

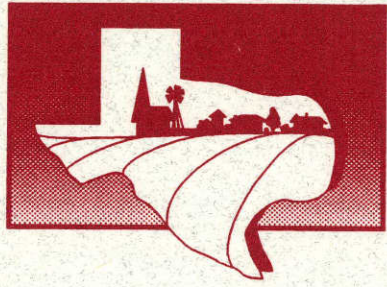
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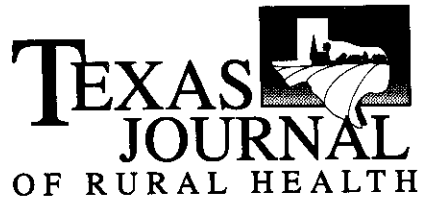
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The purpose of this journal is to provide a forum for sharing ideas related to rural health.

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The editorial board has quarterly meetings to discuss the manuscripts recommended by the reviewers. Content is the most important feature discussed at this meeting. Recommendations are to either (a) accept the manuscript, (b) accept the manuscript with revisions, (c) revise and resubmit the manuscript, or (d) reject the manuscript. In all cases, authors are encouraged to continue toward publication and every effort is made to facilitate that process.

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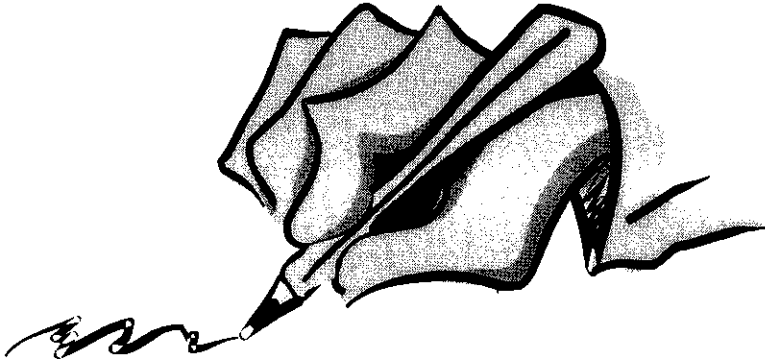
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The *Texas Journal of Rural Health* is currently accepting manuscripts for publication on various topics relating to rural health issues. We are looking for articles to go into our new sections:

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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.”

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WAR AND RURAL HEALTH

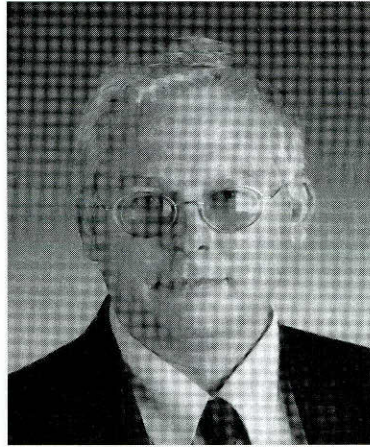
Residents of rural areas sometimes pride themselves on not following national and world events. Why should they care what happens in some big city far away? If a pollster came to the farm house door and asked this question: "Does federal policy improve the lives of average people living in rural places?" a typical answer might be: "Not so's you'd notice."

The situation has changed. Ingrained dislike for city people, including New Yorkers, has given way to horrified sympathy laced with icy dread. Urban and rural folk alike are frightened, with adverse consequences for our travel plans, our economy, and our mental health. But before we can start to deal with the consequences of fear, we must ask whether or not fear is justified.

The terrorists targeted large cities. Epidemics, should they occur, will be most immediately devastating in cities. Rural areas contain some targets of strategic value, however, and this includes not only military bases and power plants, but also agricultural targets that could be used to poison the food supply. Furthermore, if the national economy sours dramatically, then our fragile local economies could begin to suffer quickly.

A fair assessment of the relative risk is that while rural areas might face less risk, they are not risk free.

Some actions can be taken, however. Vigilance is warranted. If watchfulness leads to watching out for your neighbor, then we can be happy about that. Education is needed for children and adults alike regarding



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what to watch for and what to do if you see behavior suggestive of terrorist activity. Unusual physical symptoms may call for prompt medical care. Prevention strategies may require development and dissemination. Health care personnel may require additional training.

An important issue, from the perspective of your Editor, is that the field of public health offers the best defense against bio-terrorism, but the public is generally not aware of this. Public health grew out of the need to control epidemics, after all. Before the germ theory of disease was developed, public health workers were able to stymie the spread of deadly diseases. This should be reassuring, because it means that we don't need to have all the scientific facts sorted out before we can begin

containment, surveillance, and investigation of outbreaks. Unfortunately, most people think all public health is doing during the current crisis is swabbing noses in Florida.

Defensive actions can be taken and that should reduce anxieties somewhat. However, many people are suffering deeply though silently from war worries. Generalized anxieties are exacerbated by the world situation. People are losing sleep and avoiding travel that would allow them the comfort of distant family members. What is happening to anxious people who have hypertension or other chronic diseases that may be influenced by psychological factors? Some people should be encouraged to seek help in the form of support groups, counseling, or medical visits. Yet, many rural communities lack these resources.

As our rural communities plan their defenses against terrorism, they should keep in mind the full range of services required. These include enhanced public health capabilities (possibly in coordination with regional health science centers), health education, and health promotion designed to control stress. These are community-wide responses rather than actions individuals can take alone. In times of crisis, rural communities know how to pull together, and this is the time to dust off those skills.

INTERVIEW WITH KAREN MADDEN

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Managing Editor
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INTERVIEW

Karen A. Madden is the Director of the New York State (NYS) Office of Rural Health. Ms. Madden has been with the Office for seven years. Prior to being named Director, she held increasingly responsible positions within the Office, most recently serving as Project Director of the NYS Rural Hospital Flexibility Program. Ms. Madden has expertise in health policy analysis, network development, and hospital conversion.

The Office of Rural Health is located in the NYS Department of Health and is responsible for developing, implementing, and monitoring policies designed to improve access to quality health care services for the residents of NYS's rural communities. The Office is staff to the NYS Rural Health Council and works collaboratively with stakeholders and experts in rural health care, particularly the NYS Legislative Commission on Rural Resources and the Healthcare Association of NYS.

Ms. Madden serves on the Board of Directors of the National Organization of State Offices of Rural Health, is the Vice-Chair of the National Rural Health Association's State Office Council, and on the Advisory Council of the NYS Area Health Education Center. She is also a member of the National Rural Health Resource Center, Advisory Committee for the Technical Assistance and Services Center of the Rural Hospital Flexibility Program.

Ms. Madden holds a Master of Arts in Public Policy from the University at Albany's Rockefeller College of Public Affairs and a Bachelor of Arts in Political Science from the State University of New York College at Oswego.

LP: What are the difficulties in maintaining your rural health networks, and how successful has their participation been?

KM: The single largest difficulty is helping them to become self-sustainable or at least not so dependant on the funding that comes from our program. The difficulty in relying solely or mostly on our funding is that when the funding is delayed, many of them have no other means to support their programs or operations. So not only do they have the problem of being able to pay their staffs, they also have the problem of not being able to do what they're meant to do and provide the services that they provide. That's troubling to us because they have successful programs that are sometimes interrupted.

On a network specific level each network has its own difficulties, and we expect that, because it's pretty much due to the nature of what they're trying to do, which is to get healthcare providers to collaborate in an environment that is becoming increasingly competitive with fewer available resources. And here we are asking them to all get together to collaborate to provide services for their communities and yet when they walk away from their network meetings they all become competitive again. So, it's very difficult for them. I hope and I think that

they've been fairly successful. We try when we fund the programs to help them choose programs that enhance access to services in their communities and will benefit their members. In terms of completing the work plans that they have, they've been mostly successful across the board.

LP: If you had to pick a specific priority addressed by Network Initiatives, which is the most important priority and why?

KM: From my perspective, the most important priority is to provide hands-on access to quality services. That can be pretty far-reaching, but to me it's the most important part of what we do. Access to quality health care services is something that all people should have. Also, just because people live in rural communities doesn't mean they should be denied that access. So, when I talk about networks and when we provide assistance to them and review their proposals, that's always in the forefront of my mind.

LP: It seems that most everyone will openly admit that access to quality health care in rural communities is a real problem and that something needs to be done about it. So, my next question is perfect given what you've just said, because recognizing the problem is the first step, but everyone has a different viewpoint on how we can fix the problem. Tell me a little bit about the steps that your office is taking to address this?

KM: Our program is interesting, because we have never really told networks what they have to do. The program is

outlined in statute and there are guidelines that we follow. However, those objectives are pretty broad. We then take those objectives and set up a program around them and those are the guidelines in which networks operate. But we've never tried to be really strict with the networks, because they are the people in their communities who know what their problems are. They know what their communities need in terms of health care, because they are the health care providers and consumers. So, we've never tried to tell them exactly what to do, because I think it would be inappropriate of us to tell them what their own needs are and how they should be addressing them. So, in their proposals they will demonstrate a need to us and they'll show us how they want to address that and we'll help them a little bit with that, but we've never exactly told them.

In terms of enhancing access for people, we have all types of different projects that we've funded. A couple of networks are addressing public transportation issues, for example, because there is just no public transportation in rural areas. I think that's true across the country and it's also true in New York. We have a number of networks that have dental programs in schools where they're working with their local schools to teach children preventive measures and, in many cases, this is the first introduction that the children have to dental care. We have some that have actually established dental services for Medicaid patients and the uninsured in places where there weren't any services before that.

I guess I'm just trying to give you an idea of the range of activities that we see networks doing to provide access. But like I said, we don't go into a community and say, 'We see that you have a problem in providing primary care, so this is what we think you should do.' It's never been that way, because I think particularly with rural people, they are used to doing things on their own. We just try to provide some resources and some technical assistance for them to address their needs.

LP: At the heart of your mission statement is the idea that rural residents deserve access to quality health care. Last year 53 rural hospitals in New York received funding under the HRCA 2000 program. What's the main benefit derived from the funding?

KM: We have quite a few programs that increased the quality of services, which is also important, because we don't think it is good enough just to have the service. We think that rural people should be able to have access to quality service that is as good as people in urban areas.

In a lot of cases, we offered funding that really enhanced the quality of services and that can be in replacing old equipment or in renovations to old hospitals. A lot of the hospitals were built in the 1950's and they're just old and outdated and we have funded many projects to renovate those facilities. One hospital renovated their maternity ward and developed a completely new comprehensive women's health service that had not been developed in that area.

LP: That's wonderful to hear. That must be rewarding.

KM: Yes. Really when you look at it, and we've discussed this in our staff meetings and when we review proposals, we're not just looking at the services per se, but we really want that quality to be attached to it. A lot of rural hospitals have very old computers systems and a lot of them come to us and want funding for management information systems, which can be a big black hole, because once you start down that road you can just keep pouring money into it and never be done. So, when they come to us and they have these huge proposals, we can probably fund a part of the system that they want to have ultimately in their hospital. But when we do that, we try to help them choose the part of the system that will help them the most to become more efficient. One good example of that is a computer system that was installed in an emergency department that has decreased waiting times for people in the emergency room by a third to a half.

LP: How difficult is it for some of the rural hospitals to get funding? Where are the dollars generally given? In other words, is it easier to get funding in one area than another?

KM: That's actually been a good thing about the program that we have for the hospitals; all rural hospitals will receive funding to increase their viability or enhance their services and their efficiency—whatever they needed.

Many proposals were submitted for computer systems and it is really difficult to judge one hospital's need for a computer system over another's. That was really, really tough. So, what we ended up doing for those hospitals that requested computer systems was to try to pick out one part of the total proposal that we thought would help them the most and fund that part. But it's really tough.

LP: Yes, it is and I really sympathize with you on that. And I know, for example, here in Texas, as a result of funding and other issues, some hospitals have considered converting their hospital to a Critical Access Hospital (CAH). Are many rural hospitals in New York faced with that same decision and are they actually converting or are they resisting?

KM: We currently have a total of 7 CAHs. That's not a lot compared to some other states, particularly those in the Midwest but there has not been as much interest as we anticipated. I think that a lot of that is based on the perception that the conversion is the first step to closing the hospital, which is completely untrue, of course. We know that's not true and we're slowly but surely convincing people of that. The Rural Hospital Flexibility Program is a great program that has helped many hospitals and communities maintain access in New York and across the country.

LP: How do you think rural hospitals in New York differ from rural hospitals in Texas?

KM: The biggest difference is geography; the distances in Texas are far greater and the hospitals are more remote and serve much bigger areas than the rural hospitals in New York. We have seen, and we've actually funded, a couple of different hospitals in one county or a neighboring county networking together for projects such as joint purchasing or becoming part of a larger computer network together so that they can have access to the same types of data. The greater distances in Texas would make that harder, but still possible. Also, hospitals in Texas are faced with much more difficulty with regard to their emergency systems and EMS, because of the greater distances. This is probably also true with the transporting of patients to larger facilities. There are, however, probably more similarities between rural hospitals in both states because of the difficult financial situation in which rural hospitals operate.

LP: Has the recent attack in the city of New York, in your opinion, affected rural health care in the state of New York? Is the need for psychological counseling in rural communities up, for example?

KM: I've been thinking about that a lot and aside from the obvious of rural people having family and friends that were actually in the city and directly effected by what happened, we're just beginning to see some of the indirect effects such as the need for psychological counseling for those people as well as for people who didn't necessarily know any of the victims. I was reading about that recently and learned that you don't really see the need for that until at least four weeks after the initial tragedy. I

think we are just beginning to see a need for that and that need will increase over time.

I'm also hearing stories here and there about how people are being effected. For example, in Sullivan County, we have people who telecommute with organizations in New York City. A couple of weeks ago I was meeting with a network and they were talking about all the different relief efforts that are going on right now. They spoke of someone who lives in Sullivan County who is a consultant and telecommutes and has many contracts with clients who had offices in the World Trade Center. As soon as everything happened, her work pretty much stopped, as did her receiving any funding from her clients. Consequently, it has been about a month since she has received any money and she doesn't know how long this will continue, because who knows what will happen with a lot of those businesses. So, for someone like that, the effect is not as indirect as you might think even though she lives in a very rural county. In this day and age, a lot of people can telecommute and can easily be effected like she was.

Also, someone mentioned that she could probably receive help under the crime victims funding that's available; the FBI has it and the state also has a crime victim's board and they're providing funding for people that have been effected like that. And as I was listening to them talk about the various places she could go, I thought that there seems to be a lot of help available, but I don't really know if everyone knows where to go to find it.

INTERVIEW WITH KAREN MADDEN

So, I think that we will begin to hear more and more about people who are effected as time goes on. Also, you asked about a rise in psychological counseling and my fear is that a pretty big gap exists in that area in rural communities. I'm afraid that when they do discover that they need help (even if they know who to ask) that they won't be able to get it.

COMMUNITY PERINATAL NEEDS ASSESSMENT FOR THE NORTHWEST REGION OF TEXAS

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NOTES FROM THE FIELD

ABSTRACT

In the spring of 2000, the Department of Health Services Research and Management in the Texas Tech School of Medicine conducted a perinatal needs assessment to guide resource allocation and educational efforts. The purposes of the needs assessment were to:

1. Describe the geographic area in terms of economy, demography, and the population of women giving birth;
2. Describe and analyze key indicators of perinatal health for the region;
3. Describe the availability of perinatal health services; and
4. Develop policy recommendations.

Key words: birth outcomes, prenatal care, rural health care. (*Texas Journal of Rural Health* 2001; 19(4): 9-21)

INTRODUCTION

A broad overview of perinatal health-related facts in the Panhandle area is reflected in Table 1. The information in Table 1 compares the state public health regions to the state average on selected indicators. Region 1 is the northern-most part of the state. Region 2 is just to the south and east

of Region 1. Region 9 is just to the south and west. All of Region 1 is in the area we chose to study as is most of Region 9 and half of Region 2.

All three of the public health regions have lower unemployment rates than the state as a whole. The percentages of live births to teens (aged 15 to 17) are substantially higher than the state average. Low birth weight deliveries and inadequate prenatal care are more common than the state average in Regions 1 and 9, though the state average is higher than Region 2. Except for chlamydia in Regions 1 and 9, sexually transmitted diseases are less common in this area than elsewhere in the state of Texas. Infant and fetal deaths, however, are more common in these three areas than in the state as a whole. The availability of physicians is worse in Regions 2 and 9 than for the state as a whole. Note that prenatal care utilization does not seem to be affected very much. However, direct care physicians, generalist physicians, and OB-GYNs are more available in Region 1, where the Texas Tech School of Medicine and the Covenant Health Care System are located, than elsewhere in the state.

These summary indicators suggest that the health care system serving this region has failed to perform as well as the rest of Texas in regard to prenatal care, low birth weight, and infant mortality. Given the rural nature of the area, the proportion of working poor residents, the shortage of physicians, and the high teen birth rate, weak performance on perinatal care is not surprising. However, the medical resources available in the Texas Tech system clearly contain the potential for addressing some of the access problems in the northwest region.

In the following report we first review the demographic risk factors known to be associated with birth outcomes. These include:

- Race and ethnicity – White mothers are more likely than Hispanic mothers or Black mothers to begin prenatal care in the first trimester. These differences probably are due to socioeconomic factors such as income, education, and access to health care.
- Age – Adolescent mothers are at risk for obtaining late or no prenatal care.
- Education – Having less than a high school education is associated with late prenatal care.
- Marital status – Unmarried women are less likely than married mothers to have adequate prenatal care and are more likely to be poor.
- Poverty – Low income is one of the strongest predictors of insufficient prenatal care and a higher risk of poor birth outcomes even with adequate prenatal care.
- Geographic location – inner cities and isolated rural areas often are associated with inadequate prenatal care (Kieley & Kogan, 1994), concentrations of poverty, and lower educational levels.

After reviewing the demographic data, including birth outcomes, we will examine perinatal indicators relating to prenatal care and insurance coverage. Prenatal care is important to birth outcomes and, thus, is a focus of perinatal needs assessments. The proportion of women who begin prenatal care late is greater in the United States than in Denmark, Belgium, and France (Kiely & Kogan, 1994). This is true in all age groups and education levels and probably is due to universal health insurance coverage and financial incentives in Denmark, Belgium, and France.

Table 1. Selected Health Facts for Regions 1, 2, and 9 and Texas 1997

	Region			
	1	2	9	State
Unemployment Rate	4.4	4.5	4.7	5.4
Adolescent Mothers ¹	8.6	8.9	9.2	6.7
Low Birth Weight ²	9.0	6.2	8.2	7.3
Late/No Prenatal Care ³	23.3	20.6	25.2	21.5
Fertility Rate ⁴	69.9	64.3	70.5	74.9
Sexually Transmitted Diseases ⁵				
Syphilis	0	0	0	3.5
Gonorrhea	123.2	91.0	77.4	136.9
Chlamydia	327.4	195.7	292.8	260.7
Infant Deaths ⁶	8.3	7.1	10.0	6.4
Fetal Deaths ⁷	6.5	7.1	7.2	5.9
Population Per				
Direct Care MD	667	857	878	699
GP or FP	2950	3182	4538	3892
Females 14/55 Per				
OB-GYN	2410	3454	2569	2384

¹ Percent of live births to mothers ages 13 to 17.

² Percent of live-born infants weighing less than 2,500 grams at birth.

³ Late prenatal care refers to the percent of mothers with live births who did not receive prenatal care during the first trimester of pregnancy.

⁴ Live births per 1000 women ages 15 to 44.

⁵ Number of cases per 100,000 population.

⁶ Per 1000 live births.

⁷ Per 1000 live births.

Source: Health Facts for Texas and Public Health Regions, 1997.

After reviewing perinatal indicators, we will examine the array of health services available to meet perinatal care needs in the region. Next, a brief review of the research literature addressing organizational factors affecting prenatal system performance will be offered. Finally, we will offer recommendations for improving the care delivery system so as to decrease the incidence of adverse birth outcomes.

DESCRIPTION OF THE REGION

The area covered by the needs assessment encompasses 88 counties (see Figures 1a and 1b). This part of Texas is known as the South Plains. It is dryer and of higher altitude than southern Texas. The economy is largely agricultural. However, the urban economies in the region also include service industries and educational institutions.

County populations in the area range from under 5000 to 227,000. Within just a few miles a person can drive from a mid-sized city to a very sparsely populated area. Anglos (non-Hispanic Whites) comprise the largest group in the area, with county populations ranging from under 4,000 up to 141,000. Hispanics are the second largest group, with as many as 63,400 Hispanic persons residing in one county. The Black population ranges from under 200 in some counties to 17,400.

In order to examine variation across the region, adjacent counties were combined to form 11 areas. Where possible, rural counties were combined with other rural counties so as to permit making urban-rural contrasts. Counties were added together until the number of infant deaths reached a minimum of ten for 1998.

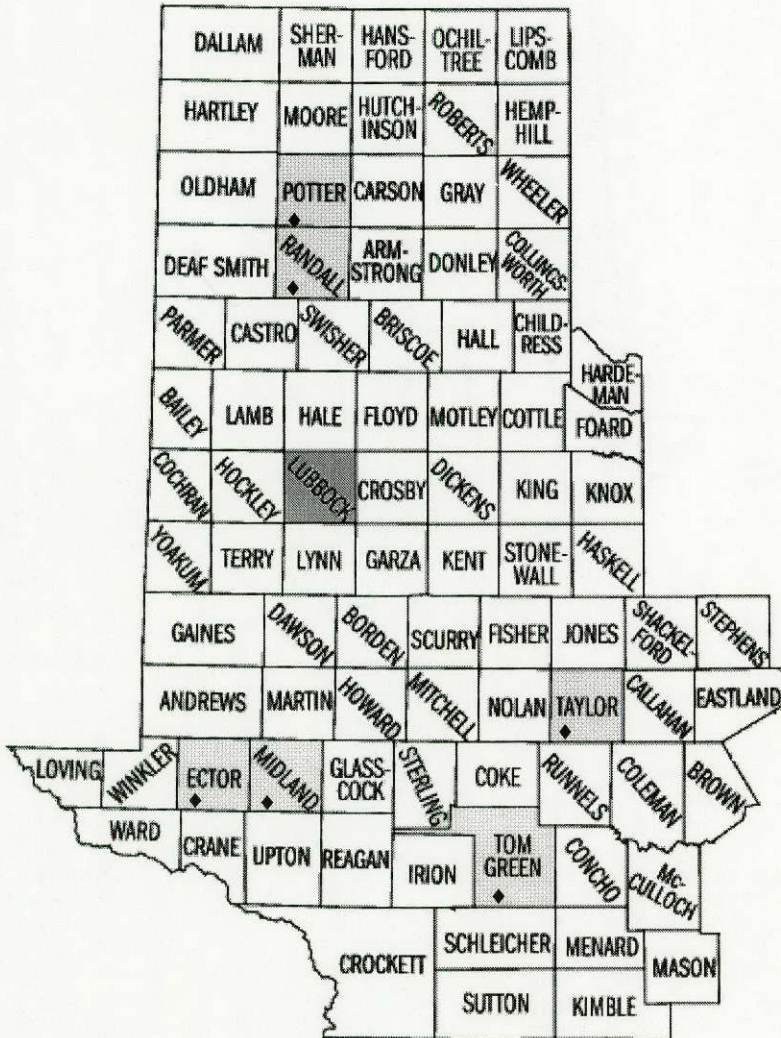
Unemployment rates varied dramatically among the 11 areas in 1998. Area A, which is in the northwest part of the region and includes Amarillo, had an unemployment rate of only 3.7% in 1998. In contrast, Area H (Odessa) had an unemployment rate of 6.7%. Area H is in the southwestern portion of the region adjacent to the New Mexico border. In short, the economic barriers to prenatal care that accompany unemployment are much greater in some parts of the region than in others. In addition, as poverty rates are high in areas with high unemployment, it can be assumed that many working people are in low paid, part time, or seasonal jobs.

The percentage of the population living below the poverty level in 1999 ranged from about 5% to over 25%. The percentage of children under age 18 who were below the poverty level was larger, ranging from about 12% to about 42%. In some cases counties with high percentages of children in poverty are immediately adjacent to counties with low percentages. In general, however, the northern part of the region has a cluster of low poverty counties, the central part of the region is a cluster of high-poverty counties, and the southern third is more mixed.

When the total population living in poverty is broken down demographically, we learn that the poor population is ethnically diverse: 21% are Black, 53% are Hispanic, and 26% are Anglo or other. At the same time, the risk of being in poverty varies greatly among the three ethnic groups. Only 8% of the Anglo/other category is in poverty, compared to 26% of Black persons and 28% of Hispanic persons.

Poverty can also be measured by the percentage of the population receiving public

Figure 1a. Northwest Region Population Distribution

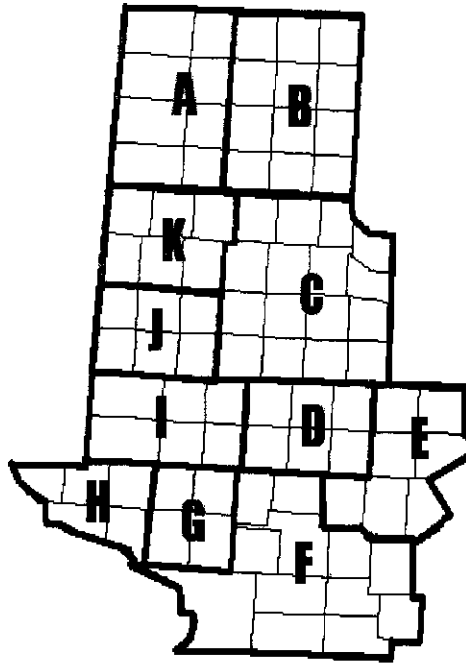


Total Population Distribution

- : 152,000 to 227,000 (1)
- ◆ : 76,000 to 151,999 (6)
- : 0 to 75,999 (81)

Source: Texas State Data Center, 1999.

Figure 1b. Northwest Region Population Distribution



AREA A

Dallam
Deaf Smith
Hartley
Moore
Oldham
Potter
Randall
Sherman

AREA B

Armstrong
Carson
Collingsworth
Donley
Gray
Hansford
Hemphill
Hutchinson
Lipscomb
Ochiltree
Roberts
Wheeler

AREA C

Briscoe
Childress
Cottle
Crosby
Dickens
Floyd
Foard
Garza
Hall
Hardeman
Haskell
Kent
King
Knox
Motley
Stonewall

AREA D

Fisher
Jones
Mitchell
Nolan
Scurry
Taylor

AREA E

Brown
Callahan
Coleman
Eastland
Runnels
Shackelford
Stephens

AREA F

Coke
Concho
Crockett
Irion
Kimble
Mason
McCulloch
Menard
Schleicher
Sterling
Sutton
Tom Green

AREA G

Glasscock
Midland
Reagan
Upton

AREA H

Crane
Ector
Loving
Ward
Winkler

AREA I

Andrews
Borden
Dawson
Gaines
Howard
Martin

AREA J

Cochran
Hockley
Lubbock
Lynn
Terry
Yoakum

AREA K

Bailey
Castro
Hale
Lamb
Parmer
Swisher

assistance. The percentage of the population receiving food stamps ranges from six (Area B) to 11.5 (Area C). Areas B and C are both rural and they are immediately adjacent to each other. In three of the areas in this region more than 10% of the population is receiving food stamps: C (east of Lubbock), H (Odessa), and K (Plainview). The percentage of the population receiving aid for needy families is also highest in these three areas.

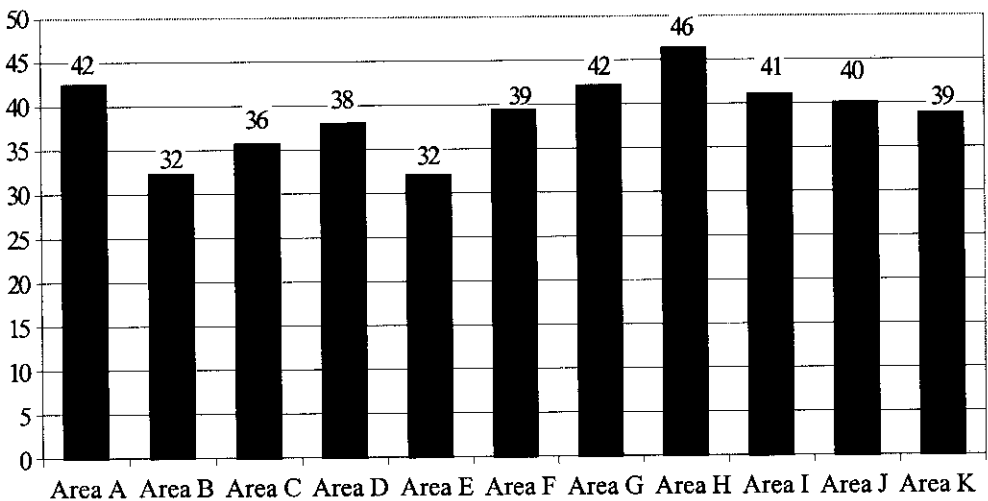
Personal income per capita is another way of looking at wealth and poverty in a population. Per capita income was around \$20,000 in 1997 in the Northwest Region. Interestingly, in Area G (Midland) per capita income was over \$29,000 while in Area H (Odessa), immediately adjacent to Area G, per capita income was only \$18,000. However, this degree of variability is unusual in the Northwest Region where most counties have incomes between \$15,000 and \$22,000.

The pregnancy rate is measured as the number of pregnancies per 1,000 women of childbearing age (aged 15 to 44) for a particular year. This rate varies from a low of 73 per thousand (Area F—Tom Green) to a high of 90 per thousand (Area K—Plainview).

Birth rates range from as low as 61 per 1,000 women aged 15 to 44 (Area G—Midland) to 84 per thousand in Area K-Plainview.

Teen pregnancy rates, measured as pregnancies per 1,000 women aged 13 to 17, are shown in Figure 2. Five areas have rates that are at least 40 per thousand: Area I—North of Midland (41/1000), Area G—Midland (42/1000), Area H—Odessa (46/1000), Area A—Amarillo (42/1000), and Area J—Lubbock (40/1000). All are on the western side of the region. All are near cities and, thus, are less rural in nature. Teen birth rates range from 28 per thousand (Area B) to 40 per thousand (Area H). Area H is on the southwest side of

Figure 2. Pregnancy Rate Per 1000 Women Age 13 to 17



Source: Texas Department of Health, Bureau of Vital Statistics, 1998.

the region and includes Odessa, while Area B is on the northeast corner and includes no large urban areas.

In most of the areas in this region, less than one-third of the births are to unmarried mothers. Areas H (Odessa) and F (Tom Green) are higher, with 39.1% and 34.1% percent, respectively. This indicator is important because of its association with low income and lack of social support, both of which can adversely affect infants.

PERINATAL INDICATORS

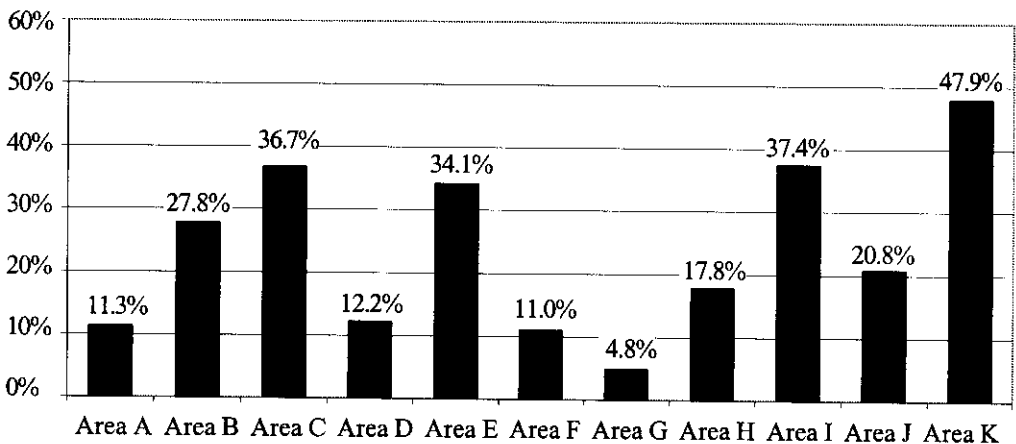
Preconceptional health indicators constitute a gap in the available needs assessment information. The extent to which mothers smoked cigarettes, had access to family planning, had adequate nutrition and were at an appropriate weight, had pre-existing conditions, or sexually transmitted diseases before becoming pregnant is unknown. Birth certificate data, if it were conveniently

available, would answer some questions, but not all. Surveys of mothers may be needed to fill this information gap.

The problem of inadequate prenatal care is pervasive throughout the region, though it may be less of a concern in the rural counties on the eastern side and in the north. Having good health insurance facilitates prenatal care. Therefore, it is not surprising that many of the counties that have poor prenatal care percentages also have poor insurance coverage percentages. However, the correspondence is not perfect. For example, Area A, which is a rural area in the northwestern part of the region, has low levels of uninsurance but high levels of inadequate prenatal care. Clearly, a high level of insurance coverage in a county is not sufficient to assure access to care for all expectant mothers.

Infant mortality, measured as the number of deaths to live born infants, divided by the total number of live births, multiplied by 1,000, is a common indicator of infant health. Cause-

Figure 3. Percentage of the Population in a Health-Professional Shortage (Primary Care)



Source: Texas Department of Health, Office of Policy and Planning, 2000.

specific infant mortality rates can be computed for conditions such as congenital anomalies (birth defects), low birth weight/prematurity, SIDS, and Respiratory Distress Syndrome. However, the number of deaths in a single year may be very small. The infant mortality rate is more practical as a needs assessment tool because it aggregates infant deaths from all causes and, thus, forms a larger number and more stable rates. However, an examination of leading causes and available prevention strategies would be necessary to attempt to decrease these rates. Even so, the rates for individual counties would be unstable because there are so few deaths. So, we chose to analyze infant mortality by area. Areas in the southeastern portion of the region and on the western side had the highest infant mortality rates in 1998. Area E, which is a rural region, had the highest rate at 12.7 deaths per thousand live births. Areas A (Amarillo), J (Lubbock), and K (Plainview) came in second, third and fourth at 9.4, 8.3, and 7.7, respectively.

Birth weight is another good indicator of infant health. Over 8% of total live births were low birth weight (weighing less than five and one half pounds, or 2,500 grams) in 1998 in Areas A, D, H, I, J, and K. Areas A, H, I, J, and K form a north-south column on the western side of the region. Areas A, J and K encompass the Lubbock-Amarillo corridor while H includes Odessa.

MATERNAL/INFANT HEALTH SERVICES PROVIDERS

Adequate prenatal care depends on the availability of physicians, use of certified nurse midwives, motivation of the client, and accessibility and affordability of clinical services. Physician availability is not equal throughout the region. Some parts of the region have been officially designated as

Health Professional Shortage Areas (HPSAs) for primary care. The Texas Department of Health reports the percentage of each county's population that is under-served. When their county rates are aggregated into our areas, regional variations can be examined (see Figure 3). In short, pockets of shortage can be found in the region even though some other areas are under-served. In Area K for example, which is located between Amarillo and Lubbock, almost half the population is under-served. Area I, which is between Lubbock and Odessa, is next highest with 37.4%. And Area C, which is east of Lubbock, is third highest with 36.7%.

Another way to approach the issue of physician availability is to examine the number of Medicaid eligibles per Medicaid physician (see Figure 4). This indicator agrees with the HPSA designations, revealing Area K (Plainview) to be lowest in physician availability, followed by Area E, which is near Abilene. However, Area C (a rural area east of Plainview), comes in third worst with 296 Medicaid eligibles per physician.

Obstetrics-gynecology specialists are much less available than primary care physicians. Area C has over 11,000 women of childbearing age per OB-GYN physician. Area J, Lubbock, has one-tenth as many women per OB-GYN. This is because Lubbock serves women from surrounding areas. Similarly, Area A, which includes Amarillo, has about 1,800 women per OB-GYN, and supports Area B immediately to the east, which has over 19,000 women per OB-GYN.

According to the Texas Department of Health, Public Health Region 1 provided prenatal and postpartum care to 4,223 women in 1997. Community health centers, which are subsidized by the federal government, can be found in Levelland, Plainview, Amarillo, and Lubbock. Lubbock has four sites. In Public Health Region 9, four maternal and child

health clinics operated by the state government can be found. In short, a set of subsidized prenatal care providers is dispersed throughout the region. However, they are only loosely linked with obstetricians and with each other.

The Texas Birth Defects Monitoring Division, Public Health Regions 1, 9, and 10, engaged in surveillance, cluster investigation, research, and prevention services in 1999. Prevention activities included dissemination of information at health fairs and to various community groups and health care organizations.

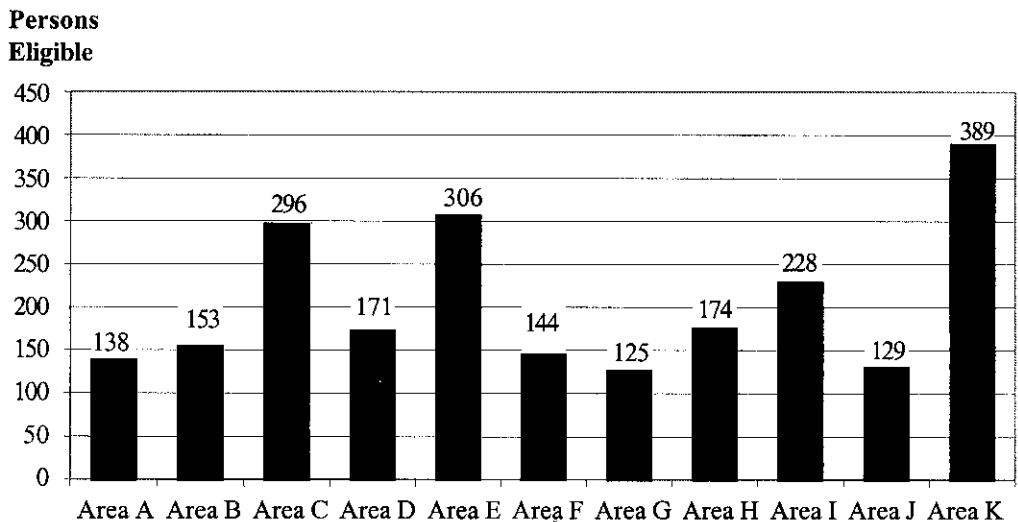
HIGH-RISK PROGRAMS

De facto regionalization of perinatal care has occurred because of the concentration of medical resources in Lubbock. However, a

fully developed regionalized perinatal care system does not exist in this region. A demonstration project in rural North Carolina showed that such a system might have some positive results (Siegel et al., 1985). The North Carolina project sought to:

- Identify high-risk pregnancies and high-risk newborns;
- Provide obstetrical and neonatal consultation and referral services to and from Level II or Level III centers;
- Provide transportation for mothers and newborns if needed;
- Provide continuing education for physicians, nurses, and other health professionals; and
- Provide consultations from nutritionists, social workers, and other health providers.

Figure 4. Medicaid Eligibles Per Medicaid Physician



Source: Texas Department of Policy and Planning, 1997.

These services were provided to five rural counties that were within a 2½-hour drive to Duke University and the University of North Carolina. According to the investigators, the development of high-risk clinics proved to be especially beneficial.

The Robert Wood Johnson Foundation funded a series of ten Rural Infant Care Programs designed to reduce infant mortality (Gortmaker et al., 1987). None of the funding was used to pay for primary care, because the projects were intended to work with existing primary care providers. Instead, most of the money went toward the salaries of specialized outreach personnel. About one-fourth was used for faculty salaries at the universities that were awarded the grants. Evaluators concluded that death rates were reduced, primarily among low birth weight infants.

PRIMARY CARE CASE MANAGEMENT

Investigators in Rhode Island evaluated the impact of a Medicaid managed care program on the adequacy of prenatal care (Griffin et al., 1999). In contrast to some other Medicaid case management experiments, the Rhode Island project seemed to be effective. The investigators concluded that a key element in the success of the program was the shift to capitation payment. Under the traditional system, Medicaid beneficiaries must search out providers who accept Medicaid. Under the new system, providers were contracted to provide a complete set of services for an all-inclusive fee (capitation). Beneficiaries were given a choice of five health plans. The health plans were then required to assure that each program participant had a primary care physician who coordinated all the member's health care.

In contrast to Rhode Island, a primary care case management program set up by Iowa's

Medicaid program produced adequate prenatal care *less* often than the traditional program (Schulman, Sheriff, & Momany, 1997). Gestational age and birth weight were not affected by the program.

A California study compared a capitated primary care case management program for Medicaid (Medicaid) enrollees to traditional fee-for-service and found that the capitated program appeared to reduce the risk of low birth weight. Services were delivered through a primary care case management system in a county-organized health plan. Adverse pregnancy outcomes other than low birth weight were not affected by the program (Oleske et al., 1998).

These three studies provide contradictory evidence on the effectiveness of primary care case management programs for pregnant women. At most, we can conclude that primary care case management can be cost-effective, but results in any given locale are problematic so close monitoring of new programs would be an important requirement.

CLINIC ENVIRONMENTS

The clinic environment can pose as much of a barrier to the use of prenatal care as the availability of insurance, the type of insurance, and the attitudes of expectant mothers. Furthermore, the type of clinic and the way it operates can affect the cost of care and, thus, the number of patients who can receive services. A 1998 study of African-American and Mexican-American adult pregnant women in Chicago asked them about satisfaction with prenatal care (Handler et al., 1998). The investigators reported that satisfaction was greater when procedures were explained by the provider, when waiting times in the clinic were short, when ancillary services (e.g., nutrition, social services) were available, and when the prenatal care practitioner was male.

Whether the provider explained procedures was the most important determinant of satisfaction for both African-American and Mexican-American women.

An earlier study examined the outcomes and costs of a community prenatal care clinic in comparison to a university-based clinic (Kay et al., 1991). The investigators found the outcomes to be comparable for cases at the same level of risk, yet costs were 41% lower in the community clinic. This study demonstrates that community clinics can provide prenatal care that is comparable in effectiveness to that delivered in an academic medical center. Furthermore, the staffing of a prenatal care clinic can be flexible. When a clinical nurse specialist clinic was compared to physician clinics for low-risk prenatal care, investigators at the University of Texas-San Antonio found that the clinic staffed by clinical nurse specialists had the same neonatal outcomes as a physician clinic, better client satisfaction, and the lowest cost per visit (Graveley & Littlefield, 1992). Physicians were available for consultation in the nurse specialist clinic.

RECOMMENDATIONS

The needs assessment data presented above reveal that aggregate demographic and risk factor data are of limited usefulness in predicting infant mortality rates and rates of low birth weight deliveries. Information directly pertaining to mothers might be of greater usefulness in locating the underlying causes of low birth weight and mortality in this region. For example, what is the relative importance of access to medical care and unhealthy lifestyles? Knowing the major causes in this area would aid in design of effective prevention programs.

Despite the uncertainties about risk factors, it is clear that the risk of adverse birth outcomes is greater in some areas in the state than others. This information could be useful in targeting prevention programs where they may have the greatest impact.

Specific recommendations are as follows:

1. Target areas with the highest infant mortality rates for prevention programs. Targeting permits funders to get maximum benefit from limited resources. Specifically, Areas A (Amarillo), J (Lubbock), K (Plainview), and E (near Abilene) need assistance to improve their infant mortality rates. Area H (Odessa) should be included as well because of its high rate of low birth weight babies.
2. Increase the accessibility of community health center clinics in the targeted areas. This would have the effect of increasing the number of low-income mothers who receive prenatal care. Convenient office hours, assistance with transportation, and outreach are examples of three ways that access could be increased.
3. Establish referral relationships between community health center clinics throughout the region and the OB-GYN departments at the Texas Tech School of Medicine for high-risk cases. The OB-GYN departments offer centralized nutritionists, social workers, and case managers and, thus, are uniquely qualified to treat high-risk pregnancies. A large proportion of their patient volume consists of such cases. However, earlier contact with patients would reduce risk and improve outcomes.
4. Expand case management services for high-risk cases. Included in this

program would be consultation from specialized nurses and social workers as well as physicians. Case management programs for high-risk pregnancies have been shown to be effective in some places. Therefore, there is reason to suspect that such programs could be effective in this region.

5. Conduct surveys of new mothers to establish prevalence rates for high-risk behaviors and clarify the determinants of poor birth outcomes in the region. Publicly available data regarding smoking, substance abuse, and nutrition are extremely limited. Even when information is available at the county level, it may not apply to the pregnant women in the county. Therefore, the potential for reaching incorrect conclusions about risk factors is great. Fortunately, surveys of new mothers are feasible and would fill this gap.

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ENVIRONMENTAL POLLUTION IN THE *COLONIAS* OF THE TEXAS-MEXICO BORDER: ITS POTENTIAL EFFECT ON HEALTH

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ABSTRACT

The *colonias* are substandard housing developments located on the outskirts of cities along the Texas–Mexico border. There are several environmental factors that result in increased health risks among the individuals who live in these communities. Shortages of potable water and appropriate sewerage capabilities have been long associated with a number of infectious diseases among *colonias* residents. Recent efforts to bring water and sewerage to the *colonias* promise to reduce these risks, but potential exposure to toxic chemicals in surface water and in polluted air also poses potential health risks. Use of contaminated home products and building materials as well as occupational exposures have also been documented, confirming the need for identification and remediation of these health hazards.

Key words: border health, *colonias*, pollution, Texas–Mexico border. (Texas Journal of Rural Health 2001; 19(4): 22-32)

INTRODUCTION

Substandard housing and unhealthy living conditions are common problems in large urban centers, especially in the central cities. However, along the United States–

Mexico border, there exists living conditions unique to the region and are tied directly to its rapid industrialization and population growth. Over the last three decades, squatters' camps have sprung up in the deserts and agricultural lands surrounding the major population centers of the border. These communities have come to be known as the "*colonias*" and are officially described by the United States General Accounting Office as "substandard housing subdivisions in rural districts consist[ing] of small plots of land with few or no roads and polluted water and inadequate sewage facilities (Jones, 1989)." The *colonias* have been a source of public health concern and political controversy for nearly three decades. The purposes of this article are to describe these communities and to identify the real and potential environmental hazards associated with these communities.

DESCRIPTION OF THE *COLONIAS*

Since the 1960's, developers have recognized the need for low cost housing in the rapidly growing urban centers of the United States–Mexico border. In the past, restrictive lending practices have led to the pattern of development of the *colonias*. Usually desert or farmland was selected where building regulations were loose or nonexistent and where development was not often apparent. Land was purchased at a large profit to the landowner and subdivided into small residential plots. These small plots were sold without improvements on a "Contract for Deed" basis. Little or no down payment requirements attracted low-income purchasers, but forfeiture clauses usually permitted the seller to recover the land and all improvements in the event of default. Water, sewerage, and electrical utilities as well as other improve-

ments were not provided in the terms of the sale. These conditions favored the development of communities of substandard houses without appropriate sanitary facilities. During the last three sessions, the Texas state legislature has passed a series of statutes that have substantially restricted sales of undeveloped land and of unregulated construction. Although these actions have slowed the development of the *colonias*, they have not prevented new *colonias* from arising, nor have they remedied the conditions in existing *colonias*. Reliable counts of *colonias* and *colonias* residents do not exist, but some of the best estimates indicate that in Texas there are more than 1,500 *colonias* and 350,000 *colonias* residents along the Texas–Mexico border (see Table 1).

COMMUNITY ISSUES

Ground Water

By definition, the *colonias* are communities without water and sewerage. Thus, the individual homeowners must make their own arrangements for these essential services. The arrangements depend upon local resources. In some communities, it is possible to drill water wells, while in others water from standpipes may be available or it may be necessary to purchase water brought in by truck. For those communities close to major water sources such as the Rio Grande, successful wells may be relatively shallow and thus, subject to surface contamination. The river itself is highly polluted. It is common for raw sewage to be dumped into the river from the Mexican side. For example, in Juárez, sewer lines exist in most buildings, but there is no sewage treatment plant for a city of over 1.2 million inhabitants. The sewage is taken by unlined canals into agricultural fields and ultimately

Table 1. Estimated Numbers of Colonias and Colonias Residents in Texas Border Counties

County	No. of Colonias	Population
Bee	4	1,269
Brooks	7	612
Cameron	112	38,839
Coryell	14	2,481
Dimmit	6	4,139
Duval	1	100
Edwards	1	1,321
El Paso	157	72,754
Frio	3	730
Hidalgo	868	124,010
Hudspeth	3	1,018
Jeff Davis	1	200
Jim Hogg	3	130
Jim Wells	16	5,576
Kinney	2	331
La Salle	6	505
Maverick	44	13,969
Newton	6	7,960
Pecos	5	1,450
Presidio	7	756
Red River	11	886
Reeves	2	540
Sabine	5	6,975
San Patricio	19	10,836
Starr	128	33,844
Terrell	1	1,000
Uvalde	9	2,246
Val Verde	11	3,467
Webb	43	16,353
Willacy	8	3,542
Zapata	7	3,734
Zavala	14	6,036
Total	1,524	367,609

Source: Ward, 1999.

drains into the Rio Grande (Cech & Essman, 1992). Coliform contamination in the Rio Grande at El Paso has been documented to be more than 250,000 organisms/100 ml (Mroz & Pillai, 1994), and the coliform contamination increases in the course of the river until it is greater than 800,000 organisms/100 ml at Brownsville-Matamoros (Cech & Essman, 1992). By comparison, public water supplies are considered contaminated and unsafe with coliform contamination above 4 organisms/100 ml.

In the *colonias*, the water contamination problem is compounded by the use of unregulated septic systems or raw sewage cisterns near domestic wells. In one study of *colonias* near El Paso-Juárez, water samples from 73 wells were analyzed for bacterial contamination (Mroz & Pillai, 1994). The average depth of these wells was 12.6 meters. Aerobic heterotrophic bacteria were found in 47 wells (64%), and fecal coliforms were found in 13 wells (18%). This substantial contamination of water sources in these riverside *colonias* is a major potential source for the transmission of human infectious diseases.

This concern for increased risk of water-borne diseases is borne out by studies of hepatitis A in children. Hepatitis A is a major health problem in countries with poor sanitation, and has also been identified as a problem along the Texas-Mexico border. In an effort to understand this regional increased prevalence, a study of sero-prevalence was conducted in three groups of children: those who lived in *colonias*, those who lived in urban communities along the border, and those who lived in a large urban center removed from the border. Comparable numbers of the children were Hispanic (89.5%), but they differed with respect to several factors including socioeconomic status, age of child and mother, household

size, and water supply. Serologic evidence for hepatitis A was greatest in the *colonia* residents (37%), intermediate in the border urban residents (17%) and lowest in the distant urban center (6%). Only in the *colonia* children did the incidence of infection increase with age. These data suggest that the *colonia* children are at a greater risk of developing hepatitis A, and that there is continued exposure to the underlying risk factor. This risk factor has been proposed to be the poor sanitation. That proposal is supported by the observation that the use of bottled water diminishes the risk (Leach, Koo, Hilsenbeck, & Jenson, 1999). Another study of hepatitis A in an El Paso *colonia* has identified several risk factors including increasing age, low maternal education, household crowding and inadequate sewage disposal (Redlinger, O'Rourke, & VanDerslice, 1997). Taken together, these studies provide strong evidence that the transmission of at least one fecal-oral pathogen is aggravated in the *colonias* as a direct result of inadequate water and sewage systems.

The purchase of water may not offer safety advantages. In some instances, the water sold is drawn from standpipes serviced by untested wells. Some of the transport trucks are not monitored, and the risk of contamination is high. Further, the storage of this water may be unsafe. In the past, many individuals stored their domestic water in salvaged industrial drums, some of which were shown to be contaminated with toxic chemicals (Jones, 1989). More recently, many *colonias* residents have changed to plastic storage containers. These appear to be a safer alternative, but there are still reports of contamination of bulk stored-water by toxicants including lead. Presumably the source of this lead contamination is lead-soldered household plumbing and storage

tank fittings (Peterson et al., 1994).

In recognition of these risks, at least two successful public health interventions have been developed. The first of these is “*Agua para beber*” (Water for drinking). This project was jointly funded by the United States Environmental Protection Agency and several private foundations, and it was developed by the Center for Environmental Resource Management (CERM) of the University of Texas at El Paso. It was first implemented in *colonias* in both El Paso and Juárez in 1994. Residents were provided a comprehensive program of health and hygiene education, techniques to assure a safe water supply with inexpensive materials, and safe storage containers. The program has had a positive effect on health practices and has been replicated in communities along the entire United States–Mexico border (Liebman, 1998).

The second development has come about after years of negotiation between local, state, and federal government agencies. In 1998, the United States Department of Housing and Urban Development (HUD) established funding for initiatives within the *colonias*. Border states, including Texas, were required to dedicate up to 10% of Community Development Block Fund Grant awards to meet the needs of the *colonias*. This policy led to the establishment of a comprehensive, state-sponsored program committed to getting water and sewerage to eligible *colonias*. Although this program has faced delays, lower than anticipated subscription, and public criticism, progress has been made in accomplishing the goals.

Surface Water

It is highly likely that the surface water in and around the *colonias* is highly contaminated. In many instances, surrounding fields

are heavily fertilized and treated. Irrigation canals often run through the settlements and may be used as surreptitious recreational waters for children and adolescents. It is also possible that these waters may recharge the aquifers that serve the shallow water wells in the community.

The Rio Grande, itself, may be of greater concern as a source of contaminated water. As described above, untreated wastewater is emptied into the river along much of its course. Coliform bacterial contamination has been well documented. The extent and nature of industrial chemical pollution has not been as well studied, although there is compelling evidence that industrial dumping is a common practice (Albrecht, 1993). In one study of drainage facilities in Reynosa and Matamoros, toxic effluents from industrial installations included xylene, ethylbenzene, methylene chloride, acetone, and toluene. Lead, cadmium, and chromium in levels exceeding EPA standards for drinking water were found in drainage ditches adjoining residential areas partially served by shallow water wells (Moure-Eraso, Wilcox, Punnett, Copeland, & Levenstein, 1994). Although such situations have not been documented on the Texas side of the border, the implications for river contamination are obvious. There has even been concern that there might be radioactive contamination from the nuclear industries and laboratories in northern New Mexico. Careful studies of radioactive contamination of river fish indicate that although radioactive substances can be identified, their levels are insufficient to present a health hazard (Fresquez, Kraig, Mullen, & Naranjo, 1999). Pollution of the river progresses during its course. This is documented by the increasing coliform contamination that is observed from El Paso to Laredo to Brownsville. River water serves as about 20% of the municipal water supply in El Paso, but in the Lower Valley it is

the only source. There is evidence that untreated river water as well as untreated irrigation water may be used by some *colonia* residents from El Paso to Brownsville (Cech & Essman, 1992).

Air

Air quality of the twin cities of the border is a concern of both the United States Environmental Protection Agency and its Mexican counterpart, Secretario de Desarrollo Urbano 4 Ecología (SEDUE). These twin cities include the urban centers of San Diego/Tijuana, Nogales/Nogales, El Paso/Ciudad Juárez, Laredo/Nuevo Laredo, McAllen/Reynosa, and Brownsville/Matamoros. A binational commission has been established to monitor air quality, and surveillance facilities have been established in all of the major urban centers. Although progress has been made in virtually all of these population centers toward achieving compliance with National Ambient Air Quality Standards, air quality remains a major environmental concern. The *colonias*, as outlying residential elements of these metropolitan areas, share in the problems associated with poor air quality, but they also have unique issues. In many of these communities, open air burning either is not regulated or the regulations are not enforced. Open-air burning of trash and garbage is a common practice. Many combustibles, including tires, may be burned as a source of home heat. Burning of some crop residues and trash, such as sugar cane and pecan tree trimmings, occurs at regular phases in the planting cycle. All of these practices may lead to increased particulates as well as to the release of combustion byproducts and toxicants such as benzene. There are few or no published data about the level of air contamination associated with these prac-

tices. In addition, the manner of aerial crop-dusting with pesticides, herbicides, and defoliants has the potential to degrade air quality. These potential hazards are described below.

Agricultural Chemicals

The *colonias* of Texas are located in some of the most agriculturally productive and diverse counties in the United States and where major crops include citrus, cotton, pecans, vegetables, sugar cane, milk, and beef. Moreover, the *colonias* are often established immediately adjacent to fields, dairies, and production facilities. Thus, exposure to agricultural chemicals seems likely to occur by multiple routes including air, water, soil, and fomites such as contaminated clothing and work implements. In Colorado and other sites, it has been found that all of these modes of dissemination lead to the contamination of homes of farmers and pesticide formulators (Alavanja et al., 1996). In Washington, household dust of houses located within 200 feet of orchards were found to be heavily contaminated with organophosphate insecticides (Simcox, Fenske, Wolz, Lee, & Kalman, 1995). It seems reasonable to assume that similar contaminations exist in the homes of the *colonias*. Because of such a broad range of agricultural products grown near the *colonias*, it is difficult to catalog the wide range of chemicals that might be used. However, it is clear that pesticides including organo-phosphates, herbicides, and defoliants are all in use. It is also clear that many of these products have not been adequately tested for their potential hazard (Mushak & Piver, 1992). The continued heavy use of pesticides in Mexico is another potential hazard that has not been well studied. Production of most persistent pesticides has

been restricted in Mexico since 1988, but exceptions can be authorized, and there is evidence that these chemicals can be identified in some crops that are not intended for export (Albert, 1996). Residues of aldrin, dieldrin, heptachlor, chlordane, and DDT have all been identified in agricultural drainage systems in northwest Mexico. Thus, the potential for contamination from the effluents of Mexican tributaries and other water sources exists for individuals and communities who are downstream.

Specific studies directed toward health risks in agricultural workers along the border have been relatively restricted. There are studies directed toward particular agents and occupational situations. The possibility that cotton defoliant might contribute to increased mortality was studied in the San Joaquin Valley of California (Ames & Gregson, 1995). Mortality was increased during the cotton harvest. It was also known that the defoliant released a noxious gas, butyl mercaptan. Mortality could not be correlated with the use of the defoliant, but rather appeared to be associated with suspended particulates. Similarly, exposure to pesticides by women in a Mexican-American rural population could not be demonstrated to be associated with adverse effects on reproduction and fetal development (Willis, dePeyster, Molgaard, Walker, & MacKendrick, 1993). In the border region of Texas, the observation of clusters of children born with neural tube defects (anencephaly, spina bifida, and related disorders) has raised a concern that environmental factors, perhaps associated with agricultural chemical exposures, may contribute to this increased incidence. Early studies indicate that nutritional supplementation with folic acid may prevent the abnormality. However, there remains sufficient concern for the involve-

ment of genetic or environmental factors, that the Texas Department of Health is continuing epidemiologic studies that include environmental and genetic variables (Hendricks, Larsen, & Suarez, 2000).

Building Materials

Houses within the *colonias* are built of whatever materials are available and affordable. Many *colonias* evolve from collections of shanties to more substantial brick houses as the economic fortunes of the inhabitants improve. Homes of cardboard and pallet construction are not uncommon. Use of salvaged building materials including old window frames and doors is ordinary. Thus, the potential for exposure risk to toxic products is very real. In particular, there is an unevaluated risk of exposure to lead and asbestos. In one study of the family and home of a lead-intoxicated child residing in a *colonia*, there were elevated lead levels in peeling paint from door frames and windows as well as in dust samples obtained from the kitchen floor (Alvarez-Amaya, Ackall, Pingitore, Quiroga, & Terrazas-Ponce, 1997). Other studies have documented the exposure risks of children to pollutants in house dust (Roberts & Dickey, 1995). Detailed studies of household exposure in the *colonias* are clearly indicated.

Household Goods

Ceramic products from Mexico, often fired at low temperatures and using glazes that leach lead, have been long known to provide a risk to individuals who use these products for culinary purposes. Many ceramics in the tourist trade bear warnings against their use in cooking. In spite of those warnings, it is likely that many individuals, especially those

who are recent immigrants, do not heed these warnings. Although it is acknowledged that contaminated ceramics are a potential source of lead poisoning in the *colonias* populations (Alvarez Amaya et al., 1997), there are no studies of the extent or consequences of this practice.

Herbs, Home Remedies, and Pharmaceuticals

The use of herbal remedies and patent medicines is common in the *colonias*, as it is within the entire region. Although there are no specific studies of practices within the *colonias*, it is likely that they are similar to those observed in similar settings. One study suggests that 44% of residents of the Lower Valley use some form of alternative therapy on a regular basis (Keegan, 1996). Herbal remedies as well as cosmetics and other salves and tonics are readily available in local herb stores and neighborhood shops in the community as well as from *yerberias* and open air vendors in the *mercados* across the river. In general, these products are untested and unregulated. Moreover, there are so many products available that it is virtually impossible to be aware of the ingredients and possible toxicants that are found in these products.

Recent reports of poisonings from such products include lead intoxication from traditional Mexican remedies (marketed under such names as Greta and Azarcon) used for digestive problems and shown to have as high as 90% content of lead. During 1991, the California Department of Health identified 40 children with blood levels equal to or greater than 20mg/dl. Of these, 36 had been treated with one or the other of the two Mexican remedies (Flattery et al., 1993). Mercury poisoning has been reported as a consequence of calomel-containing beauty creams

from Mexico (Villanacci et al., 1996) as well as from a homeopathic medication, Mercurius 6a, used for a long list of illnesses including diaper rash (Montoya-Cabrera, Rubio-Rodriguez, Velazquez-Gonzalez, & Montoya, 1991).

Obviously, a major public health intervention should be the education of *colonias* residents of the risks associated with proprietary preparations that are available from unreliable sources in Mexico.

A related problem is the ready availability of pharmaceutical agents in Mexico. *Colonias* residents often purchase medications in Mexico because of lower cost, ready availability, lack of third-party coverage for medications, language differences with providers, distrust of the United States medical system and other reasons. There is no reliable information about the relative purity and efficacy of these medications, but it is clear that they may be taken surreptitiously with the obvious potential of interfering with or potentiating medications prescribed by a United States physician or of being administered in a homeopathic or toxic dose. This phenomenon is well known by physicians who practice in the *colonias* and described in the literature (Casner & Guerra, 1992). The extent of the problem is unknown.

OCCUPATIONAL RISKS

Residents of the *colonias* are predominantly employed in three industries: agriculture, services, and *maquiladora* manufacturing. Within the *maquiladora* industry, the most important products are garment assembly, electronics, small appliances, and plastics. All of these industries are labor intensive, and the workers have the potential to be exposed to a number of chemicals during the manufac-

turing process. In the electronics industry alone, the list of materials used in production include solvents such as trichloroethylene, xylene and toluene; acids such as chromic, nitric, phosphoric and sulfuric; corrosive bases; reactive gases such as ammonia, diboric, chlorine and phosphoric; metals including antimony, lead, arsenic, beryllium and cadmium; as well as various resins and oxidants (Garza, 1996). Toxic exposures of workers have been documented (Moure-Eraso, Wilcox, Punnett, MacDonald, & Levenstein, 1997), but there is reason to believe that underreporting is common (Skolnick, 1995). Clearly, more information should be gathered on matters of occupational health within the maquiladoras.

SUMMARY

It is generally acknowledged that the residents of the border *colonias* live in extreme poverty within an environment that is highly polluted. There is convincing documentation of the serious pollution of air, water and soil of border communities, including the *colonias*. And yet there are relatively few published reports of the effects of this polluted environment on the residents of these communities. There is much written about the infectious diseases that are endemic within the *colonias*, including hepatitis A, *Helicobacter pylori*, and other infectious diseases of poverty. In contrast, we know very little about the relationships of air pollution and respiratory illnesses, occupational activities and chronic illnesses, and water quality and potential health risks. Further epidemiologic studies should be carried out to assess the impact of environmental exposures on a wide range of illnesses that include congenital abnormalities and

chronic neurological disorders.

Over the last several years, considerable progress has been made in bringing sources of clean water into the *colonias* and in dealing with the public health concerns associated with waste treatment and disposal. Nevertheless, many potential public health hazards remain. There are needs to understand the health implications of these hazards. Responsible agencies should develop and implement programs of public awareness to diminish risks associated with materials, foods, and remedies that may be brought from unreliable sources in Mexico, and corrective strategies should be designed. Clearly, more work needs to be done in the *colonias* to define better the environmental health care issues that face these needy communities and to take appropriate corrective action.

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TIDES OF RURAL HEALTH CARE SHIFTING: A PROMISE FOR A BRIGHT FUTURE

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■■■■■■ POLICY AND LAW

ABSTRACT

When Congress passed the Balanced Budget Act of 1997 (BBA), Medicare reimbursement for Texas rural/small hospitals was cut severely, so much so that the act spawned two other bills, the Balanced Budget Refinement Act of 1999 (BBRA) and the Benefits Improvement and Protection Act of 2001 (BIPA). The two sequela pieces of legislation were largely due to intensive grass roots lobbying efforts on the part of hospital and other health care providers, health-related associations, and other advocacy organizations as well as the formation of effective rural coalitions of elected officials on both the state and federal level.

However, the work has only just begun if we are to ensure preservation of the fragile safety net, which comprises our current rural health care delivery system. Workforce issues and reimbursement continue to be the major concerns for rural as well as other hospitals in Texas (Texas Hospital Association, 2001). Therefore, it is incumbent upon every one concerned about rural health care to continue to advocate strongly for continued legislative and regulatory reforms to address those vitally important issues.

Key words: Balanced Budget Act (BBA), BBRA, critical access hospitals, rural health legislation, rural hospitals. (Texas Journal of Rural Health 2001; 19(4): 33-41)

INTRODUCTION

The financial impact of the Balanced Budget Act of 1997 (BBA) on rural hospitals in Texas is described thoroughly in a previous *Texas Journal of Rural Health* article entitled Profitability of Rural Hospitals in Texas: Implications for Access to Charity Care (Sutton, Blanchfield, & Milet, 2001). The resulting and ongoing strain on rural hospital operations can be substantiated by feedback from over 225 hospital CEO visits conducted by the Texas Hospital Association's Office of Rural Health during the period of September 1, 2000 through July 20, 2001. During those visits, most rural hospital CEO's reported an increase in patient volumes, but a substantial decrease in cash receivables, due primarily to reimbursement rate reductions implemented by the BBA.

Likewise, it is not the intent of this article to review the provisions of the Benefits Improvement and Protection Act of 2000 (House of Congress, 2000). Provisions of this legislation, also known as HR 5661, adopted by reference in HR 4577, are available through the federal government's internet website at thomas.loc.gov.

There is an old adage that says, "When the going gets tough, the tough get going," and Texas rural hospital and medical staff members have proven themselves to be a resilient group of professionals. In spite of severe financial pressures and workforce shortages in key professional areas, only five

(5) rural/small Texas hospitals have closed in the time frame between 1998 and June 30, 2001 (Texas Hospital Association, 2001b). Unfortunately, there will undoubtedly be other rural/small hospital closures soon unless Medicare reimbursement payment inequities and workforce shortages are resolved.

The balance of this commentary will briefly summarize current and proposed federal legislative bills, programs, and other pending proposals, which could improve reimbursement rates and address manpower shortages in rural hospitals. In addition, a brief status report of the Texas Critical Access Hospital program will be provided. Current Medicare Hospital designation alternatives will be discussed. Finally, some assumptions will be made and conclusions reached regarding the future of rural health care providers in Texas.

PENDING FEDERAL LEGISLATION

The American Hospital Association publishes a 2001 Legislative Agenda, the most recent revision of which contains most of the major legislative initiatives affecting hospitals and other health care providers. The legislation is categorized in terms of workforce, coverage and access, or other key issues.

Perhaps, the single piece of federal legislation that would provide the most immediate and largest benefit to rural (and other) hospitals is the bill seeking adjustments to the Area Wage Index and Standardized Rate (HR 1509 and S. 885). This legislation would seek to establish a "floor" of 0.925 for the area wage index, increasing payments to just below the national average, which is

equal to 1.00. The bills would also equalize the inpatient prospective payment system base amount by moving from two separate base payment amounts to a single base rate for all Medicare inpatient services.

Simply stated, the wage index is a comparative value for the cost of wages in different regions of the country. The state-wide average for Texas rural hospitals is 0.74, while the wage index for major metropolitan areas, such as Dallas, Houston, and Austin exceed the national average of 1.00.

If the proposed legislation were to be passed, it would help virtually every hospital throughout the state, including rural and suburban, except in the major metropolitan areas just referenced (Texas Hospital Association, 2001c). Likewise, equalizing the inpatient prospective payment system base amount by moving to a single base rate would help to establish more equitable payment rates for rural/small hospitals both in Texas and nationally. The wage index proposal is supported by the American Hospital Association, the National Rural Health Association, the Texas Hospital Association, the Texas Organization of Rural and Community Hospitals, and the Texas Rural Health Association.

A key federal bill that is pending is the American Hospital Preservation Act (S. 839 and H.R. 1556), which seeks to provide a full market basket update for FY 2002 and 2003, thereby restoring reductions initiated in the BBA. Other pieces of legislation seeking ways to increase the number of trained and qualified physicians and nurses are also pending. The balance of the legislative agenda is fairly straightforward, and most other legislation deals with reimbursement and payment issues. There is one interesting bill regarding regulatory relief, which would seek to streamline paperwork and eliminate "certain needlessly burdensome regulations."

OTHER PENDING FEDERAL LEGISLATION AND PROGRAM PROPOSALS

The Rural Healthcare Improvement Act of 2001 (H.R. 2157 and S. 1030)

One of two very recent legislative developments, the Rural Healthcare Improvement Act of 2001 (H.R. 2157 and S. 1030) has been presented by a bipartisan group of federal representatives and senators to address the need for additional funding and assistance for rural hospitals. This particular piece of legislation would address disparities between rural and urban hospitals regarding payments, technology, and equipment. The major elements of these bills are:

- Includes a low-volume hospital payment adjustment of an additional 25%. Low-volume hospitals are defined as rural hospitals with 800 discharges or less and located at least 15 miles from another hospital.
- Removes the 5.25% rural hospital cap on Medicare Disproportionate Share Hospital add-on payments for inpatient care to uninsured and low-income patients.
- Increases the rural standardized payment amount to the level received by urban hospitals. Standardized payments were established by 1982 base costs adjusted forward to account for inflation.
- Allows rural hospitals reclassifying to urban designations to receive the same rate for other PPS services (e.g., home health and outpatient care) as they do for inpatients.
- Creates an additional payment for independent laboratory services, not folded into a hospital's DRG payment, so that small/rural hospitals are not penalized if they don't have an in-house lab service.

- Provides grants of up to \$50,000 for hospitals to create modernization plans and low-interest loans of up to \$5 million dollars to implement the plans. In addition, the Department of Health and Human Services (HHS) gives hospitals grants of up to \$100,000 for purchasing new technology applications.
- Provides grants of up to \$1.5 million dollars to expand and to develop telehealth services. Telehealth is defined as the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration.
- Increases the cap for rural health clinic payments by 25% from \$63 to \$79 per patient.

H.R. 2157 and S. 1030 are supported by the American Hospital Association (AHA), the National Rural Health Association (NRHA), the Texas Hospital Association, the Texas Organization of Rural and Community Hospitals, and the Texas Rural Health Association.

Rural Essential Access Community Hospital Proposal

The other most recent program proposal, the Rural Essential Access Community Hospital (REACH) proposal is still under discussion. The REACH proposal, which would seek to increase reimbursement for rural hospitals with 50 available beds or less, was conceived originally by the Hospital Constituency Group of the NRHA. Ensuing discussions with the AHA and a recent AHA conference call of July 8, 2001 involved consideration of a modified Critical Access Hospital (CAH) and REACH proposal. The

end point of these ongoing discussions between NRHA and AHA would appear to be leading toward closure and joint sponsorship of a proposal that would improve reimbursement for both rural/small hospitals with 50 available beds or less as well as CAHs.

Among the major components of the modified proposal being discussed are the following:

- Reasonable cost reimbursement and an additional factor for new technology;
- Extension of the reasonable cost payment methodology to distinct part units such as SNFs and gero-psychiatric services, which are now on a prospective payment basis, all outpatient services, home health, and ambulance services;
- Reimbursement of Medicare bad debts at 100%; and
- Eligibility for Disproportionate Share Hospital (DSH) payments.

Other fine-tuning of suggested changes in draft language will be addressed by both the NRHA and AHA, and once the two organizations reach a consensus, they will draft appropriate legislation and seek sponsors. Association executives participating in the July 8, 2001 conference call, most of whom represented western and midwestern states, agreed that the modified CAH/REACH proposal was the right course of action and good public policy. It is anticipated that the REACH proposal may be drafted into legislation some time during latter part of the summer.

Federal and State Status Report Regarding the CAH Program

The one positive provision of the BBA was the Medicare Rural Hospital Flexibility Program, also known as the Critical Access

Hospital Program (PL 105-33). The CAH program was established specifically to address the needs of small, rural hospitals located in remote or sparsely populated regions throughout the United States. Based on the former Essential Access Community Hospital/Rural Primary Care Hospital (EACH/RPCH) model previously established in Colorado, Montana, Kansas, South Dakota, New York, West Virginia, and North Carolina, the CAH program allowed the establishment of similar programs in all other states, provided a state plan was developed and approved by the federal government. In order to be designated CAHs, rural hospitals needed to meet the following minimum criteria:

- Must be a non-profit or public hospital located in a rural area. The language was subsequently amended to include all rural hospitals located in rural areas or rural census tracts of SMSAs.
- Must be 35 miles (or over 15 miles over secondary roads) from another hospital or meet other criteria adopted by each state as a necessary provider of health care services.
- Must provide 24-hour emergency care.
- Must limit acute care beds to 15.
- May have 25 beds with a swing bed program as long as no more than 15 are used at any time for acute care.
- Must limit the length of stay for each admission to 96 hours (subsequently amended from 96 actual hours to an average length of stay of 96 hours).
- Must provide nursing services on a 24-hour basis.
- May provide inpatient care with physician assistants or nurse practitioners with no physician on site.

Also, CAHs are required to participate in networks (work with one or more other designated hospitals), have referral agreements in writing, and have formal arrangements for the electronic exchange of information, if applicable.

In exchange for meeting these criteria, designated CAHs are reimbursed reasonable costs for all inpatient and outpatient services not otherwise limited under provisions of the BBA, e.g., home health and ambulance services.

Administered through Flex Grants through the Federal Office of Rural Health, and statewide through the Center for Rural Health Initiatives, the CAH program has been implemented gradually in Texas since early 1998, and the outcome has been gratifying. To date, programs implemented by 47 states have helped 410 rural/small hospitals become CAHs (Health Resources and Services Administration, 2001). In addition to stabilizing these hospitals financially, there have been many other benefits, such as:

- Improving local EMS services;
- Supporting community-based efforts;
- Improving access to care;
- Improving the quality of services; and
- Developing networks of care.

Other benefits are outlined in the State Progress Report, which can be accessed at www.nal.usda.gov/orhp.

In Texas, currently 26 hospitals, dispersed geographically throughout the state, have been designated as CAHs. A list of the CAHs and a map of their locations may be obtained from the Center for Rural Health Initiatives in Austin, Texas (www.crho.state.tx.us). In addition to providing stable financial conditions in designated

CAHs, the Texas program has mirrored the federal outcomes in providing tools for the community health assessment process, developing a more well-defined CAH network, implementing QA program improvements, and assisting in the organization and financing of trauma and emergency services at the local level. (Center for Rural Health Initiatives, 2001).

CURRENT RURAL MEDICARE HOSPITAL DESIGNATION ALTERNATIVES

The current rural Medicare designation alternatives represent a patchwork variety of categories established in response to periodic legislative and regulatory changes to the Medicare program and the need to recognize the unique needs of rural hospitals. The following are the designation alternatives available currently to Texas small and rural hospitals, which are 100 beds and under located in either a rural area or a rural census tract of a Metropolitan Statistical Area (MSA):

Sole Community Hospital

Sole community hospitals (SCH) must meet one of the following criteria:

- Located more than 35 miles from other like hospitals; or
- Located between 25 to 35 miles from other like hospitals; and
 - o No more than 25% of residents/ Medicare beneficiaries who become hospital inpatients in the hospital's service are admitted to other like hospitals within a 35 mile radius of the hospital.
 - o Has fewer than 50 beds and would admit at least 75% from its service area

except patients seeking specialized care not available; or

- o Other like hospitals are inaccessible for at least 30 days in each two out of three years (weather, topography).
- o Because of distance, speed limits, and weather, time travel is 45 minutes to the nearest like hospital.

If a hospital is designated as a SCH, then its Medicare reimbursement for inpatient services is the higher of:

- Federal PPS rate;
- 1982 updated hospital costs;
- 1987 updated hospital costs;
- 1996 updated hospital costs;
- Blended in between 2001 to 2004.

The reimbursement for outpatient services is protected from the negative impact of the Outpatient Prospective Payment System (OPPS) from 2001 to 2004.

OPPS is based upon an interim payment rate. The settlement is based on "reasonable costs" with reductions for:

- ASC, radiology, and diagnostic blends;
- Lessor of costs or charges;
- RCE limits;
- Lab services fee schedule.

Also, SCHs are not subject to capital cost reductions (10%) or outpatient cost reductions (5.8%).

Medicare Dependent Hospitals

Medicare dependent hospitals meet the following criteria:

- Rural hospital <100 beds.
- Not classified as a SCH.

- For the cost reporting year beginning in 1987, was dependent on Medicare for at least 60% of its inpatient days or discharges. (Modified in BIPA to be two of the last three cost report periods with Medicare 60%).

Hospitals designated as Medicare Dependent Hospitals receive the following reimbursement:

- For inpatients, half the difference between SCH and PPS rates.
- For outpatients, the same as the SCHs with the following exception: Medicare dependent hospitals are subject to operating (5.8%) and capital (10%) cost reductions.

Critical Access Hospitals

The criteria and reimbursement for CAHs were covered earlier in this article. Essentially, CAHs are small, low volume, and often remote rural hospitals, which are currently paid on a reasonable cost basis except for home health services and distinct part units that are covered under the Prospective Payment System (PPS).

Rural Essential Access Community Hospitals

The proposed new category of Rural Essential Access Community Hospitals (REACH) was also discussed earlier in this article. If REACH facilities are approved as a new Medicare designation, then there will be four separate categories for designation and reimbursement of rural/small hospitals, in addition to the PPS, which applies to all other rural hospitals not qualifying for one of the special categories. The PPS also is the only method of reimbursement available to all urban and suburban hospitals.

CONCLUSIONS

It has been a rocky road for rural hospitals in Texas and across the nation since the enactment of the BBA, subsequent sequela bills, and the implementation of the CAH program. The affects have been so far-reaching that it has led to consideration of another Medicare designation category to go along with the three other designations currently in existence.

The Federal Office of Rural Health Policy has established a Rural Hospital Issues Group that consists of rural hospital administrators, hospital and financial consultants, and association executives from across the United States. Texas representatives of this group include George Miller, Jr., CEO of Christus Jasper Memorial, Ernie Parisi, CEO of East Texas Medical Center in Quitman, Brandon Durbin of Durbin and Company in Lubbock, and Richard Hoeth of Texas Hospital Association in Austin. This group meets annually to discuss rural health policy issues and subsequent recommendations on potential regulatory and legislative solutions. Quoting from the minutes of the Rural Hospital Issues Group's December 2000 meeting, "even if all of the Group's recommendations were enacted, rural hospitals would still be at risk" (Health Resources and Services Administration, 2000). Furthermore, the Group believes that "Medicare, as currently configured, cannot account for the true costs of providing care in rural communities because the system fails to take into account particular characteristics related to size, volume, and geographic isolation."

Eventually, Medicare must move beyond the special designation categories previously discussed, which have created a patchwork network of rural facilities, some of which are

just surviving, while others are struggling to keep their doors open. Given the current national political landscape and other national priorities, it is unlikely that beyond the addition of improved pharmacy benefits there will be any sweeping and monumental reform of the Medicare program. However, it certainly is needed to ensure the preservation of the rural health care infrastructure as well as the health of suburban and urban hospitals. Therefore, rural health care advocates must continue to exert strong and persuasive grass-roots lobbying efforts, both in their local areas as well as nationally.

On the positive side, our state and federal elected officials have received the message and today are very supportive and concerned about the future of rural health care providers. Rural providers and other organizations that support them must capitalize on this situation by promoting the passage of any legislation that could strengthen our rural health care delivery system.

Editorial Note

This article was written prior to the September 11, 2001 terrorist attacks on our nation. Obviously, our nation's priorities shifted overnight as a result of those heinous acts. While we join in grieving for those losing their lives in New York, Washington DC, and Pennsylvania, the impact of which was felt worldwide, we must maintain our focus not only as a nation defending the bases of our priceless freedoms, but also on our role as rural health care professionals.

We still do not have enough primary care physicians and skilled nurses and other allied health professionals to meet the growing demands of our rural health care citizenry, and our hospitals, physicians, and other rural health care providers still require adequate reimbursement to assure the continued

delivery of high quality rural health care services. It is unlikely that any one single entity, such as the federal or state government can provide the resources to resolve the needs in our health care infrastructure. We will continue to lobby for needed rural health care policy changes, but with a posture of realism about competing interests for suddenly scarce resources and the resulting length of time it may require to achieve our goals.

Local involvement and support of our rural health care providers is needed now more than ever. The future preservation of our rural health care system is ultimately the responsibility of local rural leaders, who must identify key programs and services needed in their communities and take the steps required to see that such services are provided to their populace. Through focus and perseverance, we will succeed.

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THE TEXAS CHILDREN'S HEALTH INSURANCE PROGRAM (CHIP) ONE YEAR LATER – WHERE DO WE GO FROM HERE?

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ABSTRACT

The United States Congress passed the State Children's Health Insurance Program (CHIP) as part of the Balanced Budget Act in 1997. In April 2000, the state of Texas introduced its single eligibility determination process called "TexCare Partnership." The TexCare Partnership (TCP) was created to bring the private coverage sponsored by the Texas Healthy Kids Corporation, the children's Medicaid program, and CHIP under a single umbrella organization. In May 2001, the Texas Healthy Kids Corporation was phased out. This was in part due to the outcome of a successful first year of CHIP enrollment.

With 16 months of implementation and utilization experience, participating health plans, providers, and state officials are now addressing first year growing pains of the CHIP program. While enrollment of eligible children is generally considered a wonderful success, enrollment of additional children and more importantly, financial reimbursement issues are taking center stage. Statewide, 13 of 14 health plans have lost millions in the first year of operations. The impact this unfavorable financial situation will have on the overall program is unclear.

Key words: BBA, CHIP, enrollment eligibility, Medicaid, TexCare partnership, Texas Healthy Kids. (Texas Journal of Rural Health 2001; 19(4): 42-50)

INTRODUCTION

Snoopy, world-renowned author, typically begins each attempt at his great American novel writing, "It was a dark and stormy night." Some may agree that Snoopy's opening sentence aptly characterizes the first year of the state's Children's Health Insurance Program (CHIP). As of this writing, 16 months of experience have elapsed since the initial Texas rollout of its CHIP program in April 2000. Participating health plans and the state's CHIP Bureau are struggling to fully understand the financial and utilization implications of this new program. Compiled by the Texas Association of Health Plans, based on official state data and reported in the *Houston Chronicle* of August 25, 2001, 13 of the 14 health plans statewide combined have lost nearly \$38 million in CHIP's first year of operations (Hughes, 2001a). This dismal financial picture raises a red flag regarding the health of the program even as it threatens the hope for better health for thousands of low and moderate-income Texas children.

Rush (2000) and Sperry (1999) provide excellent frameworks regarding the genesis of the state's CHIP program, the anticipated implementation concerns, and the issues participants would likely address in the year following implementation. Rush cites legislative interest relative to financial appropriation decisions for the ensuing two years of program operations as a primary concern. One year later, this is indeed a primary focus to both the state and the participating health plans.

ENROLLMENT ISSUES

In April 2000, the state of Texas introduced its single eligibility determination process called "TexCare Partnership." The

TexCare Partnership (TCP) was created to bring the private coverage sponsored by the Texas Healthy Kids Corporation, the children's Medicaid program, and CHIP under a single umbrella organization. Last year, state officials with the Health and Human Services Commission (HHSC) set a target enrollment of 428,000 enrollees by September 2001 (HHSC, 2001a; HHSC, 2001b). As of September 2001, the program reports achievement of its target with an enrollment of 429,397. In May 2001, the Texas Healthy Kids Corporation was phased out. This was in part due to the outcome of a successful first year of CHIP enrollment. Additionally, the TexCare Partnership (TCP) has referred over 172,000 children to the Texas Department of Human Services (TDHS) for Medicaid screening. TCP has also launched a number of different enrollment initiatives including: intensive TV, radio, and print ad campaigns; local community-based and directed marketing initiatives; and campaigns to involve more businesses in promoting community awareness about these healthcare initiatives. There are 50 community based organizations (CBO) contracted with the state to conduct TCP outreach.

State officials, realizing their success in achieving their "Phase I" enrollment goal are now turning attention to the second phase to develop and implement an "institutionalization" vision for TCP outreach. The draft TCP Outreach Plan: A Vision for Next Steps (HHSC, 2001c) acknowledges that not all children eligible for CHIP or Medicaid have been reached. Many of the 340,000 babies born in Texas yearly are born into families without access to health insurance, and if families do have insurance, economic considerations and job changes will frequently cause them to lose health insurance coverage. This new biennium vision, state officials indicate, takes into account lessons learned from other states' experiences. This vision intends to:

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- Identify and target under-served populations.
- Broaden and institutionalize automatic information dissemination systems within organizations that have frequent contact with families.
- Communicate, through TCP, that families can afford to keep their children healthy and protected in the event of illness.
- Emphasize family maintenance of health care coverage and appropriate utilization of services.

While the state's outreach and enrollment efforts have been quite successful, these efforts also shed light on unanticipated problems.

Dual enrollment of children in both the CHIP program and in Medicaid has surfaced as problematic, and costly, to participating health plans. Although not expected to be an issue during the design and implementation of the new program, health plans have discovered small percentages of eligible children enrolled in both their particular CHIP plan as well as in Medicaid. This becomes especially problematic when the health plan incurs claims for an enrollee that is eligible and in fact, enrolled in the Medicaid program and in the CHIP health plan simultaneously. The health plan position is that incurred claims expenses should be redirected to the Medicaid program. Given that the CHIP program is new, state officials are not convinced a mechanism currently exists to effect such a cure.

Hopefully the new state statute (S. 43, 2001) will be the remedy. SB 43 seeks to streamline Medicaid and CHIP application/eligibility rules and operations to make it easier for children to enroll in health insurance. To bring about a meaningful coordination between Medicaid and CHIP, state officials indicate that program managers must

not only ensure the collection of reliable data but ensure consistency between eligibility standards, quality measurements, outreach, and contract management. In a fashion similar to the CHIP program, the SB43 legislation will allow parents to enroll their children by mail as opposed to a personal appearance at a department office. Other provisions address guarantees for continuous coverage and modified assets tests (S. 43, 2001). By using a single application and enrollment format, the state believes more parents will be encouraged to enroll in a program that provides their children comprehensive health care without stigma. Additionally, state officials anticipate the problem of dual enrollment will be eliminated.

A second issue involves the state's decision to enroll Children with Special Health Needs into the CHIP program. The participating health plans did challenge this action contending that they were not informed that these resource-intensive children would be folded into the CHIP program. Therefore, plans did not factor in a cost component for these children as part of their the premium buildup analyses. As a result, health plans feel their premiums are not sufficient to cover the expenses generated by these special needs children. This issue continues to be discussed as part of the overall second year premium negotiation between the participating plans and state officials.

The success of the first year enrollment highlights another issue—access to appropriate primary and specialty care. The level of accessibility to healthcare services may be a localized issue; El Paso's situation, featured in several newspaper articles, is one of the more glaring examples.

While state officials relish the unexpected success in enrollment, El Paso's celebrated discontent shines a light on an unanticipated problem: inaccessibility due to an inadequate

medical infrastructure. As reported in an August 7th issue of the *New York Times* (Yardley, 2001), El Paso, with a population of nearly 700,000 people, does not have a children's hospital (one of the largest areas in the country without one) and no pediatric surgeons. According to the *Times* article, local pediatricians feel there is some access to the local delivery system but it is inadequate, from a pediatric perspective, due to chronic under-funding for many years. George Washington University health law professor, Sara Rosenbaum, notes that El Paso represents "the future for all of us if we don't come up with a national health policy." (Yardley, 2001). The overriding concern is that as the country (and states) increase the number of children with health insurance, many local communities will not be able to match that increase with an appropriate expansion of the local healthcare delivery system. The American Medical Association reports in its February 28, 2000 issue of *AMANews* that the field of pediatrics is also changing in light of the fact that children are living longer with such chronic diseases as cystic fibrosis and leukemia. They report that the families of children with chronic medical needs require "variable access to care and confidence in their specialty providers." The article, citing an American Academy of Pediatrics report, highlights the projection of a shortage of pediatric subspecialists, which portends less research and declining "access to doctors who are familiar with complicated and advanced diseases (Greene, 2000). To further illustrate this issue, the article also cites a National Health Interview Survey of Disability which indicates that "18% of children have ongoing chronic developmental, physical, or mental health conditions that require compensatory services, a percentage that has been increasing during the past 20 years."

Some clarification of the situation in El

Paso is warranted. Two health plans participate in the CHIP program in El Paso: Texas Universities Health Plan (TUHP) and El Paso First. According to one of the health plans, their provider network includes a total of 63 Primary Care Physicians (PCP), of which 35 are pediatricians, 20 family practitioners, and 8 are internists. Within that physician network, only four pediatricians have closed their panels to new patients. These physicians closed their panels because the practice did not have enough medical staff and/or office personnel to support the growing number of patients. The concern for access is not necessarily based solely on a lack of pediatricians. Access may be contingent upon whether or not a provider decides to participate in the program for other reasons (i.e., poor reimbursement, lack of office staff, etc.). A participating provider may choose to close his/her panel to control the overall patient and/or payer mix (reportedly, some physicians have observed a leakage of private, insured patients into the CHIP program because of CHIP's lower monthly premiums.)

With the program now in its second year, re-enrollment of CHIP members becomes an item to be monitored closely. As a family's annual enrollment comes to an end, responsibility for re-enrollment rests with the family. Currently, state officials indicate the overall re-enrollment rate in Texas is 74%; higher than that reported in other states. Successful re-enrollment is important to the financial success of each health plan. However, individual re-enrollment rates for each health plan may be contingent upon several factors depending on the premium category the member falls within as well as to whether or not the family is even aware of the requirement to re-enroll. The federal poverty level (FPL), a benchmark for CHIP eligibility, changes annually; former CHIP eligible children may now become eligible for Medic-

aid health coverage. Another consideration is the state of the economy. Should the economy weaken, a very real possibility given events occurring at the time this article is being written, it is conceivable more previously CHIP eligible families will find themselves shifting from CHIP to Medicaid eligibility as a result of job loss or decreased income. Health plans may be taking proactive roles, and incurring expenses, to encourage their enrollees to re-enroll only to find those enrollees no longer meet CHIP criteria. Re-enrollment may be more actively pursued by families with sicker children or by those with a history of higher utilization. Families with healthier children may be reluctant to re-enroll in a program they either used sparingly or not at all. As noted by Charles Kight, president of Community First Health Plans, "Families whose children use the system most frequently are also re-enrolling in CHIP at high rates, skewing the risk pool" (Foy, 2001). This will certainly be an area to continue to monitor.

INADEQUACY OF FINANCIAL REIMBURSEMENT

Successful enrollment and outreach efforts have illuminated financial/reimbursement shortfalls for participating health plans in this first year. Thirteen of the 14 participating health plans are reporting significant financial shortfalls from first year operations. As a result, plans are reviewing their options and all face the ultimate business decision whether or not to continue to accept these losses or terminate participation. The \$38 million in combined losses appears to threaten the continued viability of the CHIP program. Some state officials feel these predictions of doom are "overblown," and more indicative of the growing pains associated with a start-up

program (Hughes, 2001a). It would appear prudent to take health plan concerns seriously; the magnitude of the financial problems appears to be more indicative of a program that is in dire need of re-design and adequate funding or face extinction. The health plans are in full negotiations with the state to redress this issue prior to the start of the new plan year. How the infusion of an additional \$53 million from state and federal sources is allocated will be very much the focus of all associated with the CHIP program.

The inadequate levels of reimbursement may have their roots in how the levels were originally established. State officials, in absence of a utilization history for the CHIP population, used Medicaid utilization for generating anticipated funding requirements. An apparent fallacy of this projection is the assumption that CHIP children would receive care in a manner similar to the Medicaid population. Instead, it appears that these children, now given financial access to care, unleashed a pent up demand resulting in higher utilization and resource consumption than anticipated. Therefore, first year utilization appears not to reflect the anticipated utilization pattern and physicians have encountered multiple, pent-up health needs for new enrollees. While this assessment may be anecdotal, the losses incurred by the 13 of 14 health plans may substantiate the poor health status of the first year CHIP patients. Additionally, the state's inclusion of special needs children in the CHIP program, caught health plans off guard and has significantly impacted the bottom line for most plans. The essence of this problem is one of adverse selection; we are seeing the sickest children being enrolled in the program. Plans are concerned that "healthy children," who do not require expensive care, are not being enrolled to offset the expenses incurred by those "sicker" children. By using Medicaid utilization as the basis of determining reim-

bursement (Medicaid covers low income families while CHIP is designed to support the working poor) the issue of adverse selection is inadequately addressed. That approach may account for the costs associated with providing care to those who have access to care by virtue of their access to public funding (Medicaid). However, it fails to account for the pent up demand for those without access to and public funding for health care. Dr. Cecilia Kaye, chairperson for pediatrics at the University of Texas Health Sciences Center at San Antonio, notes, "CHIP health plans are experiencing losses in part because there was an extreme, pent up demand for health care by needy children whose families had been putting off seeking treatment because of the cost involved" (Foy, 2001). These first 16 months appear to demonstrate that low-income families, unable to meet Medicaid eligibility requirements, fail to obtain health care as a cost avoidance practice. As a result, the child enrolling in CHIP more than likely represents a sicker client and higher utilizer of services. It is also likely we will also learn that those children re-enrolling in the program will be the same high utilizers. This may have the effect of further skewing each health plan's risk pool thus straining its financial health and forcing premiums to escalate even more significantly.

Another issue that exacerbates the unfavorable financial situation revolves around the adverse impact the increasing cost of pharmaceuticals has had on health plan medical costs. HMOs are being squeezed by rising drug costs. Kreimer (2001), cites an Express Scripts 2000 Drug Trend Report that indicates pharmaceutical costs "surged 16.2% in 2000" and are expected "to jump another 20%" in 2001.

Perhaps the most salient representation of health plan discontent rests with a decision

made by Texas Children's Hospital, one of the largest contractors for the state's CHIP program. In a letter to Don Gilbert, the Texas Health and Human Services Commissioner, it was explained that the hospital was suffering "staggering" losses associated with providing CHIP care to its 48,000 children. The hospital's president and CEO, Mark A. Wallace, in his 90-day termination letter to the commissioner, noted that "unless there are serious, programmatic changes, we believe CHIP is likely to collapse statewide" (Hughes, 2001b). Wallace, in his letter, indicates that "substantial" rate relief is required; his facility has "already lost \$9.7 million on CHIP." Other health plans have expressed rate increase concerns that echo those documented by Texas Children's Hospital and its affiliated health plan. Although an additional \$53 million provided from state and federal sources, is expected to increase total premiums by 10.5%, there is a real and palpable concern among the participating health plans around the state that continuation in the program, at rates that do not cover costs, will precipitate a financial crisis for the program statewide (Hughes, 2001a).

Physician discontent with reimbursement levels for their services have likewise reached the halls of the statehouse. This concern may be typified by the highly publicized expressions regarding inadequate reimbursement emanating from physicians in El Paso (Associated Press, 2001). Press reports note that up to a third of newly enrolled CHIP children were being turned away by pediatricians in El Paso. Physicians interviewed indicated that they were being paid too little and would not accept new patients enrolled in either Medicaid or CHIP. In response to this situation, legislators have moved to raise the Medicaid rates paid in El Paso by 15% (Rutigliano, 2001). While a higher level of reimbursement

may be welcome, there is no evidence it will ameliorate the long-term problems of the adequacy of the local delivery system, patient access and healthcare financing as discussed earlier.

OTHER FACTORS

There are many people within the state, in our communities, and among the participating health plans and providers that are dedicated to ensuring eligible Texas children receive much needed health care through CHIP. However, other social and health-related factors may yet severely test CHIP's resilience and viability in ways not now known or addressed. As reported in the September 9, 2001 Dallas News (Conklin, 2001), increasing demand for medical care and climbing medical insurance premiums, this year averaging 11% in north Texas, as an example, are forcing employers to shift greater shares of the cost to employees. We may yet see trends among employers to discontinue offering health insurance; this could add appreciably to the 39 million Americans who do not now have coverage. An increased premium cost share borne by employees may also force financially challenged workers to take the risk of dropping their children from their employer-based coverage, wait the three months, then seek to enroll their children in the CHIP program. This may certainly impact the CHIP enrollment figures and add to the state's total health care cost burden to provide care for children previously covered by employer-based health insurance. In a perverse way, adding these potentially "healthier" children, who had previously enjoyed regular access to health care services, might improve, in the short term, the risk pools of the participating health plans by blunting the effects of each plan's currently enrolled high utilizers. Of course,

this would certainly not represent acceptable public policy or an acceptable trend and would bear close monitoring by the state's program managers.

As noted in an August 1, 2001 Washington Post article (Sheridan, 2001), there is a growing subclass of United States residents, with limited legal rights, that have states and communities concluding "that unequal treatment poses too great a threat to public order and safety." Several states now allow undocumented immigrants to obtain a driver's license by not requiring applicants have a social security number. Several states and cities have also established health programs to cover undocumented immigrants barred from federal Medicaid benefits. These health programs are cited as more cost-effective than the alternative – the emergency room. The trend to offer limited rights is generally justified as benefiting the community overall by providing a safer and healthier environment for all citizens and less expensive than trying to identify and deny the given benefits to one or another segment of the community.

In Texas, as reported in an August 13, 2001 Houston Chronicle article (Brewer, 2001), the state's attorney general issued, on July 10, 2001, an opinion that the federal Personal Responsibility and Work Opportunity Reconciliation Act of 1996, bars "the district from providing most free or discounted preventive care to undocumented immigrants." The opinion stipulated that the only services that could be provided were emergency room care, immunizations, and treatment for communicable diseases and child abuse. This is a policy decision that will very likely be tested in the courts. On the heel of this decision, there appears to be movement, at the CHIP program's state level, to identify and remove children who were enrolled in the program without a verification of their status as legal permanent residents. While this position seems to reflect the recent attorney

general opinion, these policy decisions could be construed negatively among border and immigrant communities and only serve to injure the intent and purpose of the state's CHIP program – to improve the health status of Texas children. These policy decisions may also engulf the program in the looming political battle likely to be enjoined with the national debate emerging over what direction the Bush administration should take in negotiating a safer and more efficient immigration policy with Mexico.

CONCLUSION

The CHIP program, considered a significant policy success with respect to its enrollment goals, is under siege financially. Health plans report significant losses and seek collaboration with the state to redress financial and program weaknesses. The program's state officials are evaluating ways to revamp the program to assure financial viability. State and health plan ideas to restructure the program may include limiting the program's medical benefits, increasing enrollee cost sharing, stipulating an open enrollment period instead of continuous enrollment, and capping the number of children who can participate in the program. How the state, providers, and the public at large respond to the challenges confronting CHIP, will ultimately determine the program's fate and the health status of children who do not otherwise have access to health care in the state of Texas.

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Editorial Note

As of October 2, 2001, the Texas Children's Hospital resolved their CHIP contract with the state.

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A REVIEW OF PRIMARY CARE PHYSICIANS' DETECTION, DIAGNOSIS, AND TREATMENT OF DEPRESSION

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ABSTRACT

Depression is one of the more common diseases in urban as well as rural areas of the United States, with approximately 17% of all Americans experiencing depression over their lifetimes. An even greater percentage of the population may experience minor to moderate depression or have depressive symptoms not meeting the formal criteria for the diagnosis of a disorder. The initial point of contact for the treatment of depression is frequently a primary care physician rather than a mental health care professional. Yet, questions remain about the ability of primary care providers to successfully detect, diagnose, and treat depression. This article reviews the literature about the treatment of depression in primary care settings and suggests priorities for future research.

Key words: major depressive disorder, unipolar depression, primary care. (*Texas Journal of Rural Health* 2001; 19(4): 51-59)

INTRODUCTION

Unipolar depressive disorders afflict a relatively high percentage of the population. According to the National Comorbidity Study, the one year and lifetime prevalence rates of

major depression are 10% and 17%, respectively (Kessler et al., 1994). The one year and lifetime prevalence rates of dysthymia, or chronic depression, are 2.5% and 6.4%, respectively (Kessler et al., 1994). Minor and moderate depression, or depression not meeting the criteria for a formal diagnosis of major depression or dysthymia, afflicts an even higher proportion of the population. The Epidemiologic Catchment Area study estimated that the lifetime prevalence of minor/moderate depression, defined as having at least two depressive symptoms at one time, is 23% (Johnson, Weissman, & Klerman, 1992).

For most individuals, the initial point of contact for treatment of depression is the primary care system. Not surprisingly, the prevalence of depression in primary care is quite high. The prevalence of major depression in the primary care setting has been estimated at 4.0% to 8.6% (Williams et al., 1995; Depression Guideline Panel, 1993a). The prevalence of minor/moderate depression in primary care has been estimated at 8.4% to 16% (Williams, Kerber, Mulrow, Medina, & Aguilar, 1995; Depression Guideline Panel, 1993a). Combining these estimates makes depression one of the more commonly treated, if not the most commonly treated, disorders in the primary care setting.

As managed care becomes more prevalent, primary care physicians are gaining greater responsibility for the management of patients' mental health care (Wells & Sturm, 1995). Better understanding of what factors contribute to the detection and diagnosis of depression as well as the outcomes of different treatments for depression in primary care settings is, therefore, important. This article reviews the literature on primary care physicians' detection and diagnosis of depression and the efficacy of primary care physicians' treatment of depression. Several more recent studies are critiqued and new research

questions regarding the effectiveness of treatment are proposed.

DETECTION AND DIAGNOSIS OF DEPRESSION

Because of its high prevalence in the primary care setting, a great deal of research has been conducted on primary care physicians' ability to detect and diagnosis depression. This literature overwhelmingly supports that primary care physicians have difficulty detecting and diagnosing depressive disorders (Wells et al., 1989; German et al., 1987; Docherty, 1997; Cole & Raju, 1996).

Multiple patient factors impede the detection of depression. Patients may not be aware of or may deny the presence of depressive symptoms (Cole & Raju, 1996; Docherty, 1997). For example, social stigma associated with mental health problems may preclude patients from discussing their depression with their physicians (Docherty, 1997). Rather, patients may be more inclined to discuss the physical ailments or disabilities associated with depression such as sleep disturbance, headaches, or problems with sexual functioning (Cole & Raju, 1996). Physicians, in turn, have difficulty distinguishing depressive and somatic symptoms.

Compounding these problems are physician characteristics hindering the detection and diagnosis of depression. It has been suggested that primary care physicians may not have adequate education to diagnosis and treat depression (Docherty, 1997). Because of their emphasis on the biomedical model, physicians may be more inclined to treat the physical symptoms manifested by depression. Physicians' time and financial incentives also play a role. Because of pressures to see as many patients as possible, most physicians spend no more than ten

minutes observing, questioning, and discussing problems with a patient. This amount of time is insufficient for assessing emotional problems and detecting depression (Docherty, 1997). Second, financial incentives, such as different reimbursement rates, may influence the likelihood of detection. Results from the Medical Outcomes Study suggest that prepayment is negatively related to the detection of depression as compared to fee-for-service reimbursement (Wells et al., 1989). However, it is not clear from their study if this relationship is attributable to reimbursement differences, practice organization, or other related factors.

To help improve physicians' detection of depression, several screening instruments have been developed. Examples include the Beck Depression Inventory, Center for Epidemiologic Studies-Depression Scale, Hopkins Symptom Checklist, Prime-MD, and Zung Self-Assessment Depression Scale, among others (Williams et al., 1995; Beck, Steer, & Garbin, 1988; Derogatis, Lipman, Rickets, Uhlenhuth, & Cori, 1974; Mulrow et al., 1995). Such surveys are typically used to alert providers to the presence of a possible mental disorder. They are not intended to be used for the diagnosis of depression. Rather, upon further clinical inquiry, a diagnosis of depression or mental disorder can be made. In the primary care setting, this involves determining the etiology and severity of the depressive disorder by observing and interviewing the patient. In the mental health care setting, diagnostic schedules may be used to make more definitive diagnoses. While these schedules are probably not practical for use in primary care, they should be noted because of their importance in evaluating the accuracy of primary care physicians' diagnoses.

Many screening instruments have also been used to measure changes in depressive symptomatology associated with treatment.

For example, the Beck Depression Inventory and Hamilton Rating Scale have served as primary dependent variables in studies of the efficacy of psychotherapy and medication (Depression Guideline Panel, 1993a). One of the better measures of depressive symptomatology is the Center for Epidemiologic Studies-Depression Scale (CES-D) (Plutchik & Conte, 1989). Originally developed for a community-based study of the prevalence of depressive symptoms, it has since been used to measure post-treatment changes in the number and frequency of depressive symptoms (Radloff, 1977; Orne, Reis, & Herz, 1986).

The content of the CES-D reflects other measures of depressive symptomatology including depressed mood, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite, and sleep disturbance. Its strengths include high internal consistency, high specificity, and ease of administration (Plutchik & Conte, 1989, Radloff, 1977). Internal consistency, as demonstrated by alpha coefficients, ranges from 0.85 to 0.90 in general and psychiatric samples (Radloff, 1977). Sensitivity in detecting major depression, using 16 as a cutoff score, is less than desirable (64%), but comparable to that of similar instruments (Boyd, Weissman, Thompson, & Myers, 1995; Mulrow et al., 1995). Specificity, on the other hand, is relatively high (94%). Finally, the CES-D may be easier for respondents to understand and complete than other popular measures like the Beck Depression Inventory and Zung Self-Assessment Scale (Plutchik & Conte, 1989; Lyons, Howard, O'Mahoney, & Lish, 1997). The latter scales require comparisons of multiple descriptions that can cause confusion among depressed patients, particularly older patients or patients experiencing problems with concentration.

Whether primary care physicians will, or should, routinely adopt these instruments as part of their routine assessments of patients'

health status remains to be seen. Evidence thus far suggests that feedback of the results from screening instruments does not improve primary care physicians' detection or management of depression. Detection of any psychiatric disorder was only slightly increased in a randomized clinical trial of feedback from the General Health Questionnaire (a screening instrument for multiple psychiatric symptoms including somatic symptoms, anxiety, insomnia, social dysfunction, and depression) (Shapiro et al., 1987). Management of psychiatric disorders was not influenced by feedback from the screening instrument.

The detection and diagnosis of depression is certainly an important area of investigation because a large percentage of patients have depressive symptoms that primary care physicians fail to identify. Of equal or greater importance is the effectiveness of primary care physicians' treatment of depression (Wells & Sturm, 1995). If primary care physicians do not effectively treat depression, detection and diagnosis is of little concern. Unfortunately, even when depression is detected and diagnosed, evidence suggests that primary care physicians tend not to treat it appropriately (Sturm & Wells, 1995).

EFFICACY AND EFFECTIVENESS OF PRIMARY CARE TREATMENT OF DEPRESSION

A considerable amount of research provides strong evidence in support of the efficacy and effectiveness of antidepressant medication and psychotherapy for the treatment of depression, at least when provided by a mental health professional (Depression Guideline Panel, 1993b). Whether these treatments are effective when

provided or coordinated by primary care physicians is less clear.

Despite a dearth of studies on the efficacy or effectiveness of primary care treatment for depression, the Agency for Healthcare Research and Quality (formerly known as the Agency for Health Care Policy and Research) has developed guidelines that should help primary care physicians manage depression more effectively (Depression Guideline Panel, 1993a, 1993b, 1993c). These guidelines, based primarily on results from studies of treatment for depression by mental health professionals, cover the acute, continuation, and maintenance treatment of depression.

No specific treatment for the acute management of depression (i.e., clinical treatments for the purposes of eliminating depressive symptoms and signs and returning patients to their previous state of normal functioning and general well-being) is explicitly recommended over another. Rather, the guidelines recommend that either medication or psychotherapy alone should be the first-line of treatment for depressed patients (Depression Guideline Panel, 1993b). The guideline book on the treatment of depression goes on, though, to discuss situations when medication may be more appropriate than psychotherapy and vice versa. For example, medication therapy may be the most appropriate treatment choice when the depression is more severe and chronic (Depression Guideline Panel, 1993b). Combined medication and psychotherapy is not recommended as a first-line of treatment, except in more severe cases. When either medication or psychotherapy alone has not had an effect at six weeks after the initial treatment begins, it is recommended that medication/psychotherapy be added to the treatment plan.

A few studies have investigated the efficacy of adherence to specific guideline components and collaborative care between

primary care physicians and mental health professionals. Schulberg et al., (1996) assigned primary care patients diagnosed with major depression to either (1) psychotherapy provided by a psychiatrist or psychologist, (2) medication therapy provided by a primary care physician who had received education about how to treat depression, or (3) usual treatment provided by a primary care physician. The psychotherapy intervention consisted of interpersonal psychotherapy every week for approximately four months. If a patient did not improve after eight to ten weeks of psychotherapy, the patient was referred back to the primary care physician for reevaluation. This regimen of therapy conforms with AHRQ guidelines, although the AHRQ recommends reassessment at six weeks, not eight to ten (Depression Guideline Panel, 1993a). The medication intervention consisted of nortriptyline provided by a primary care physician who had received training on antidepressant medication treatment protocols. Patients were seen every one to two weeks and reassessed at six weeks as recommended in AHRQ guidelines. Finally, usual treatment consisted of any medication or counseling treatment provided by a primary care physician.

Patients assigned to either the psychotherapy or medication intervention had significantly higher reductions in depressive symptoms at the eight-month follow-up as compared to patients assigned to usual care (Schulberg et al., 1996). While the interventions were more effective than regular treatment in reducing depressive symptoms, usual care also reduced the symptoms significantly from the baseline to the eight-month follow-up.

A study by Rost, Williams, Wherry, and Smith (1995) adds further support to the importance of following AHRQ guidelines for antidepressant medication. Among patients with major depression treated by their regular

primary care physician, those that received adequate medication (i.e., recommended medication duration and dosage) had significantly higher changes in severity of depression from the baseline to follow-up than those who did not receive adequate medication.

Katon and his colleagues have conducted several studies comparing the efficacy of primary care physicians' collaborative treatment with mental health professionals and usual treatment of depression. Two of the studies, described in more detail here, provide evidence that collaborative treatment is related to improved outcomes.

First, Katon and colleagues (1995) examined the efficacy of primary care physicians working with psychiatrists to treat patients with major or minor depression. Patients were randomly assigned to either usual treatment by a primary care physician or more intensive collaborative treatment from a primary care physician and psychiatrist. Usual treatment consisted of antidepressant medication and brief visits provided by a primary care physician and any referrals for psychotherapy. Intensive treatment consisted of patient education on depression, primary care physician education on depression, and alternating visits with a primary care physician and one of two on-site psychiatrists. The psychiatrist worked with the primary care physician to choose appropriate medication therapy, but did not provide any psychotherapy. Patients were asked to visit the primary care physician or psychiatrist approximately every week for four to six weeks.

In summary, patients with major depression assigned to collaborative treatment had higher medication compliance, higher satisfaction with care, and greater reductions in depressive symptoms than patients assigned to usual treatment. Patients with minor depression assigned to collaborative treatment had greater medication compliance, but

experienced no difference in satisfaction or reduction in depressive symptoms than patients assigned to usual treatment.

Second, Katon and colleagues (1996) conducted a similar study comparing the efficacy of usual treatment by a primary care physician and collaborative treatment by a primary care physician and psychologist. Usual treatment was the same as in the previous study. Collaborative treatment consisted of patient education about depression, primary care physician education about depression, and cognitive-behavioral treatment and counseling about the benefits of medication from one of two psychologists.

In this second study by Katon et al. (1996), patients with major depression assigned to collaborative treatment had greater compliance with medication, higher satisfaction with care, and greater reductions in depression symptoms than those with major depression assigned to usual treatment. Patients with minor depression assigned to collaborative treatment had greater compliance with medication and higher satisfaction with care than those with minor depression assigned to usual treatment. There were no differences in reductions of depression symptoms between patients with minor depression assigned to collaborative and usual treatment.

The Katon et al. studies suggest that collaborative care by a primary care physician and a psychiatrist or a primary care physician and psychologist result in greater compliance with medication and more favorable outcomes, at least among patients with major depression. However, the systematic protocol for treatment of depression followed in the studies may not be reproducible in other treatment settings especially those without on-site psychiatrists and psychologists. Furthermore, it is unlikely that many primary care physicians would be able to engage in intensive collaboration with psychiatrists or

psychologists as was done in the Katon et al. studies. A second serious limitation is that only two psychiatrists and two psychologists provided collaborative treatment with the primary care physicians in the two studies, respectively. Differences in patients assigned to usual and collaborative treatment could be attributable to characteristics of the two psychiatrists or psychologists, not the interventions themselves. Finally, characteristics of the study setting limit the ability to generalize the results. The studies were conducted in a large, prepaid HMO clinic. Results may not apply to smaller, less tightly managed physician practice settings or to patients that have fee-for-service insurance.

SUMMARY AND DISCUSSION

Questions regarding the effectiveness of primary care physicians' treatment of patients with major and minor depression remain. A few studies, highlighted in this article, have examined the efficacy of intensive primary care interventions on the health outcomes of patients with depression, but the practical implications for primary care physicians are unclear. The results from clinical trials may not apply to everyday, real world practice settings.

First, additional questions regarding the effectiveness of AHRQ guidelines for depression need to be answered. Several studies suggest that adherence to recommended medication dosage and duration leads to greater reductions in patients' depressive symptoms (Katon et al., 1995; Katon et al., 1996; Schulberg et al., 1996; Rost et al., 1995). However, the impact of adherence to other AHRQ components has not been investigated. Specifically, no studies have examined the relative importance of

adherence to recommended weekly or biweekly monitoring of patient functioning, six-week reassessment of patient functioning, or continuation of therapy after the acute treatment phase.

Second, several of the guideline components are related to the frequency of primary care and psychotherapy visits. It is plausible that strict adherence to each of the AHRQ guidelines is not essential for a return to the normal, pre-depression health status. Rather, the intensity of physician and/or psychotherapy service utilization could contribute more to reductions in the severity of depressive symptoms and returns to normal levels of health-related quality of life.

Third, no studies have examined the effectiveness of collaborative treatment by a primary care physician working with a psychologist or social worker providing psychotherapy. This is an important area of investigation, because psychologists or social workers could help primary care physicians overcome their deficiencies in detecting, diagnosing, and treating patients with depression. If collaborative care is found to be more effective in treating patients with depression, health care managers may be encouraged to increase access to psychotherapy by hiring psychologists or social workers who work on-site with physicians. Additionally, insurance companies may be more willing to reimburse psychologists or social workers for their collaboration with primary care physicians.

Most importantly, these questions should be addressed for patients with major *or* minor depression. While AHRQ guidelines were intended for the treatment of patients with major depression only, previous studies suggest their application may be appropriate for treatment of patients with minor depression (Depression Guideline Panel, 1993a). In fact, it may be more important to focus on the

treatment of patients with minor depression. Most people who seek care for depressive symptoms do not meet all of the criteria for major depression, as specified by American Psychiatric Association criteria, but have a few depressive symptoms (Johnson, Weissman, and Klerman, 1992). While the symptoms may not be as severe as those presented by patients with major depression, they cause individuals substantial distress and disability and are related to increased utilization of health services (Lyons, Howard, O'Mahoney, and Lish, 1997; Johnson, Weissman, and Klerman, 1992). Estimates of the population attributable risk of physician service utilization, health status, and attempted suicide are significantly higher for minor/moderate depression than major depression and/or dysthymia (Johnson, Weissman, and Klerman, 1995). This suggests that efforts to prevent or treat minor or moderate depression will have a bigger impact on utilization and morbidity than those targeted at major depression.

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A UNIQUE MEDICALLY UNDER-SERVED RURAL POPULATION:
THE KICKAPOO TRADITIONAL INDIAN TRIBE OF TEXAS

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REVIEW

ABSTRACT

The Kickapoo Traditional Indian Tribe of Texas presents special challenges to health care workers. The Kickapoo's conceptions of health and disease are not part of modern medicine. The Kickapoo have a centuries-long history of resisting domination and acculturation from the Anglo culture. The Kickapoo, given their strong diversity, provide a model for the approach health care workers from outside the culture must use to have any success in treating health problems. Prescriptions include understanding the culture's conceptions of health and disease. As one of many cultures dominated by a stronger culture, their resistance to the efforts of health care workers must also be understood within the context of a larger political struggle. Building trust by understanding and patience may be the most important tools for health care workers trying to help this or members of similarly diverse cultures.

Key words: Kickapoo, rural health, tribal culture. (Texas Journal of Rural Health 2001; 19(4): 60-68)

INTRODUCTION

Texans once knew them as strange people who lived in rickety shacks beneath the international bridge in Eagle Pass. This group, the Kickapoo Traditional Tribe of Texas, possess an abundant, cultural tradition. Their proud resistance to acculturation has historically distinguished the Kickapoo. The tribe has relocated numerous times rather than sacrifice their culture and religion. Such tradition, while somewhat diluted today, still affects the way health services are perceived and received. From a health services standpoint, the Kickapoo in Texas are a medically under-served population. The challenge is to provide care without threatening cultural integrity. Our purpose is descriptive: to bring attention to the history of the Kickapoo, their traditions and beliefs, and the medical issues facing a culture that does not want to be part of mainstream America. Readers familiar with the healing practices of traditional cultures will quickly recognize similarities with other traditional cultures. Tribal identity, tribal history, and the healing practices of the tribal members are all intertwined in a web or matrix, which has deep religious roots. Illness and injury, mortality itself, are not experienced simply as a breakdown of the organism in the face of environmental assaults, but as events imbued with significant meaning. These messages are not only for the afflicted, but sometimes for the tribe itself. We believe health care workers engaged with these populations can better address the health care issues of the population once provided with additional tools. These tools include knowledge about the culture's interpretation of health, disease, and mortality and knowledge about the political history of a culture that sees itself as oppressed by the dominant culture for a period of generations.

Strong cultural overlays to the experience of injury, infirmity, morbidity, and mortality substantially complicate the efforts of health care professionals trained solely in the scientific model of disease. Owing to these complicating factors, we have elected not to step forward with a prescription for a medical intervention to address the health care problems of the Kickapoo. Those prescriptions must come from within the tribe, perhaps nursed along by health care practitioners on the scene who are trusted by the tribe. Interventions in a culture should not destroy it in the guise of protecting the health of the members. Inappropriate interventions would lead to a sick society, even though specific individuals might enjoy better biological health. While the Kickapoo are a numerically small group in Texas, the issues germane to them have relevance more generally. Consider that health care practitioners increasingly must work with peoples from a diversity of cultures. Some of those cultures, like the Kickapoo, hold views that are quite different from those of the health care practitioners as to what constitutes health and the meaning of mortality and morbidity. Likewise, some of those cultures mistrust representatives of the dominant culture, such as health care workers, as a result of their political interactions with it.

HISTORY

The Kickapoo are one of several tribes that have sought, over centuries, to maintain their identity in spite of nearly continuous assault from a militarily superior culture. Health care workers who recognize that the Kickapoo have a history of resistance to acculturation into the dominant culture extending back several hundred years will more clearly grasp the nature of the culture

and the special problems that exist when outsiders seek to make changes. Distrust of outsiders is the cultural norm. "Improvements" that seem like common sense to most health care workers will possibly be experienced as cultural Trojan horses by the Kickapoo. Only great sensitivity to the culture and a long period of trust-building are going to have an influence in a culture this traumatized. Understanding, trust building, and sensitivity are our prescriptions for health care workers seeking to assist in meeting the health care needs of the Kickapoo or other such cultures.

The Kickapoo are categorized in the Algonquin group of Indians from the Great Lakes region. Cain states that the Kickapoo were probably first acknowledged by Western society by Champlain near Lake Michigan in 1612 (Nunley, 1986). According to Nunley (1986), over a period of three centuries, the Kickapoo have ranged north and south from Wisconsin to Mexico and east to west from Florida to Idaho. Like other Algonquin tribes, the Kickapoo were "semi-sedentary but migrated when survival dictated (Wright & Gesrick, 1996)."

During the American Revolution, the Kickapoo allied with the British as it became evident that the Americans coveted Indian's lands (Nunley, 1986). After the war, hostilities continued between the American and the Kickapoo, alternating between raids and treaties. A peace treaty in 1819 called for a move of the Kickapoo to southeastern Missouri (Nunley, 1986). As hunting resources became depleted, the Indians moved further south, splitting into smaller factions. In the late 1800's, most of the Kickapoo continued to migrate south, this time through Arkansas, Oklahoma, and Texas. After the 1821 war for Mexican independence from Spain, the newly formed Mexican government allowed the Kickapoo to occupy land in return

for loyalty to Mexico (Nunley, 1986). Soon, the Kickapoo claim for land in Texas was threatened when Texas gained independence. Texans conducted raids against the Kickapoo. The Kickapoo retaliated with attacks on Texas settlements. Seeking peace after years of these repeated attacks, many Kickapoo moved north to Oklahoma, while others journeyed south to the interior of Mexico. In approximately 1860, the Mexican government moved the Indians to Hacienda El Nacimiento, approximately 150 miles south of the Texas-Mexico border (Nunley, 1986). During the Civil War, most Kickapoo in Oklahoma and Kansas traveled south to avoid involvement in the Civil War. On the way, Confederate cavalry attacked the tribe to take their horses. This was considered an act of war and set the stage for more attacks and counterattacks (Nunley, 1986).

Perhaps the most tragic period in the history of the Kickapoo occurred in the 1870's while the United States State Department was attempting to negotiate peace. The War Department had other plans, namely a "campaign of annihilation, obliteration, and complete destruction (Nunley, 1986)." In May 1873, the United States Fourth Cavalry attacked an unsuspecting village. Many of those killed were women and children as most men were away on a hunting expedition. Forty captives were taken to San Antonio and then forced to Fort Gibson, Oklahoma (Wright & Gesrick, 1996). A remnant of this tribe remained in Nacimiento, Mexico. Health care professionals lacking this historical understanding will be ill-equipped to understand the distrust and animosity they may encounter as they try to improve the health of this group.

Three separated segments of the tribe exist today: the strongly acculturated Kansas Kickapoo, the Oklahoma Kickapoo, who evidence both old traditions and new ways,

and the Mexican Kickapoo, who have continued to migrate to preserve their culture. After living in Nacimiento peacefully for a number of decades, a severe drought that extended through the 1940's forced a new form of survival activities on the Kickapoo – migrant farming (Reid, 1997). In an effort to maintain a livelihood, the Kickapoo began to travel to Wyoming, Utah, Colorado, Idaho, and other states along the agrarian migrant trail (Wright & Gesrick, 1996). The Kickapoo start their year with springtime religious festivals in Nacimiento. In family groups, they initiate the year's economic production on the migrant trail, returning to the Texas-Mexico area in the fall. Kickapoo are known as hard, honest, and thorough workers by their employers (Nunley, 1986).

For many years, the Kickapoo were known for their apparently bleak living conditions in Eagle Pass as squatters under the international bridge. It was at this staging ground for the long road ahead that the Kickapoo built traditional type housing from plywood and tarp (Reid, 1997). Despite hardships like a lack of running water and privacy, the Kickapoo sought to live a proud traditional existence.

In 1983, through the hard work of the tribal council and friends of the tribe like Nakai Bilen and the Native American Rights Fund, the Kickapoo received federal recognition and rights (Bilen, 1983). The tribe became known as the Kickapoo Traditional Tribe of Texas, receiving citizenship and federal aid, and the ability to purchase land. The tribe members are proud of their dual citizenship with Mexico and the United States. In 1989, with the help of donations, the Kickapoo were able to purchase the land for their new home. The Kickapoo now own a 123-acre reservation south of Eagle Pass. According to a 1995 Bureau of Indian Affairs census, population is estimated to be approximately 494 individuals.

The population fluctuates as the tribe migrates for work and to Nacimiento. Through the diligent efforts of the tribal council, the reservation now includes a day care center, administrative buildings, a health clinic, a community center, and a casino. Major expansions of the casino and development of a hotel and golf course will further secure the economic well being of the tribe (MacCormack, 2001). They have come a long way from their struggles under the international bridge in Eagle Pass.

In an effort for cultural survival, the Kickapoo have migrated and moved numerous times in their history. Now, although migration is for economic survival, the act of traveling and working outdoors as a family is a way for the group to remain bonded (Wright & Gesrick, 1996). Today, however, fewer Kickapoo have been following the migrant trail for economic survival. According to Hector Garcia, tribal administrator, more Kickapoo are able to stay in Eagle Pass and work at the casino (Garcia, 2001). However, the expansion of the gambling business has driven a wedge through the tribe and threatens the traditional nature of the Kickapoo (MacCormack, 2001). Economic survival may mean the extinction of the Kickapoo culture.

The land in Mexico has taken on a deeper and more religious and traditional meaning, as that is where Kickapoo return for cultural and religious connections throughout the year. According to tribal elders, "Texas is where we work... Nacimiento is where we go to live our lives as Kickapoo people (Reid, 1997)."

TRADITIONS AND BELIEFS

It is important to understand the nature of Kickapoo traditions, since their identity as a culture is steeped in the spiritual significance of tradition. Because of the complexity of

their culture and religion, it is difficult to analyze without invading the privacy of the Kickapoo people. However, insight into the prominent cultural nuances can aid in understanding the Kickapoo people. Then it may be possible to decipher how to provide necessary health services in an effective manner. Nakai Bilen (1998) informed us that for the Kickapoo people, spirituality and health are connected.

The Kickapoo religion, with intricate ceremonies, is intrinsically linked to their culture. According to Nunley (1986), "series of highly ritualized religious ceremonies served to maintain the cultural integration of Kickapoo society." Some ceremonies involve the use of a sacred bundle, a collection of symbolic items protected by a bundle holder described by Nunley (1986) as the "embodiment of the belief system of the Kickapoo religion." The bundle, wrapped in deer hide contains objects sacred to Kickapoo history and to the spirits of the Kickapoo religion (Latorre & Latorre, 1976). In addition to its central role in numerous ceremonies, the sacred bundle is used in healing ceremonies, drawing upon the "inherent power of the pack (Nunley, 1986)." The Kickapoo believe that noncompliance with the numerous religious traditions, breaking cultural laws, or disregarding taboos can have a negative effect on the physical well being of an individual (Latorre & Latorre, 1976). These beliefs are outside the medical model of most health care practitioners. The boundary between the spiritual and the medical simply does not exist. To ignore, belittle, or deny these connections is to directly attack the culture of the Kickapoo. The same can be said for members of many other cultures who reside in Texas. Illness can provide meaning and purpose for the individual and the culture.

Latorre and Latorre (1976) indicate that herbs are a commonly utilized form of tradi-

tional healing, and their use is by a strict set of traditions. According to Sister Ursula Herrera (1998), patient education coordinator at Fort Duncan Medical Center in Eagle Pass, most Kickapoo first seek medical care from tribal healers before going to a modern health care facility. In this sense, the Kickapoo approach to health care issues is much more similar to the long tradition of shamanism than to allopathic or osteopathic medicine as currently practiced. A common complaint of health care practitioners is that going to these healers first prevents MDs and DOs from beginning an effective treatment in the early stages of a disease. However, from the perspective of a shamanic culture, if illness is a disease of the spirit, then it makes sense to first deal with the spiritual components of the problem before turning to healers primarily trained to work with the body. Taking away this shamanic component may prevent the individual from learning what it is the disease, injury, or disability is trying to teach them. It is within this context that suffering becomes meaningful and becomes something other than pain. The next several paragraphs describe some of the difficulties the Kickapoo are having in maintaining the vestiges of their traditional culture. This information documents the extent to which this culture is radically divergent from mainstream Anglo cultures.

Hunting deer for both subsistence and ceremony has been a part of the traditions of the Kickapoo people for centuries. Hunting is a religious and spiritual activity for Kickapoo men. The actions of hunting, killing, and skinning the deer are directed by specific sets of rituals and are sacred forms of ceremony as prayers of thanks for the deer (Wright & Gesrick, 1996). The ribs of deer are an integral part of the naming ceremonial feast. Until the naming ceremony provides a proper Kickapoo name for the child of a few months of age to a

few years old, they are called “not-yet-named (Latorre & Latorre, 1976).” Without the deer ribs, the leader may refuse to perform the ceremony because of the potential repercussions of not following tradition. Deer ribs are a part of the ceremony because the ribs of deer are the favored foods of the spirits (Nunley, 1986).

Today, the Kickapoo are restricted from hunting the deer. They do not have the means to own their own hunting land, and ranchers and government restrictions prevent the Kickapoo from accessing deer populations. Kickapoo continue to hunt deer illegally; despite regulations, children continue to need to be properly named. Therefore, the Kickapoo face a dilemma; a child needs to be named, but most Kickapoo cannot afford the monetary costs of either legal or illegal hunting. Excessive hunting by all populations in the area has led to an overall decrease in the deer populations. In response to such pressures, the Oklahoma Kickapoo have begun to use commercially purchased turkey ribs to substitute in ceremonies (Nunley, 1986). However, the unacculturated Texas Kickapoo are resistant to adapt to changing customs.

There is no written form of the traditional Kickapoo language. Traditions and history have been passed down in oral form. This affects access to health services since the people cannot read literature or pamphlets on health care (Herrera, 1998). Translators are necessary to communicate. Younger generations tend to be trilingual in Kickapoo, English, and Spanish.

HEALTH OF THE KICKAPOO

The historical experience of the Kickapoo results in distrust and resentment of outsiders as a means of cultural protection. This

aversion, along with the cost of medical care and a lack of communication with health care providers, inhibits the reach of modern health services to the medically under-served Kickapoo. Prevalent health problems include heart disease, diabetes, gastric disorder, and substance abuse (Herrera, 1998).

Several avenues of health care access are available. These include public assistance, the services of the Fort Duncan Medical Center in Eagle Pass, a clinic on the reservation, substance abuse services, and traditional health care. Unfortunately, some well meaning efforts to improve the health of the Kickapoo have led to a worsening of their health.

Public assistance, such as food stamps, Medicaid, welfare services, and WIC programs, has led to changes in the Kickapoo lifestyle. With food stamps, they tend to select high fat and high sugar foods with little nutritional value (Nunley, 1986). This has led to increase in obesity and the related health problems of diabetes and heart disease. In this case, efforts to improve health have led to a paradoxical counter productivity. The welfare system has reduced their wellness.

The tribe can also access health care from the Fort Duncan Medical Center in Eagle Pass. According to Nakai Bilen (1998), this is usually a last resort option due to tensions with the local community and distrust of outsiders. According to Hector Garcia (2001), tribal administrator, traditional health care is still utilized by members of the tribe. This may include the herbal and spiritual remedies of tribal leaders.

On the Eagle Pass reservation is a tribally run Indian Health Services (IHS) clinic. Because it is run by the tribe, the clinic is trusted and respected. Funding is through the IHS. Contracted physicians rotate through the clinic three days a week. The clinic employs Kickapoo. Opened in 1987,

this clinic provides preventative health care, health counseling, and basic health services like internal medicine, obstetrics/gynecology, pediatrics, and psychiatry. Thirty to 40 patients are treated per week. Similar to that of adjacent populations, prevalent health problems include heart disease, diabetes, gastric disorders, high blood pressure, dental problems, and substance abuse. According to Hector Garcia (2001), continued support of the tribal clinic is necessary to improve the health of the Kickapoo. This includes continued education of the tribal members to encourage them to seek care from the clinic. The important lesson here is that members of a culture like the Kickapoo will not seek mainstream medical assistance unless it is a last resort or it is provided by persons they trust. A continued relationship between the clinic staff and the tribal members helps to develop the trust and insight that permits timely medical intervention and prevention. This relationship has become even more important as tribal members have succumbed to various forms of substance abuse, placing ever greater burdens on social and health care systems.

According to the Tribal Counsel, inhalant addiction "threatens to do what 350 years of hardship could not: extinguish the traditional Kickapoo way of life from the earth ("Making a Difference," 1997)." Substance abuse has become a deadly issue for the Kickapoo. Approximately 90 members of the small tribe are addicted to the inexpensive and accessible inhalants ("Making a Difference," 1997). Addicts become outcasts, unable to fulfill economic or cultural expectations. The Kickapoo Healing Grounds is a tribal run program funded by the Texas Commission on Alcohol and Drug Abuse grant secured by Eric Fredlund ("Making a Difference," 1997). The inpatient facility emphasizes long-term treatment with cultural sensitivity. Kickapoo

tribal members are employed to aid in communication with patients. There are few self-referrals, most patients are there as a result of tribal or judicial authority (Ruiz, 2000). According to Orlando Ruiz, certified counselor at the Center for Healing Grounds, continued support and activities by this program are needed to battle inhalant abuse in the Kickapoo tribe.

Limitations of this study include the descriptive nature of relevant information. This study does not examine epidemiological information concerning changing rates of disease within the population or the rates of access to medical services. Continued research needs to be done, possibly by the tribe itself or with involvement of the tribal elders, to examine specific areas of health problems and service limitations and to determine the effectiveness of health services.

Current research on other Native American tribes does provide some guidance in the resolution of cultural autonomy with health care needs of tribal populations. Other tribes in Alaska and New Mexico have taken initiative, through the Indian Self Determination Act, to acquire and run their own hospitals and health plans (Garber, 1999). Noren, Kindig, and Sprenger (1998) suggest a focus on training members of the tribe to take on both clinical and administrative roles. This will ensure culturally sensitive care, better trust between providers and the tribe members, and provides job opportunities for members of the tribe. The Kickapoo tribal leaders must continue to find independent sources of resources and revenue for the tribe to survive economically. Rodenhauer (1994) describes the cultural barriers to mental health care delivery. The author states that to resolve cultural differences that may hinder effective delivery of care, the administrators of mental health care programs need to design the delivery of care around cultural nuances,

administrators and clinicians must be thoroughly educated about the culture, native healers and procedures need to be incorporated into the treatment process, and members must be recruited as employees, counselors, and leaders.

CONCLUSION

The United States is a culture that values diversity. One of the principles necessary to value diversity is learning tolerance. Our nation has a long history of standing for religious tolerance. Yet, the Kickapoo have a history suggesting that within the Anglo culture only certain cultures were valued or tolerated, not a culture like the Kickapoo. As health care practitioners, we find ourselves faced with a culture where religion and healing are inseparable. If we are to live up to our own cultural traditions we must do the work necessary to understand this culture. That is if we are to have any expectation of helping these people meet their health care needs, some of which have been caused by our own interventions in their culture. If those who work with the Kickapoo or other groups like them are to gain the trust needed to be effective, these workers must go beyond simply tolerating the difference. Beyond mere toleration, these health care practitioners must protect and respect the culture of the Kickapoo. This makes the issue of trust paramount and is not something that can be achieved quickly.

This culture includes the integral use of ceremony and ritual to celebrate the religion that is intricately entwined with their daily lives. These spiritual activities and their connections to health and healing, so alien to modern medicine, are what defines the culture. A person focused on the mechanisms of disease and healing who ignores these cultural connections may heal an individual,

but destroy a community. Forced into public assistance by centuries of military defeat, the Kickapoo, to survive as a culture, need health care that respects and honors as well as health care that treats. If the United States culture truly values diversity, then the Kickapoo offer a good place to put those values to work. The Kickapoo, only recognized in 1983 as United States citizens, have been living in poverty and struggling to retain the integrity of their culture in spite of repeated military defeats over several centuries. Major steps have been achieved since public aid has become available, much through their own efforts. Still, language and cultural barriers make it difficult to institute basic preventative health care measures. These strongly cohesive and dedicated groups of people strive to maintain the traditions that define their existence. The Kickapoo need continued efforts to provide public assistance and health services. However, this needs to be done in such a way that respects the cultural nuances of these ancient people and retains their cultural integrity. We believe this descriptive article has also prescribed some of the attitudinal components necessary for this goal to succeed.

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