, acquisition of international equities requires foreign exchange and this depends on South African Reserve Bank approval. Unfortunately, South Africa has severe foreign exchange constraints. Current reserves at approximately 6 billion in United States dollars are very meager by international standards. South Africa has the lowest level of foreign reserves in *The Economists'* list of emerging markets indicators for 25 countries (The Economist, 2000). Foreign reserves are only sufficient to cover two or three months worth of imports. The low level of reserves is in part a legacy of the sanctions era and partly the result of capital flight as many holders of wealth are moving funds abroad. Limited foreign reserves have been a principal reason for exchange controls in South Africa. The Reserve Bank rations foreign exchange for those purposes it deems most important. The use of foreign exchange to purchase international health equities is not considered of paramount importance and at this time, efforts to create a mutual fund in health will be constrained until foreign reserves become more available.

CONCLUSION

A focused fund with asset allocation directed toward health sector equities can help to mobilize capital for private health services that serve large numbers of South Africans above the subsistence level. It also has potential to reward investors if profitable health services can be offered. The health

sector is relatively non-cyclical and health shares become particularly attractive during economic downturns as investors seek safer havens. However, the health sector, especially delivery, has been out of favor for reasons having to do with both the fundamentals and sentiment. Profit margins have been under pressure and there has been concern about accounting "irregularities." Health sector equities in South Africa fared quite poorly in 1999 and most did poorly in the first half of 2000. In addition, the limited number of listed companies in South Africa and the requirement that funds be substantially diversified necessitates asset allocation into either non-health equities in South Africa or international health equities. This has inhibited establishment of a health specific fund and impacted capital formation for private managed health services in South Africa. This may have the unfortunate result of undermining development of low-cost private managed care products that would be attractive and affordable to a large segment of rural South Africa.

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PROFITABILITY OF RURAL HOSPITALS IN TEXAS: IMPLICATIONS FOR ACCESS TO CHARITY CARE

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RESEARCH

ABSTRACT

Despite the relief afforded to hospitals by the Balanced Budget Refinement Act of 1999 (BBRA), the Balanced Budget Act of 1997 (BBA) is expected to have a disproportionately negative impact on rural hospitals. Increased financial pressure on hospitals could lead to closures and effectively erode the health care safety net for the nearly 30% of rural Texans who are uninsured and rely on hospital charity care. This study analyzes the financial vulnerability of rural hospitals in Texas and attempts to measure the risk of losing charity care services if vulnerable hospitals were to close.

Key words: BBA, BBRA, charity care, non-profit, Medicare, rural, Texas hospitals. (Texas Journal of Rural Health 2001; 19(1): 40-48)

INTRODUCTION

The Balanced Budget Act of 1997 (BBA) is anticipated to have a disproportionately negative impact on rural hospitals—particularly small hospitals and those that are most dependent on Medicare revenue (Mueller & McBride, 1999). Despite the relief afforded

by the Balanced Budget Refinement Act of 1999 (BBRA), the cumulative effect of the BBA mandated modifications to inpatient, outpatient, and post-acute reimbursement that may threaten the viability of many rural hospitals, a large number of which operate on small or negative margins (Mueller, 2000; Mueller, 1999; Coburn et al., 1999).

Among insured rural residents in Texas, a state that led the nation in the number of hospital closures between 1987 and 1991 (Iglehart, 1993), additional closures raises concern as to the availability and accessibility of essential inpatient resources. However, for the nearly 30% of rural Texans who lack public or private health insurance coverage (Ormand, Wallin, & Goldenson, 2000), the closure of a local hospital could effectively erode the health care safety net.

As is true throughout the country, uninsured patients in Texas who are in need of medical care but fail to qualify for Medicaid or state indigent care programs must either pay out-of-pocket, rely on hospital charity care, or forego care altogether. The state of Texas promotes access to charity care through a state law that mandates that non-profit hospitals provide specified minimum levels of community benefits, including charity care (Vinson, 1997). While Texas' charity care law is designed to enhance health care access to many of the neediest residents of the state, the strength of this safety net is linked to the hospitals' financial health. If rural hospitals are forced to close, the charity care safety net disappears.

The purpose of this descriptive study is to examine the relationship between the financial viability of short-term rural hospitals in Texas and the provision of charity care services to determine how access to free-care services would be affected in rural communities if unprofitable hospitals were forced to close.

BACKGROUND ON TEXAS COMMUNITY BENEFITS AND CHARITY CARE LAW

The tax treatment of non-profit hospitals has long been a source of controversy as policy-makers have questioned whether or not the community benefits derived from these hospitals meet or exceed the financial benefits that hospitals derive from their tax exempt status (Claxton, Feder, Shactman, & Altman, 1997). Recognizing that many non-profit entities provided marginal amounts of charity care to the indigent population in the state, the state of Texas implemented legislation in 1993 (Texas Health and Safety Code, 1993) that required non-profit hospitals to contribute specified levels of charity care and "community benefits" (Vinson, 1997). (In addition to charity care, community benefits include the unreimbursed costs of providing health education, research, and government-sponsored indigent health care.)

The amount of charity care, government sponsored indigent care, or community benefits that non-profit hospitals are required to provide are specified by Texas statute. Specifically, hospitals must meet one of three standards that link charity care and community benefits to (1) a community needs assessment; (2) the hospital's tax-exempt benefit; and (3) hospitals' resources, such as net patient revenue. Non-profit hospitals that have been designated by the state Medicaid program as a disproportionate share hospital are deemed to be automatically in compliance with Texas' community benefits and charity care requirements.

METHODS

This descriptive study is designed to address the following questions:

1. To what extent are rural hospitals in the state of Texas financially vulnerable?
2. What are the characteristics of rural hospitals in Texas that are financially vulnerable?
3. How much charity care is provided by rural hospitals in Texas, and what are the characteristics of hospitals that provide charity care services?
4. What is the magnitude of charity care “at-risk” if financially vulnerable hospitals were forced to close?

Data Sources: The primary sources of data for this study are the 1996, 1997, and 1998 Annual Survey of Hospitals compiled by the Texas Department of Health. This hospital-level database contains information on revenue and expenses, including charity care expenditures, for all licensed short-term acute hospitals in the state.

Information on hospital characteristics, including size, ownership, teaching status, Medicare special payment designations (e.g., Sole Community Hospitals, Rural Referral Center, and Medicare-dependent hospital status) were extracted from the 1997 Health Care Financing Administration (HCFA) Provider of Service File (POS) and the 1997 HCFA Impact File. Data from the Texas Annual Hospital Surveys, the POS, and the Impact files were linked using hospital addresses and zip codes.

Analytical Approach: Hospital-level descriptive analyses were conducted to identify trends in hospital profitability and charity care provision for short-term rural hospitals in the state of Texas. Rural hospitals were identified as those that were located outside a metropolitan statistical area (MSA).

Rural hospitals’ “financial vulnerability” was measured using providers’ three-year

average (1996-1998) total margin. The total margin represents hospital profitability associated with all activities, including those that are not related to patient care. Hospitals with a negative total margin “are likely to be in financial distress and should be taking extraordinary means to increase revenues and reduce expenses” (Pennsylvania Health Care Cost Containment Council, 1997).

Total margin was calculated by dividing net income by total operating and non-operating revenues. Since the total margin may vary annually due to early retirement of plant and equipment, debt refinancing, restructuring of operations, and numerous other factors (Pennsylvania Health Care Cost Containment Council, 1997), the three-year average total margin is used to enhance the stability of this measure. Chi-square analyses were conducted to examine the hospital characteristics associated with having a negative three-year average total margin.

Charity care, or care given without expectation of payment, is generally reported by hospitals in terms of charges foregone. Therefore, the operating cost-to-charge ratio was applied to the charity care amount in order to deflate charity care expenditures to actual hospital costs. Charity care expenditures as a percentage of total operating expenses were computed to enable comparisons across hospitals. Hospitals’ three-year average charity care expenditures, as opposed to annual charity care expenditures, were used throughout these analyses, because they represent a more stable measure of the amount of “free-care” that hospitals contribute to their communities. Bivariate analyses were conducted to identify trends in the provision of charity care by selected hospital characteristics, including profitability. “At-risk” rural communities were identified as

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those counties in which all hospitals located in that county were found to have a negative three-year average total margin. Assuming that hospitals in these counties were forced to close, uninsured residents would lose access to all hospital-based free-care services.

The definition of "at-risk" communities used in this study is limited, in part, because free-care services that hospitals provide are not necessarily restricted to county residents. Particularly in rural counties in which no

hospitals are located, residents may seek free-care services from hospitals in neighboring rural or urban counties. Since patient origin data were unavailable county boundaries were used to define the "at-risk" community. This study, therefore, under-estimates the actual impact of hospital closures on access to charity care services in certain counties and over-estimates the impact in other counties.

Table 1. Three-Year Average Total Margins for Rural Hospitals in Texas, 1996-1998

	N	% with Negative Total Margin	Total Margin	
			Average	Median
All Rural Hospitals	154	31.0	3.6	3.8
Ownership/Profit Status				
Government	105	31.4	3.1	3.3
Voluntary, Non-profit	31	29.0	2.5	4.2
Proprietary	15	26.7	9.9	9.0
Bed Size*				
0-25	17	35.3	2.7	3.2
26-50	74	40.5	0.6	2.2
51-150	52	21.2	7.6	9.1
151+	9	0.0	7.4	4.2
Disproportionate Share Percentage				
High (>0.25)	73	30.1	5.0	4.3
Low (<0.25)	71	32.4	2.5	3.8
Special Payment Designation*				
No Designation	55	34.6	2.7	3.4
Sole Community Hospitals	56	26.8	4.9	4.7
Rural Referral Center	9	0.0	9.9	5.5
Medicare-dependent	24	45.8	1.2	1.4

* = Percent with negative total margin differs significantly (p < 0.05) by the characteristic.

RESULTS

Characteristics of Rural Hospitals

Data were available for a total of 154 short-term rural hospitals in Texas. Approximately 69% of these hospitals were government-

owned, 21% were voluntary, and the remaining 10% were proprietary. Not surprisingly, the majority of rural hospitals were small. Sixty percent of hospitals had fewer than 50 beds and 12% had 25 beds or less. Only 6% of rural hospitals were over 150 beds. Only one hospital in the sample was a teaching facility. Almost two-thirds of rural

Table 2. Charity Care Expenditures by Hospital Characteristics, Rural Hospitals in Texas, 1996-1998

	Charity Care as Percent of Total Operating Expenses	
	<u>Average</u>	<u>Median</u>
All Rural Hospitals	1.81	1.52
Ownership / Profit Status*		
Voluntary, Non-profit	2.14	1.95
Proprietary	1.20	0.77
Government	1.80	1.48
Bed Size		
0-25	1.36	1.17
26-50	1.85	1.44
51-150	1.80	1.66
151 +	2.37	2.14
Disproportionate Share Percentage*		
High (>0.25)	2.10	1.68
Low (<0.25)	1.58	1.45
Special Payment Designation		
Sole Community Hospital	2.00	1.73
Rural Referral Center	2.40	2.36
Medicare-dependent Hospital	1.38	1.23
No Designation	1.82	1.48
Profitability		
(+) Three-year Total Margin	1.85	1.66
(-) Three-year Total Margin	1.61	1.33

* = Charity care expenditures differ significantly (p < 0.05) by the characteristic.

hospitals had a special Medicare payment designation. Thirty-eight percent of rural hospitals were Sole Community hospitals, 17% were Medicare-dependent hospitals, and 6% were Rural Referral Centers.

Profitability of Rural Hospitals

Rural hospitals' three-year total margin averaged 3.6%, but varied widely, from a high of 33.1% to a low of -60.9%. A total of 47 rural hospitals, or 31%, were found to have negative three-year average total margins. Interestingly, over 25% of rural hospitals had total margins exceeding 10%.

Relationship Between Financial Vulnerability and Hospital Characteristics

Only two hospital characteristics were significantly ($p < .05$) associated with a negative three-year average total margin: size and Medicare payment designation. Approximately 35% of hospitals with fewer than 25 beds and 41% of hospitals with between 26 to 50 beds had negative three-year average total margins compared to only 21% of hospitals with between 51 to 150 beds and none of the hospitals with over 151 beds.

As indicated by the high proportion of hospitals that had a negative three-year average total margin, Medicare-dependent hospitals were among the most financially vulnerable rural hospitals. Nearly 46% of Medicare-dependent hospitals were found to have a negative three-year average total margin compared to only 35% of hospitals with no special payment status, 27% of Sole Community Hospitals, and no Rural Referral Centers.

Rural Hospitals' Expenditures on Charity Care

Rural hospitals expended approximately 1.8% of 1996-1998 total operating expenses on charity care. Charity care expenditures, however, varied widely from a high of 7.9% to a low of 0.8% of total operating expenses.

Two characteristics were significantly related to the level of charity care contributed by rural hospitals: ownership and whether or not the hospital treats a high share of low-income patients (disproportionate share percentage or DSH). Compared to proprietary hospitals, charity care as a proportion of total operating expenses was approximately 78% and 50% higher, respectively, among voluntary and government-owned hospitals. Charity care expenditure rates were also 33% higher among hospitals with a high DSH.

Although charity care, as a percent of total operating expenses, was nearly 15% higher among "profitable" than "unprofitable" hospitals, this difference was not statistically significant at the 5% level. Differences in charity care may not have been observed because Texas' standard of "community benefit" effectively reduces variation in charity care across non-profit hospitals.

Magnitude of Charity Care Provided by Hospitals in "At-risk" Rural Counties

A total of 126 of the over 190 rural counties in Texas were represented by the hospitals in this study. Of these counties, a total of 30, or 24%, were found to be "at-risk" for losing free care services; all short-term hospitals operating in these counties were found to have negative average total margins between 1996-1998.

In aggregate, hospitals located in these vulnerable counties provided 14.5% of all charity care expenditures provided by Texas rural hospitals, a total of approximately \$11 million over the three-year period between 1996 and 1998. Adequate county-level estimates of the medically uninsured in Texas are not available. Using the county population under the age of 65 years who are unemployed as a proxy, hospitals in these vulnerable counties provided a three-year average of \$1,115 in charity care per unemployed individual, compared to \$1,368 for all counties.

DISCUSSION

Compared to that of other states, the Texas Medicaid program is substantially less comprehensive; eligibility is restrictive and in 1995 spending per eligible person averaged only 78% of the national average (Wiener, Evans, Kuntz, & Sulvetta, 1997; Holahan, Wiener, & Wallin, 1998). Counties, public and other non-profit hospitals “fill some of the gap that is created by low Medicaid eligibility” by providing health care to low-income and uninsured residents of the state (Wiener et al., 1997).

Efforts to protect access to charity care services for the uninsured in rural Texas are moot without consideration of the factors that contribute to the financial viability of safety net hospitals. This study found that nearly one-third of rural hospitals in Texas were financially distressed. The closure of any of these hospitals, which together contributed to approximately 11% of the free-care expenditures that rural hospitals rendered between 1996-1998, could leave a considerable void in the health care resources available to the medically uninsured.

This study identified two hospital characteristics associated with financial vulnerability: size and Medicare-dependent hospital payment status. Not surprisingly, small rural hospitals were more likely to be in financial distress than other rural hospitals.

The fact that small rural hospitals tend to have higher average costs and to be less profitable than other hospitals has long been recognized (Vogel, Langland-Orban, & Gapenski, 1993; Mick et al., 1994). Indeed, several of the provisions that the Congress included in the BBRA – such as holding rural hospitals with fewer than 100 beds harmless from outpatient payment reform – were designed to financially protect these more vulnerable hospitals.

Medicare special payment designations – including Medicare dependent hospital status – that reimburse rural hospitals on the basis of costs are designed to reduce the financial risk to rural hospitals under the prospective payment system. Given their more favorable reimbursement, the finding that Medicare-dependent hospitals were among the most financially vulnerable providers is of particular concern. It is plausible that these hospitals continue to be financially vulnerable even under cost-based reimbursement, because they are limited in the amount of patient volume that is reimbursed by private payers from which they are able to extract a profit. (To qualify for designation as a Medicare-dependent hospital at least 60% of a hospital’s discharges are required to be Medicare discharges.) In other words, the private-public payer mix of these hospitals may not allow them to develop a sufficient financial cushion.

The BBRA extended authorization for the Medicare Dependent Hospital Program until 2005. Given the poor financial performance of this class of rural hospitals it may be

necessary to explore additional strategies to further promote the financial health of these hospitals.

Ongoing monitoring of the financial performance of other types of rural hospitals is also needed to ensure continued access to health care resources for the uninsured as Medicare payment reforms are implemented. Of particular importance is the monitoring of the financial health of hospitals that treat a disproportionate share of low-income patients. Compared to other rural hospitals, high DSH hospitals provide substantially more charity care (approximately 33% more charity care, as a percentage of total operating revenue than other rural hospitals).

Although hospitals with a high DSH were not found to be more financially vulnerable than hospitals with a low DSH, approximately 30% of these hospitals had negative three-year average total margins. Additional revenue provided by Medicare, Texas' generous Medicaid reimbursement of safety net hospitals, and the state's aggressive expansion of the Medicaid DSH program (Wiener et al., 1997) assist many high DSH hospitals in maintaining their financial health while pursuing their mission to serve low-income and uninsured populations.

It is unclear whether or not DSH hospitals will be adversely affected by the BBA reforms. Under the BBA and subsequent BBRA, DSH payments will be reduced by 3% in fiscal year 2001 and 4% in fiscal year 2002. In addition to these reductions in reimbursement, this legislation mandated that revisions be made to the DSH formula in order to rectify inherent biases in the distribution of DSH funds.

In their recommendations to Congress, MedPAC proposed several revisions to the disproportionate share formula to promote equity between rural and urban hospitals. MedPAC's recommendations, which also

included incorporating charity and uncompensated care expenditures in the DSH formula, have been estimated to increase Medicare payments to rural hospitals without a special payment designation by almost 10% and to increase payments to Medicare dependent hospitals by approximately 60% (Medicare Payment Advisory Commission, 2000a; Medicare Payment Advisory Commission, 2000b).

The impending reductions in DSH payments as well as HCFA's approach to revising DSH payments could have significant repercussions for hospitals' financial health and the availability of charity care services in rural communities.

CONCLUSION

Together with the state and counties, hospitals share the burden of providing health care services to the medically uninsured. From this study it is not possible to determine whether or not charity care provided by rural hospitals is sufficient to meet community needs. Regardless, it is evident that access to charity care services for the uninsured is closely tied to hospitals' continued financial viability. The financial failure of rural hospitals could result in the failure of the health care safety net to meet the needs of the uninsured. Close monitoring of the impending Medicare payment reforms is necessary to ensure that resources are available to enable rural safety net hospitals to continue to serve their communities.

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EVALUATION OF MEDICAID STATUS, RACE, AND URBANICITY
AS RISK FACTORS FOR ASTHMA HOSPITALIZATION

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ABSTRACT

This study was undertaken to evaluate associations between selected demographic groups (race, payer status, and urban vs. rural residence) and hospitalization rates for asthma. Asthma hospitalizations were identified from the 1997 Iowa hospital discharge database. Hospitalization rates were compared by payer status, race, and urban versus rural residence. Age, gender (females), non-White status, and Medicaid eligibility were found univariately to be risk factors for asthma hospitalization. The increased rate of asthma hospitalization for the Medicaid eligible population was specific to urban residents and no differences persisted between Whites and non-Whites controlling for insurance payer. The disparities noted between hospitalization rates for asthma across ethnic groups, urban-rural residence, and Medicaid coverage versus other insurance are most consistent with differences in environmental quality and clinical care for these demographic groups.

Key words: asthma, insurance status, hospitalizations, Medicaid, urban, gender, race, age. (Texas Journal of Rural Health 2001; 19(1): 49-56)

INTRODUCTION

Asthma is one of the most common chronic diseases in the United States and is the most prevalent chronic disease of childhood (Newacheck, Budetti, & Halfon, 1986). The prevalence of asthma, based on outpatient visits, has increased by 50% over the last decade (Burt & Knapp, 1996). Asthma fatalities have increased by 80% over the last decade and now account for 4,000 deaths per year (Centers for Disease Control and Prevention, 1995). The increase in asthma morbidity and mortality has not been homogeneous throughout the United States, but has been greatest in certain urban settings and among minorities (Gerstman, Bosco, & Tomita, 1993). Several epidemiologic studies have shown racial and socioeconomic disparities in risk and severity of asthma. Hospitalization rates for asthma among children and young adults are 3.5 to 5 times higher for African-Americans than for Whites and asthma mortality is 5 to 10 times higher (Centers for Disease Control and Prevention, 1996). Low socioeconomic status has been found by some investigators to be an independent risk factor for asthma controlling for race and residence (Weitzman, Gortmaker, & Sobol, 1990; Sarpong, Hamilton, Eggleston, & Adkison, 1996; Wissow, Gittelsohn, Szklo, Starfield, & Mussman, 1988; Mielk, Reitmeir, & Wjst, 1996). The independent contributions of race, socioeconomic status, and environmental exposures to asthma risk are hard to distinguish given the strong association between these hypothesized risk factors. A recent article reviewed 24 articles published since the late 1960's evaluating the association between asthma in childhood and socioeconomic status and found them to be split equally between those that found low socioeconomic status to be a risk factor for asthma and those that did not (Mielk,

Reitmeir, & Wjst, 1996). In addition, differences in adherence to clinical practice guidelines also contribute to the variability in asthma outcomes associated with race and socioeconomic status (Laumann, J. & Bjornson, 1998a; Crain, Weiss, & Fagan, 1995; Finkelstein, Brown, Schneider, et al., 1995; Homer, Szilagyi, Rodewald, et al., 1996). We performed the following study in order to evaluate differences in asthma hospitalization rates using a statewide hospital discharge summary data set. This population-based data set allows for measurements of hospitalization rates by demographic subgroups and provides some clues as to risk factors for asthma hospitalization.

METHODS

This study examined a statewide database containing all inpatient discharges related to respiratory diseases during 1997. A computer tape listing of all hospital discharges in Iowa during 1997 with respiratory disease codes consistent with asthma in any of the first ten listed diagnoses was obtained from the Iowa Department of Public Health.

Information available in the database included demographics (age, gender, race, county of residence), ten primary diagnoses and admission diagnosis, discharge status (transferred to another facility, discharged home, dead, .etc.), length of stay, source of payment, and total charges. The population profile of the state residents was obtained from the United States 1997 Census Bureau County Estimates. Data from this source were used to calculate the number of residents per county by age, gender, race, residence, and Medicaid eligibility. The number of Medicaid recipients was based on census estimates for the population within each county lying at or below 133% of Federal poverty guidelines.

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Hence, Medicaid eligibility is hereby used as a surrogate for low socioeconomic status. These population numbers obtained were used as denominators to calculate rates of hospitalization for each subgroup (by gender, urbanicity, Medicaid status ,...etc.). County of residence from each of these sources was categorized as either urban or rural. The assignment of counties as rural or urban was based on the classification of the United States Department of Commerce Bureau of Economic Analysis' Regional Economic Information System, which divides counties

into metro, urban non-metro, rural adjacent, and rural non-adjacent, based upon population counts and population densities from the 1990 census. Rural and rural non-adjacent counties were categorized as rural counties, the other two categories were classified as urban. Race was grouped as either White or non-White (including Black, White Hispanic, American Indian, and Asian and Pacific Islander) due to the small number of non-Whites compared to Whites in the state of Iowa, and those with unspecified race were excluded.

Table 1. Asthma Hospitalization Rates During 1997 by Rurality, Age, Race, & Gender

<u>Risk factors</u>	<u>Hospitalization Rates/1000 Residents</u>			
	<u>Urban</u>		<u>Rural</u>	
	<u>Hospitalization Rate</u>	<u>Odds Ratio (95% CI)</u>	<u>Hospitalization Rate</u>	<u>Odds Ratio (95% CI)</u>
<i>Gender</i>				
Male	2.31	1.00	1.55	1.00
Female	3.68	1.6(1.54-1.73)	2.28	1.48(1.36-1.60)
Total	3.01		1.92	
<i>Race*</i>				
White	2.10	1.00	1.90	1.00
Non-White	2.80	1.33(1.14-1.49)	0.89	0.47(0.29-0.74)
<i>Age</i>				
0-9	4.66	1.00	2.08	1.00
10-19	2.09	0.45(0.40-0.50)	0.94	0.45(0.38-0.54)
20-29	2.00	0.43(0.38-0.47)	1.00	0.47(0.40-0.58)
30-39	2.25	0.48(0.43-0.53)	1.23	0.59(0.50-0.70)
40-49	2.56	0.55(0.49-0.61)	1.27	0.61(0.52-0.72)
50-59	3.23	0.69(0.61-0.78)	1.85	0.88(0.75-1.05)
60-69	3.57	0.76(0.68-0.86)	2.81	1.35(1.16-1.56)
70-79	5.02	1.08(0.96-1.20)	4.39	2.13(1.85-2.44)
80+	6.28	1.35(1.19-1.54)	4.75	2.27(1.96-2.63)

*A third category "unspecified" was omitted from the calculations of the hospitalization rates by race.

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International Classification of Diseases, 9th revision, clinical modification codes under the rubric of code 493.0-493.9 were used to identify asthma hospitalizations. Discharge records with asthma codes appearing in any of the first three diagnoses were selected to be analyzed.

Prevalence is reported per 1000 population in each group. Two analyses were conducted that compared asthma hospitalization rates. The first compared differences in rates across gender, race, and age in urban versus rural settings. The second evaluated the differences in rates between the Medicaid and non-Medicaid population across gender, race,

residential setting (rural vs. urban), and by age. Statistical analysis was performed using the Statistical Analysis System (SAS) software program, and Epi Info. Mantel-Haenszel statistic analyses were conducted to detect statistically significant differences between the different groups.

RESULTS

The total number of discharges related to respiratory diseases was 58,513, of which 11,103 had asthma as one of the first ten diagnoses. Out of the latter discharges, 2553

Table 2. Asthma Hospitalization Rates During 1997 by Insurance Status (Medicaid, non-Medicaid), Age, Race, and Gender

<u>Risk Factors</u>	<u>Hospitalization Rates/1000 Residents</u>		
	<u>Medicaid</u> Hospitalization Rate	<u>Non-Medicaid</u> Hospitalization Rate	<u>Odds Ratio</u> (95% CI)
<i>Gender</i>			
Male	3.76	1.76	2.14 (1.93-2.36)
Female	4.28	2.84	1.51 (1.40-1.68)
Total	4.07	2.30	1.77 (1.67-1.88)
<i>Race*</i>			
White	4.09	2.14	1.61 (1.49-1.73)
Non-White	4.05	2.36	2.92 (2.37-3.59)
<i>RuralityAge</i>			
Rural	2.23	2.16	1.03 (0.92-1.16)
Urban	4.12	2.50	1.65 (1.54-1.77)
<i>Age</i>			
<18	3.05	1.90	1.92 (1.74-2.12)
18+	4.79	1.65	1.72 (1.58-1.87)

*A third category "unspecified" was omitted from the calculations of the hospitalization rates by race.

had asthma as the admitting diagnosis. The number of discharges of which asthma codes appeared in one of the first three diagnoses was 7149.

Hospitalization Rate Comparisons by Urbanicity

Asthma hospitalization rates are presented by location of residence in Table 1. The risk of asthma hospitalization was higher for residents of urban counties than among those of rural counties for all the risk factors studied. Females had a significantly higher hospitalization rate in both urban (OR=1.6, 95% CI: 1.5-1.7) and rural (OR=1.5, 95% CI: 1.36-1.6) settings than males. Non-Whites had a higher rate in urban counties (OR=1.33, 95% CI: 1.14-1.49) than Whites; however, being a non-White was a protective factor in rural counties (OR=0.47, 95% CI: 0.29-0.74). Age comparisons were made across the different age groups with 0 to 9 being the reference group. Among residents of urban counties, it was observed that all age groups had a lower risk of hospitalization than the reference group except the age groups 70 to 79 and 80+. These groups had the highest of hospitalization rates. The same bimodal pattern was observed among rural residents, with the age group 60 to 69 also having a higher risk of hospitalization than the age group 0 to 9.

Hospitalization Rate Comparisons by Insurance Status

Hospitalization rates by insurance status (Medicaid, non-Medicaid) are presented in Table 2. In general, the risk of asthma hospitalization was significantly higher for the Medicaid population than the non-Medicaid population (OR=1.77, 95% CI: 1.67-1.88). Both

males and females covered by Medicaid had a higher risk of hospitalization compared to their non-Medicaid counterparts. Whites covered by Medicaid were more likely to be hospitalized for asthma than non-Medicaid Whites (95% CI: 1.49-1.73), Medicaid-covered nonwhites were even at a higher risk compared to the non-Medicaid non-Whites (OR=2.92, 95% CI: 2.37-3.59). Whereas urban residents covered by Medicaid were hospitalized for asthma at significantly higher rates than were urban residents with other insurance, (OR= 1.65, 95% CI: 1.54-1.77), no such increase in asthma hospitalization rate among those covered by Medicaid was noted among rural residents (OR=1.03, 95% CI: 0.92-1.16). Those less than 18 years old and covered by Medicaid had approximately twice the rate of hospitalization as their non-Medicaid counterparts, (OR= 1.92, 95% CI: 1.74-2.12). Those over 18 years of age covered by Medicaid had a similar increased rate of asthma hospitalization as compared to the non-Medicaid covered adults (OR=1.72, 95% CI: 1.58-1.87).

DISCUSSION

National data indicate that asthma prevalence and mortality are increasing and are responsible for an estimated \$1.9 billion in medical costs and \$1.7 billion in lost productivity each year (Weiss, Gergen, & Hodgson, 1992). It is widely believed that disability and mortality from asthma are largely preventable through effective medical and environmental management. Hospitalization for asthma is also generally considered preventable or even a "treatment failure" for cases that should otherwise be managed in a physician's office or self-treated. Thus, higher rates of hospitalization may be a result of poor access to care by a physician or an

inability of patients to understand and self-manage their asthma condition. We found highly disparate rates of hospitalization between non-Whites living in urban and rural areas, with non-White status being a significant risk factor for asthma hospitalization among urban residents, but being protective among rural residents. Further investigation is needed to understand if these differences are due to economic barriers in access to care or the ability of these populations to self-manage their asthma.

Population based surveillance is a mechanism by which risk groups can be discerned, hypotheses and interventions developed, and trends or intervention effects tracked over time. The statewide hospital discharge summary database allows for a readily available means of performing such evaluations. Related studies are critical for optimizing patient treatments in an environment with increasing economic pressures and "managed" health care services.

For the most part, the results of this population-based study of hospitalization rates among demographic subsets of the population are consistent with results from other studies. Urban residence was a consistent risk for asthma across gender and all age groups. Similarly Medicaid eligibility was a significant risk factor for asthma hospitalization across gender, racial, residence, and age groupings. The increased rate of asthma hospitalization among urban as compared to rural non-Whites but not among urban as compared to rural Whites is a novel finding, but of unclear significance. Future studies will have to focus on issues of availability of and differential delivery of clinical and preventive services across the above identified risk groups.

Increased rates of hospitalization for asthma noted among certain subsets of the population have multiple possible explana-

tions and require more in depth clinical and epidemiologic evaluation to elucidate risk factors such as environmental quality, access to clinical services, supply of providers (Rohrer, Change, & Ludke, 1994), adherence to clinical guidelines by both providers and patients, and other factors that might be of significant. The disparities noted between hospitalization rates across ethnic groups, urban-rural residence, and Medicaid coverage versus other insurance are most consistent with the hypothesis that observed differences are the result primarily of socioeconomic status differences with concurrent differences in environmental quality and clinical care. The disparities in hospitalization rates between rural and urban areas, however, might be a result of the limited access that rural populations have to health services compared to their urban counterparts. In this case, the higher rates of hospitalizations that were observed do not reflect a higher prevalence of asthma in urban areas. Rather it highlights an access problem in rural areas, where people with asthma are not able to seek the care they need due to the unavailability of services. This either results in them not getting the care they need, or migrating to neighboring areas where services are available to seek medical care.

A previously published drug utilization review of Medicaid-covered asthma patients in Iowa documented that only one half of the patients who should have received inhaled corticosteroids according to clinical guidelines had received them (Laumann & Bjornson, 1998b).

There are several obvious limitations to the use of a secondary data set such as the hospital discharge summary data for epidemiologic purposes. These data are predominately for administrative and billing purposes where a possibility for misclassification exists.

Because asthma remains a clinical diagnosis and misclassification or overlap with other respiratory diseases is quite likely, the investigators plan to perform these same evaluations for hospitalizations with any ICD-9 code consistent with asthma. This would allow one to determine whether the increased rate of hospitalization for the Medicaid eligible (low SES), population, urban residents and non-Whites carries over to non-asthma respiratory disease codes. There appears to be a statistical interaction between the associations between hospitalization rates and race groups and insurance payor groups and residence, (urban versus rural). Unfortunately, such interaction effects cannot be further evaluated using aggregate data, in this case census data, for denominators.

The exclusion of discharge summaries with unspecified race may have affected the measured differences in hospitalization rates by race in some fashion. The dichotomization of the population into White versus non-White and the small fraction of the population described as non-White in this rural mid-western state limits the ability, or power, to compare smaller demographic subsets.

Major efforts are needed to implement ongoing surveillance as well as provider and patient education to assure access and quality of clinical and preventive services for asthma. *Healthy People 2010* activities might provide a forum for the development of such activities on a state-by-state basis.

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RISK FACTORS FOR ASTHMA HOSPITALIZATION

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PROGRESSIVE MEDICAL CARE IN NON-METROPOLITAN AREAS

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ABSTRACT

After presenting a normative model for progressive design of medical care systems, we investigate the possibility that medical care provided in non-metropolitan areas exhibits fewer features that might be described as progressive. The data were limited to cases involving heart disease so as to control for patient differences. Patient visits for heart disease were extracted from the 1998 National Ambulatory Medical Care Survey (NAMCS).

However, progressive medical care, defined as using primary care physicians, group practice, and nurses, along with standardization of service intensity, is more common in non-metropolitan areas than in urban areas.

Key words: heart disease, HMOs, medical care organizations, national ambulatory medical care survey, non-metropolitan areas. (Texas Journal of Rural Health 2001; 19(1): 57-66)

INTRODUCTION

Progressive reformers have recommended that health care be organized around prepaid group practices since the Committee on the Costs of Medical Care issued its reports in the

1930s (1932). Good medical care was defined by this group as encompassing science, rationality, prevention, cooperation with the lay public, treating the individual as a whole, continuity of care, coordination of all types of services including social welfare, and serving all the needs of all of the people (Lee & Jones, 1933). In short, “good medical care” sounds a lot like a progressive definition of primary care.

By the 1970s, many health care reformers had learned that the Kaiser-Permanente plan appeared to meet some of the structural requirements of good medical care. Since it was prepaid, plan managers had an incentive to keep employees healthy. No burdensome coinsurance requirements existed to discourage use of services. Physicians were salaried. Hospital admission rates were lower than expected and no evidence was available to indicate that quality was not comparable to that found in fee-for-service plans. Consequently, the prepaid group practice concept was renamed “Health Maintenance Organizations” and the federal government encouraged their spread.

By the 1990s another name change had occurred: HMOs had become “managed care.” Prevention, coordination, continuity, and accessibility had fallen off the priority list for many managed care plans as they sought to adopt administrative and financial strategies that would reduce service utilization. The incentives they built into their plans were designed to encourage providers of medical care to produce more services with fewer resources.

The older notion we might call “the health maintenance model” still persists, however. Idealists may believe that health plans and health care systems can be divided into “good” medical care organization (MCO) and “bad” MCO with “good” MCO eschewing utilization management, coinsurance and

preauthorization because they constitute barriers to accessing services and instead using capitation, employment of nurses in conjunction with physicians, and designated PCPs (primary care providers) for each patient (Lessler & Wickizer, 2000; Solanski, Schauffer, & Miller, 2000). The use of PCPs would be expected to promote continuity, coordination, and health promotion.

How all of these changes relate to rural markets is unclear. Since specialty care may be scarce in rural health systems, primary care may dominate, possibly to the advantage of consumers. However, since managed care is less common in rural areas, it is possible that providers have not begun to move in the direction of standardization of care.

The purpose of this article is to describe how health care in non-metropolitan areas compares to progressive principles of “good” medical care organization. Theoretically, progressive MCO should result in better performance on the part of medical care providers than is true of other types of managed care. We limit the data to cardiology visits to reduce the conflicts that can arise from differences in diagnoses.

CONCEPTUAL MODEL

Ideally, health care systems should be designed to meet community needs. Specifically, the array of resources made available in a given community and the way they are organized should be planned to promote affordable access to high-quality care (Rohrer, 1999). Clearly, this is a normative model of medical care organization rather than one based on empirical evidence. Yet, it is one progressives have advocated for decades.

Needs for care are reflected in demographic and socioeconomic characteristics of consumers as well as by the diseases from

which they suffer (Andersen, 1999). Some patient characteristics, however, should not be related to service delivery. Racial or ethnic differences in treatment may reflect inequities, if needs for care are being held constant.

Theoretically, design of the system will achieve access, quality, and cost-effectiveness if it uses non-physicians in concert with the physician and it emphasizes primary care (Andersen & Hampton, 1999; Starfield, 1992). Primary care specialists might be expected to perform better in regard to delivery of primary care. True primary care, of course, entails continuity of care and preventive medicine. Capitation may also, in some circumstances, promote prevention. Other types of managed care (e.g., co-pays, deductibles, and preauthorization), however, may simply discourage use of service.

Organizational arrangements also may promote or discourage quality and efficiency. For example, group practice is thought to be superior to solo practice because of the opportunities for peer review and management (Wolinsky & Marder, 1985; Freidson, 1970). Independent clinicians such as those in a free-standing clinic are less subject to managerial control than clinics that are part of a larger organization, which suggests a need for what is called "clinical integration;" i.e., tighter organizational linkages between clinicians and the administrative components of health care delivery (Morrisey, Alexander, Burns, & Johnson, 1999; Alexander, Morrisey, Burns, & Johnson, 1998). Capitation financing may contain incentives to keep patients healthy. Use of primary care providers (PCPs) should improve medical performance because it involves establishing a relationship between physician and patient. Finally, a clinic located in a non-metropolitan area may perform differently because fewer resources are available locally to draw upon.

Two dimensions of performance for medical care organizations are visit length and service intensity. Both directly relate to productivity, since they concern inputs and outputs. When patients spend more time with their doctors, their doctors can see fewer patients. When patients consume more tests, the costs of serving a given population are higher. Naturally, both time and intensity may also be associated with the quality of care. Visits that are too short may not allow for the best possible diagnosis and treatment. Patient satisfaction may also be affected. Ordering too many tests may lead to false positives and unnecessary hospitalizations.

The existence of variability in health care delivery is well established. At the population level, Wennberg and others have shown that utilization rates differ across geographic areas (Wennberg & Gittelsohn, 1982). Of course, some variation in utilization rates should be expected because of chance (Diehr, Cain, Connell, & Volinn, 1990). However, from a statistical process control perspective, the ultimate goal is to eliminate variation. Over the last decade, many health care organizations have adopted from other industry's quality improvement philosophies, including continuous quality improvement and total quality management (Shortell et al., 1995). A first step in the quality improvement process is the identification of services or procedures that exhibit high variability, such as treatment for heart disease. Once such treatments are targeted, quality control tools, such as quality control charts, are used to determine possible sources of variation (Sinioris & Najafi, 1995). The mean rate for a given procedure, such as the mean number of minutes seen by a physician, is typically considered the standard of care. Unexpected variation is thought to exist if it falls outside of an upper or lower control limit. Thus, the approach used in this

study to identify a "standard of care" for heart disease patients is consistent with statistical process control techniques that are employed in health care settings.

Ultimately, standardization of care should optimize the balance between quality and efficiency. When patient needs are taken into account, exceptionally long visits or exceptionally short visits should not be necessary. Standardization of tests and procedures is desirable for the same reason. After all, visits that use a large amount of services (high intensity) are also costing society a lot of money—money that could be reallocated to meet the needs of more people. Thus, the rates of standard visits, both in terms of duration and service intensity, become measures of the performance of provider organizations.

Two questions arise from the foregoing discussion. First, are the elements of progressive health care organization (use of nursing personnel, use of primary care physicians, group practice, and capitation) less common in non-metropolitan areas because of resource shortages and lack of pressure from managed care? And second, is the probability of a standard visit, both in terms of intensity and duration, lower in non-metropolitan areas because of the lack of pressure from managed care?

METHODS

The National Ambulatory Medical Care Survey (NAMCS) from 1998 served as the data source for this study. Heart disease cases (ICD 409-430) were selected to create a homogeneous patient group. This yielded a sample of 903 patient visits.

Urban and rural residence was measured by classifying visits as non-metropolitan (under 250,000) versus metropolitan centers.

No category for more rural populations is available in this data set. Patient variables included age, race (white versus other), and ethnicity (Hispanic versus other). Medical care organization variables were whether the MD was the patient's primary care physician, whether the patient belonged to an HMO, whether the visit was capitated, group practice (versus solo), physician specialty (family practice, internal medicine, or other), and the type of nursing personnel involved in the visit. Visits to physician assistants, nurse practitioners, and nurse midwives were too infrequent to include as separate variables.

Time spent with the physician was reported in minutes. The mean visit length was 21 minutes (minimum=0, maximum=240, standard deviation=16.9). A standard visit length was defined as between ten minutes and 30 minutes.

Twenty-four types of services were listed on a check-off sheet. These included examinations (e.g., pelvic, rectal), tests and measurements (e.g., blood pressure, cholesterol), and imaging (e.g., x-ray, MRI). Service intensity was reported as the total number of diagnostic and therapeutic procedures. The mean number of services for heart disease visits was 1.96 (minimum=0, maximum=11, standard deviation=1.6). A standard visit in terms of service intensity was defined as 1 or 2 services.

Cross-tabulations of weighted data were used for the analysis. The NAMCS uses a complex sampling scheme that requires the use of weights in order to generate prevalence rates that are representative of the nation. Because the weights inflate the data to the level of the United States population, the numbers are very large and relationships between variables tend to be statistically significant even if trivial. Therefore, formal hypothesis tests will not be used.

RESULTS

Descriptive statistics for patient variables are shown in Table 1. The mean age was 67. About 7% of patients were Hispanic and over

90% were White. About half were men. Thirteen percent were experiencing dysrhythmia.

Means for system variables also are shown in Table 1. Almost all patients saw a physician and almost none saw a physicians

Table 1. Descriptive Statistics (n=903)

<u>Variable</u>	<u>Mean</u>	<u>Std Dev</u>	<u>Minimum</u>	<u>Maximum</u>
<i>Patient Characteristics</i>				
Age	67.043	14.350	2	100
New Patient	0.102	0.303	0	1.000
Hispanic	0.069	0.253	0	1.000
White	0.919	0.273	0	1.000
Male	0.547	0.498	0	1.000
Dysrhythmia	0.133	0.340	0	1.000
<i>Medical Care Organization</i>				
MD	0.977	0.151	0	1.000
PA	0.028	0.164	0	1.000
NP	0.002	0.047	0	1.000
RN	0.229	0.421	0	1.000
LPN	0.068	0.251	0	1.000
NA	0.288	0.453	0	1.000
Family Practice	0.082	0.274	0	1.000
Internal Medicine	0.150	0.357	0	1.000
Cardiology	0.688	0.464	0	1.000
Surgeon	0.003	0.058	0	1.000
Group	1.680	0.467	1.000	2.000
Patient In HMO	0.214	0.410	0	1.000
Capitated	0.058	0.233	0	1.000
PCP	0.358	0.480	0	1.000
Standard Service	0.632	0.482	0	1.000
Standard Duration	0.601	0.490	0	1.000
High Service	0.256	0.437	0	1.000
Under Twenty Minutes	0.551	0.498	0	1.000
Total Minutes	21.470	16.948	0	240.000
Total Services	1.969	1.554	0	11.000
Non-Metro	0.276	0.447	0	1.000

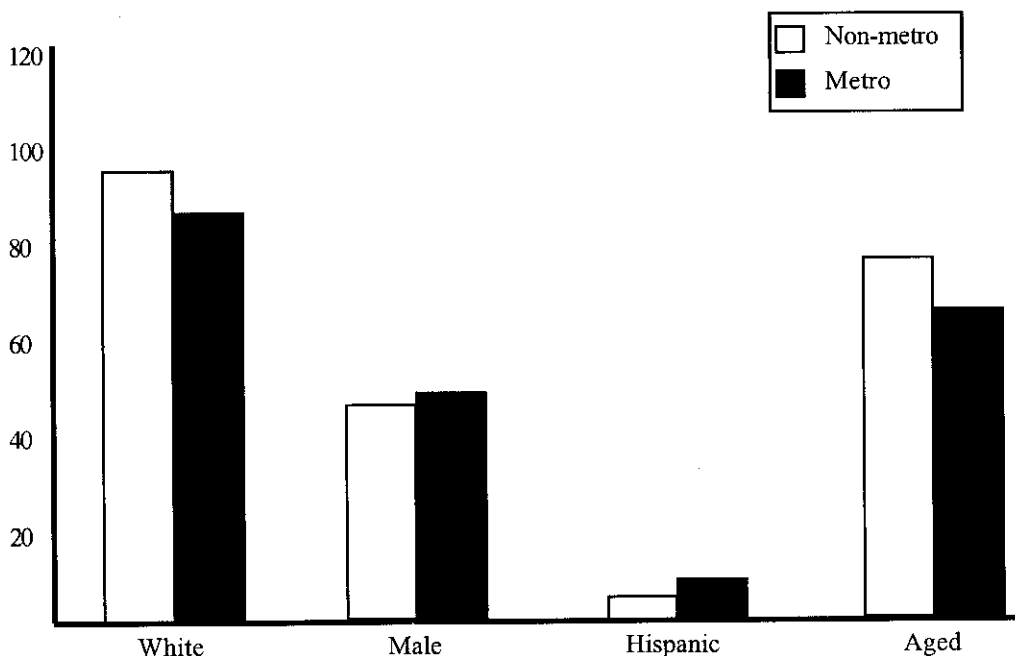
assistant or nurse practitioner. About one-fourth saw RNs or nursing assistants, but only 7% saw LPNs. Interestingly, nearly 70% of patients making a heart disease visit were seeing a cardiologist while only 8% and 15% saw family practitioners or internists, respectively. Almost none were seeing a surgeon. Nearly 70% of visits were to a group practice. One fifth of the patients were in HMOs, but only 6% were capitated. Over 35% of these visits were to the patients PCP. Over 60% of visits involved standard service intensity (i.e. one or two services). Sixty percent also were of standard duration (i.e., between 10 and 30 minutes). One fourth were of high service intensity (over two services). One-half were short visits (under 20 minutes). About 28% were non-metropolitan.

The patients in non-metropolitan areas were similar to urban patients (see Figure 1). Slightly more were White (96% vs. 88%). And non-metropolitan patients were slightly more likely to be over 65 years of age (74% vs. 66%). About 4% of the non-metro visits were by Hispanics, compared to 8% of urban visits.

Examination of Figure 2 reveals that non-metro patient visits were more likely to involve an RN and a LPN than urban visits, and less likely to involve a nursing assistant. Non-metro visits were more likely to involve a family practitioner, but less likely to involve a cardiologist.

Non-metro patient visits were less likely to be covered by an HMO and less likely to be capitated than urban patient visits. Non-metro visits were more likely to be to the patient's primary care provider (PCP) than

Figure 1. Percent of Heart Disease Visits By Patient Type, 1998



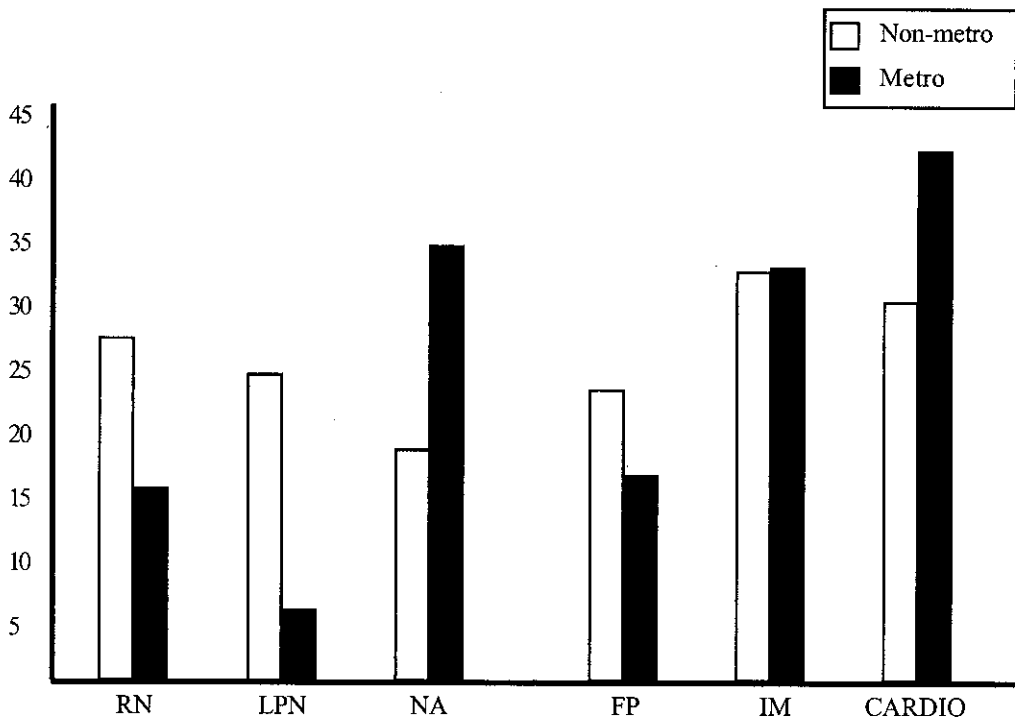
urban visits (61% vs. 56%). Not much difference was seen in the likelihood of being seen in a group practice. Non-metro visits were more likely to be of standard service intensity than urban visits. However, non-metro visits appeared to be less likely to be of standard duration (58% vs. 66%).

DISCUSSION

Recent evaluations of the performance of managed care have not been positive. Coughlin and Long reported the results of an evaluation of Medicaid managed care in northeastern Minnesota (2000). They found no impact of managed care on hospital

admission rates or medical visits. However, patient satisfaction was lower in the managed care plan. Reschovsky, Kemper, and Tu investigated the impact of type of insurance for privately insured persons (2000). By ranking plan types from less managed to more managed (with indemnity plans and preferred provider organizations being less managed and open and closed HMOs being more managed), they were able to show that HMO enrollees were less satisfied. In short, it appears that modern versions of managed care may not be improvements over traditional care, from the consumer's perspective. The data presented in this study suggest that contemporary managed care may not be promoting standardization of care, which may

Figure 2. Percent of Heart Disease Visits Seeing Provider, 1998



explain why the results are not uniformly positive.

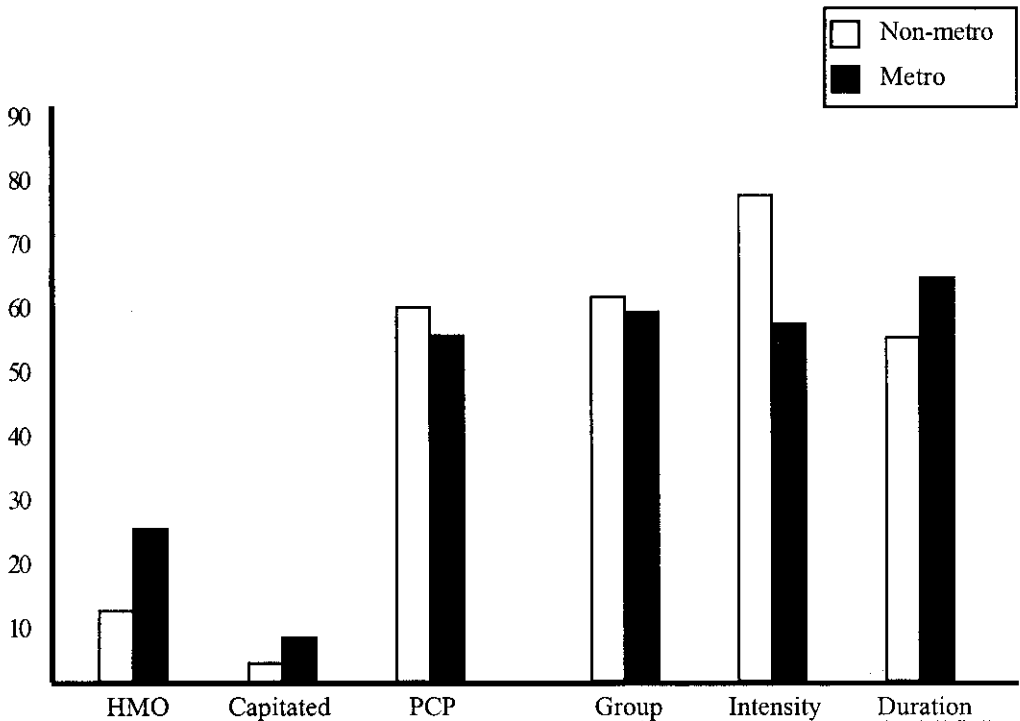
Our results show that non-metro visits by heart disease patients were more likely to use nurses, family practitioners, and PCPs even though the patients tended to be older and therefore may have required complex decision-making than urban visits. We also found that heart disease visits in non-metropolitan areas were more likely to be of standard intensity than urban visits. Non-metro visits may have been less likely to be of standard service duration than urban visits, but this relationship was weaker.

CONCLUSIONS

These descriptive data suggest that medical care provided to heart disease patients in non-metropolitan areas contains several features of progressive patient care more frequently than is true in urban areas. We suspect that long-term prevalence of resource constraints has caused non-metropolitan providers to adopt rational organizational patterns sooner than urban providers. One corollary of this conclusion is that the economic pressures of managed care may not be necessary to spur rural areas to greater efficiency, since, to some extent, they already are functioning in the desired manner.

The results of this study should be

Figure 3. Percent of Visits By HCO, 1998



accepted with caution. First, the data we used are typical of federal surveys in that they do not include information about more sparsely populated rural areas; the category "under 250,000" includes rural populations, but is not limited to truly rural areas. Second, we made the assumption that "standardization" is reflected by average visit length and average service intensity, which may not be correct. It is possible that an optimal balance between quality and efficiency would be achieved with short visits and high service intensity. Or perhaps the standard should be set at longer visits and lower service intensity. Outcome studies are required that will establish the ideal relationship between visit length and service intensity. Finally, our analysis is descriptive rather than analytical. More detailed studies should be conducted with data that permit multivariate analyses of the key hypotheses.

Despite these limitations, at least two policy recommendations are suggested by this study. First, we must point out that federal policy seems to be promoting the expansion of managed care into rural areas. Presumably this is based on some assumptions about efficiency in medical care delivery in those areas. We question whether this strategy is necessary.

Secondly, we observe that urban areas may have something to learn from non-metropolitan areas about the progressive use of primary care physicians and nurses. Further exploration of how the practice of medical care is different outside of urban centers, including examination of outcomes as well as efficiency, is necessary. However, just as in the story of the city mouse and the country mouse, we suspect that medical care providers in urban areas may not be as sophisticated as they assume.

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RURAL ADULTS WITH POOR MENTAL HEALTH:
FINDINGS FROM A NATIONAL STUDY

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ABSTRACT

This study examines the characteristics and predictors of poor mental health status among a national sample of adults in rural areas. Results indicate that rural persons in poor mental health, relative to other rural adults, are more likely to be uninsured, unmarried, and to have problems accessing general health care services. Only 20% of persons in poor mental health received care from a mental health specialist. Logistic regression analysis among this group found that not receiving mental health care was predicted by younger age, being unmarried, and lacking health insurance.

Key words: age, gender, health care access, mental health, race, rural adults, uninsured. (*Texas Journal of Rural Health* 2001; 19(1): 67-73)

RURAL ADULTS WITH POOR
MENTAL HEALTH: FINDINGS
FROM A NATIONAL STUDY

Persons with mental illness are at risk for a variety of health related problems (Willis, Willis, Male, Henderson, & Manderscheid, 1998). Such individuals are at greater risk for functional impairments, chronic physical illness, substance abuse, and premature mortality relative to persons in good mental

health. Persons in poor mental health are also more likely to suffer economic hardship (Regier et al., 1993; Willis et al., 1998). Low income, in turn, increases the probability that persons will lack health insurance. These circumstances place the vulnerable population of persons in poor mental health at a disadvantage in accessing necessary health care services. For example, according to the National Comorbidity Study, only about 11% of persons with a diagnosable mental health disorder during the previous 12 months received care for that problem in the specialty mental health sector (Elpers & Levin, 1996.)

The relationship between mental health and health care access has been studied primarily in urban populations, particularly in regard to nationally representative databases. Such databases have typically not been available to examine this relationship in rural populations. The present study takes advantage of a large and nationally representative database to examine access to care for rural persons in poor mental health. The study examines the characteristics of rural adults according to mental health status, including demographic characteristics, access to health care, and access to mental health specialty care. The study concludes with a discussion of the implications of the findings for rural mental health policy.

METHODS

Source of Data

Data for this paper are from the Community Tracking Study (CTS) Household Survey. The CTS is an initiative of the Robert Wood Johnson Foundation. Household survey data collection occurred in 60 statistical areas nationwide, randomly selected with probability in proportion to population to insure

representation of the United States population. Sites were stratified by geographic region and according to medium and large metropolitan sites (N=48 sites greater than or equal to 200,000 persons), small metropolitan sites (N=3 metropolitan sites with fewer than 200,000 persons), and non-metropolitan sites (N=9 sites). In this study, we limit the analysis to adults (age 18 and over) residing in the nine non-metropolitan sites. The nine sites include rural areas labeled in the CTS as follows: West Central Alabama, Central Arkansas, Northern Georgia, Northeast Illinois, Northeast Indiana, Eastern Maine, Eastern North Carolina, Northern Utah, and Northwest Washington.

Sample selection occurred primarily through random-digit dialing (RDD), supplemented with field samples to represent persons who do not have telephone service. Families within households were defined to include the respondent, their spouse, children under age 18, and children age 18 to 23 who were full-time students. All interviews were conducted by telephone (including cell phones used in the field for persons without telephones) and were conducted in English or Spanish. During the course of the interview information was obtained on all adults in the family as well as one randomly selected child.

The final original Household Survey sample represented a 65% response rate. No information was collected from families that refused to participate and consequently the potential for bias from survey non-response could not be ascertained. However, person-level weights were post-stratified to account for non-response based on age, sex, race or ethnicity, and years of education. Estimates reported in this paper were weighted to be representative of the non-institutionalized civilian United States population as well as representative of each of the sites, using the weights created in the CTS study. Because the resulting weights create huge sample

sizes, we divided the weight variable by a constant, the median weight (994), in order to maintain the weighted nature of the data but employ a dataset that is not too large to preclude meaningful statistical tests. Additional descriptions of the methodology of the CTS Household Survey may be found elsewhere (Cunningham & Kemper 1998; Kemper et al., 1996).

Independent and Dependent Variables

Individual level personal characteristics include: sex, age, race, family income, number of persons in the household, years of education, insurance coverage (yes/no), HMO enrollment (yes/no), problems with access to care, receipt of mental health specialty care, and self-reported physical and mental health status.

The measure of access to care is similar to that developed in the Cunningham and Kemper (1998) study of the CTS Household Survey. Individuals were asked: (1) During the past 12 months was there any time when you didn't get the medical care you needed?; and, (2) Was there any time during the past 12 months when you put off or postponed getting medical care you thought you needed? Follow-up questions identified specific reasons why care was postponed. Access to care was measured dichotomously. Individuals were considered to have had difficulty accessing health care if they answered "yes" to the first question or "yes" to the second question, and if the reasons cited for the second question included the cost of care, problems with health insurance or referrals, difficulty finding physicians or making appointments, or proximity to clinicians.

The measure of mental health care use was based on one question from the Household

Survey. Individuals were asked whether, during the past 12 months, they had "seen or talked to a mental health professional, such as a psychiatrist, psychologist, psychiatric nurse, or clinical social worker." This variable was measured dichotomously.

Health status was measured by two variables: the SF-12 Physical Composite Score (PCS) and Mental Health Composite Score (MCS), which are normed to a mean of 50 and standard deviation of 10. The primary independent variable was the mental health status score on the MCS, categorized into three groups: low mental health, fair mental health, and average to high mental health. The three groups correspond to the 0 to 10th percentile, 11 to 50th percentile, and 51st to 100th percentile of the MCS distribution, respectively. We created these three unequal divisions because we wanted to examine the characteristics and health care experiences primarily of rural persons in poor mental health (at or below the 10th percentile.)

ANALYSIS

A univariate summary of all independent and dependent variables was prepared. Chi-square tests and F-tests were conducted to determine whether access to health care, access to mental health care, and demographic characteristics varied systematically by mental health status.

Then, the group of persons in poorest mental health were studied using logistic regression analysis. The dependent variable was no receipt of mental health care. Individual predictors included age, sex, family income, ethnicity (dummy variables representing Black, Hispanic, or Other race with White as the reference), years of education, family size, marital status, HMO coverage, and lack

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of health insurance. This was done to gain insight into the nature of the mental health access problem among persons in poor mental health.

RESULTS

Summary of Dependent and Independent Variables

The weighted sample size for all rural adults in this study was 2,989. Table 1 summarizes the weighted dependent and independent variables according to mental health status. Persons with lowest mental health status, relative to persons in the other

mental health status groups, were more predominantly female, non-White, younger, of lower income, less educated, in poorer physical health, unmarried, uninsured, and less likely to be covered by an HMO. For example, 22% of persons in poorest mental health lacked health insurance, compared to 12% of persons in the highest mental health status group.

As shown in Table 1, persons with the poorest mental health status were more likely than other mental health status groups to have access problems. Furthermore, 80% of rural persons with the poorest mental health status received no services from a mental health specialist.

Table 1. Summary of Weighted Sample Characteristics

Variable	<i>Poor Mental Health</i> (N=299) Mean or %	<i>Fair Mental Health</i> (N=1196) Mean or %	<i>Average to High Mental Health</i> (N=1494) Mean or %
Problems accessing health care**	42.9%	26.0%	11.9%
No use of mental health specialty care**	80.2%	94.0%	97.0%
Female**	63.1%	58.1%	48.8%
White*	79.3%	84.5%	85.2*
Black	10.6%	9.3%	7.6%
Hispanic non-White	3.3%	2.8%	2.6%
Other race*	7.1%	3.5%	4.6%
Age in years**	43.9	43.9	48.1
Family income**	23,272	32,325	35,726
Years of education**	11.90	12.69	12.92
Household size*	2.41	2.62	2.49
PCS score **	44.2	47.8	49.0
Married**	52.2%	68.0%	71.9%
Uninsured**	21.6%	15.2%	11.6%
Covered through HMO*	18.8%	22.2%	25.7%

* p<0.05; ** p<0.0001

Predictors of No Mental Health Care Among Persons with Poor Mental Health

The logistic regression results, summarized in Table 2, identified three significant predictors of no mental health care among persons in poor mental health: younger age, being unmarried, and being uninsured. Other variables, including sex, race, education, income, and HMO coverage, among others, were not significantly related to receipt of mental health care.

DISCUSSION

Results suggest that persons in rural areas who are in poor mental health have greater difficulty accessing general health care

services than persons in better mental health. Results also indicate that only 20% of rural adults with the lowest mental health status received care in the last year from a mental health specialist. Correlations of lack of mental health specialty care for those in poorest mental health included younger age, lack of health insurance, and being unmarried. Over 21% of rural adults in poor mental health lacked health insurance coverage

The characteristics of rural adults with poor mental health largely match those found in other research on non-rural populations (Regier et al., 1993; Willis et al., 1998), and suggest that the risk factors for poor mental health are the same in urban and rural settings. It is interesting that rural persons in poor mental health were less likely to be covered by an HMO. This is probably a self-

Table 2. Logistic Regression Results, No Receipt of Mental Health Services, Adults with Poor Mental Health Status

Independent Variable	Rural	
	Estimate (se)	Odds Ratio (95% CI)
Female	0.047 (0.333)	1.05 (0.55-2.02)
Black	0.735 (0.595)	2.09 (0.65-6.70)
Hispanic non-White	-0.688 (0.785)	0.503 (0.011-2.34)
Other race	0.444 (0.687)	1.56 (0.41-5.99)
Age in years*	0.030 (0.012)	1.03 (1.01-1.06)
Log of family income	0.029 (0.071)	1.03 (0.90-1.18)
Years education	-0.100 (0.070)	0.91 (0.79-1.04)
Household size	-0.045 (0.137)	0.96 (0.73-1.25)
PCS score	0.013 (0.013)	1.01 (0.99-1.04)
Married*	0.894 (0.391)	2.44 (1.14-5.26)
Uninsured *	0.939 (0.435)	2.56 (1.09-6.00)
Covered through HMO	0.037 (0.402)	1.04 (0.47-2.28)
Model fit	c= 0.692	

* p<0.03

selection artifact, in that persons who choose to be enrolled into HMOs are generally healthier than others, or conversely, that persons in poorer health prefer not to enter HMOs if possible.

In the Regier et al. (1993) Epidemiologic Catchment Area study, one of the most powerful predictors of mental illness risk was being divorced or separated. Our study suggests that unmarried persons face a double risk, for in addition to the risk for mental illness there is also an increased risk of not receiving specialty care when mental health is poor. These results identify a rural group of high risk persons that service systems should be prepared to address.

Some of the characteristics associated with poor mental health are more common in rural than urban areas, including lower income and education, and more frequent lack of health insurance. These risk factors confirm the difficult circumstances more common in rural areas that demand our continued attention (Beeson, Britain, Howell, Kirwan, & Sawyer, 1998). In particular from a health policy perspective, providing health insurance to rural populations remains an important objective.

Given the access problems encountered by rural populations, attention must also be focused on the delivery system issues that may create rural access barriers. According to Andersen's behavioral model (1995) these are among the "enabling factors" that determine the availability and accessibility of care. Persons with depression living in rural areas are more likely to experience transportation difficulties in accessing care (Fortney, Rost, Zhang, & Warren, 1999). The supply of health care providers and mental health specialists is much lower in rural areas than in urban areas (Hendryx, Borders, & Johnson, 1995; Bachrach, 1985; Wagenfeld & Ozarin, 1982).

Although the results are not unexpected, they confirm the importance of the uninsurance problem in rural areas, and the difficult economic and social circumstances faced by rural adults in poor mental health. From a policy perspective, we need to continue to address financing and insurance mechanisms for rural areas, engage in rural economic development, and strengthen rural mental health systems through prevention and outreach to at-risk groups and health care profession supply initiatives.

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