

# Texas Public Health Journal

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# President's Message

## Dr. Alexandra Garcia



As part of the coalition, our unified efforts to educate legislators and our organizations' members about how proposed legislation will affect public health are more effective than any organization acting alone.

The TPHC, along with countless other organizations and individuals, worked hard this legislative session to improve the public's health. The end of the 83rd Texas legislative session brought mixed success for Texan's health. We can be pleased about several outcomes that Dr. Lakey, Commissioner of Texas Department of State Health Services, highlights in this issue of the Journal. There were also some disappointments. That means that TPHA with our Coalition members and our other partners still have lots of work to do to achieve our common goals. You can learn more about TPHA's and TPHC's advocacy activities at the TPHA website <http://www.texaspha.org>.

We certainly can be pleased about the successful third annual Texas Local Health Department Accreditation Workshop, which we co-sponsored with The Texas Association of Local Health Officials, the University of North Texas School of Public Health, Texas Public Health Training Center, and Public Health Accreditation Council of Texas. It was funded in part by a grant from the American Public Health Association.

The 3-day workshop in May aimed to prepare personnel from local health departments to seek national accreditation. That accreditation demonstrates a department's commitment to improve quality and its accomplishments in meeting national performance standards for service, value, and accountability. This workshop focused on developing documentation systems for the accreditation application, implementation of performance management and quality improvement, and the use of gap analysis to identify areas that need to be addressed before seeking accreditation.

Highlights of the workshop include a presenta-

tion by David Stone, from the Public Health Accreditation Board, about the requirements for accreditation documents. His session contained an exercise to practice new documentation skills. Workshop participants also heard from two newly accredited health departments who described the journeys they took to improve quality. The experiences described and the insights gained were inspiring. Participants evaluated all the sessions very positively.

TPHA has other events planned, which you can read about in this issue. We invite you to join in all the activities and to send your comments or suggestions via the website. Please plan to attend the 90th TPHA Annual Educational Conference in Corpus Christi, Texas at the Omni Hotel, March 24-26, 2014.



### In Memorium: Thomas Lofton Edmonson, Jr. - A Public Health Legend

Tom (R) & Bob 2010:  
"A good day to golf"

Contributed by Tom's very good friend and colleague, Dr. Bob Galvan.

On May 9, 2013, Tom Edmonson passed away leaving an indelible mark on all of us in Public Health. He was a unique individual who loved Public Health and the professionals who worked side by side with him throughout his career. He was a hard working individual who saw every day as a gift and the opportunity to help someone and enjoy life in the process. He never met a stranger and everyone who met him and had the privilege of knowing him, never forgot him. He was well known, not only in Texas, but across the United States and North America as a bright and very astute Environmental and Public Health Professional. He set the standard for professionalism, and, in doing so, helped thousands of individuals through the Public Health programs he directed and managed.

Environmental Health was a natural choice for Tom as he simply loved the outdoors and made it his mission to encourage all to love it too. After graduating from Wichita Falls High School and Midwestern State University, Tom began his professional career with the Wichita

Falls City County Health Department. His many years of hard work and dedication were recognized by his superiors resulting in naming him to the position of Director of the Wichita Falls City-County Public Health Department. During his tenure as Director, he supervised and expanded various Public Health programs that resulted in a better quality of life, not only for the citizens of Wichita Falls, but for the millions of citizens in the State of Texas. As a result, his professional peers recognized him by electing him as President of the Texas Mosquito Control Association and the Texas Association of Municipal Health Officials. For many years, Tom served as Executive Secretary of the Texas Environmental Health Association and the Texas Association of Municipal Health Officials, an affiliate of the Texas Municipal League. At the national level, Tom served as a Regional Director for the National Environmental Health Association representing seven (7) States in the Southwest. Additionally, he served on the extremely prestigious Environmental and Public Health Council for the National Sanitation Foundation, which provided guidance for Environmental and Public Health programs at the national level. Throughout his entire professional career, Tom enjoyed life to the fullest and had an extremely keen wit and sense of humor that always left you with a smile on your face.

Tom was a life-long athlete who lettered in basketball and baseball in high school and in college. His athletic skills took him to the next level where he played semi-pro baseball for several years before returning to Wichita Falls. He loved all sports but especially loved the Dallas Cowboys and the Texas Rangers and would make several pilgrimages to the DFW area each year to see them play. His love of sports was a center point in his life. He was an umpire and called many baseball games for the little league; coached his daughter's softball

team; attended many of the Wichita Falls High School games and attended all of his grandchildren's and great-grandchildren's games. He was an avid golfer and, after his retirement, played several times a week with old friends from high school and former colleagues in Public Health. This love for the game resulted in Tom scoring two hole in ones, something that few golfers ever do. During the warmer months, Tom never passed up the opportunity to play golf whether it be in Wichita Falls, Jacksboro, Munster or other places in the state. This provided him the opportunity to get with old acquaintances and friends and enjoy life and fellowship. One of these special times was when he would drive down from Wichita Falls and meet friends in Jacksboro at the Jacksboro Country Club for a round of golf and then have lunch at the famous Herd's Hamburgers in Jacksboro.

Tom was also an avid outdoorsman. He loved to hunt and fish and every year he would make his annual trip to Alaska to hunt a variety of wildlife with his great friend, Dr. Marion Rice Zetzman. The remainder of the hunting season, he would be with friends or family either in South Texas or Colorado hunting deer or upland birds.

Tom Edmonson was a true Public Health Professional in every sense of the word. Everyone who knew him loved him, respected him and always wanted to be around him. His knowledge inspired individuals and provided insight into problem solving. His personality provided a light-hearted and humorous perspective into a very complex world. However, it never failed, if you were in his presence, you were going to go away a better individual because of him. Tom loved life and he often said that "we needed to live life every day to the fullest because tomorrow is never guaranteed". On May 9, 2013, we lost an incredible individual and a legend in the annals of Public Health in Texas.



## *Commissioner's Comments*

### Legislative Session: Major Support for Public Health

*David L. Lakey, M.D.*

Commissioner, Texas Department of State Health Services



Without a doubt, the 83rd Legislative Session can be seen as a win for public health. The Texas Department of State Health Services and the entire public health community received tremendous support from the Texas Legislature as we work to improve the health and well-being of Texans.

We began preparing well before the session began in January and continued working diligently through late May as our elected leaders met in Austin. We prepared reams of information about our needs, and agency staff frequently made trips to the Capitol to participate in hearings and answer questions from lawmakers about what we do and how we could do it better.

We worked with organizations across the state that have a stake in making sure public health is part of the discussion. When it comes to shaping the future of health in Texas, we are in this together.

In the end, we saw substantial support for public health, specifically for programs that strengthen mental health and substance abuse services, expand comprehensive health care services for women and improve newborn health.

That support can perhaps best be seen in the numbers. The DSHS

budget for the next biennium will be almost a half-billion dollars more than our current budget, growing from \$5.8 billion in 2012-2013 to \$6.24 billion for 2014-2015.

Mental health and substance abuse are significant drivers of health care and economic costs, and behind these costs are individuals and families who need care. With an additional \$332 million in mental health and substance abuse funding over the base budget bill, we can improve the mental health care system by reducing waiting lists for community mental health services and expanding treatment options.

We also received support to provide comprehensive women's health care through the expansion of our Primary Health Care program. An additional \$100 million for the program will provide preventive health services and education, well women checks, cancer screenings and family planning to thousands more people each year. The Texas Legislature also committed \$36 million to maintain family planning services that would have otherwise been lost due to federal actions.

We received significant budget increases also in the areas of adult immunizations, tobacco cessation and prevention, and chronic disease prevention, specifically \$5 million specifically for the Texas Council on Cardiovascular Disease and Stroke.

Thanks to HB 740, newborns will be screened for the most common birth defect in the United States, critical congenital heart disease, before leaving the hospital. The disease is an abnormality in the structure or function of the heart that exists at birth and causes severe, life-threatening symptoms that often require medical intervention within the first few hours, days, or months of life. Early detection can help babies get the treatment they need more quickly.

Through HB 15, the Legislature also has directed the Texas Health and Human Services Commission and DSHS to develop special level-of-care designations for neonatal for maternal care at hospitals. This will be beneficial in helping ensure pregnant women and newborns receive the appropriate level of care and have the best possible outcomes.

These are all positive developments for public health in Texas. The new programs and expansions made possible by state leaders are something to be proud of and will help all of us further our mission. Work has already begun to implement new efforts and expand our reach. We will continue to be good stewards of the resources entrusted to us.

The successes that came from the 83rd Legislative Session were a team effort, and I thank you for what you do every day to make sure public health is visible and to ensure local and state leaders know that public health makes a difference.

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**Texas Public Health Association  
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## The Less Than Glorious Side of Morning Glories

Mathias B. Forrester

Texas Department of State Health Services, Austin, Texas

Morning glory is the common name for over 1,000 species of flowering plants in the family Convolvulaceae.<sup>1</sup> Morning glories of the genus *Ipomoea* grow throughout tropical and subtropical regions; most species are twining climbing plants that can grow several meters tall. Many species have colorful flowers and are cultivated in gardens. Some species, such as *Ipomoea purpurea*, *Ipomoea tricolor*, and *Ipomoea violacea*, contain d-lysergic acid amide (LSA) in their seeds. LSA is approximately one-tenth as potent as lysergic acid diethylamide (LSD); 300 *Ipomoea purpurea* seeds contain the equivalent of 200-300 mcg of LSD. The seeds may be eaten directly, ground up and mixed in a beverage, or soaked in water to produce a tea.<sup>1-3</sup>

Purchase of morning glory seeds is legal in most states.<sup>2</sup> Moreover, morning glory seeds are inexpensive and can be obtained at stores that sell seeds and garden supplies.<sup>1,2</sup> As a result, morning glory seeds may be attractive to recreational drug seekers. Ingestion of morning glory seeds to get high was popular in the 1960s.<sup>2,4-8</sup> And it appears that it is becoming popular once more, particularly among adolescents, who are learning about use of the seeds as a hallucinogenic through such sources as the Internet. Gardening stores have caught teenagers buying morning glory seed packets in bulk or stealing the seeds, and parents are finding seed packets in children's rooms.<sup>2</sup>

Published information on the effects of morning glory seed use is limited, with much of it consisting of old case reports.<sup>4-8</sup> A recent study in Poland examined reports of *Ipomoea* use posted to a recreational drug use website, but this study included at most 21 exposures.<sup>1</sup> Potentially serious adverse effects associated with morning glory seed ingestion include hallucinations or delusions, tachycardia, hypotension, nausea, vomiting, diarrhea, abdominal pain, anxiety, drowsiness, dilation of pupils, and flushing.<sup>1,3</sup> Abuse of morning glory seeds has led to adolescents being seen in hospital emergency departments and calls to poison centers.<sup>2</sup>

There were 45 instances of intentional misuse or abuse of morning glory reported to Texas poison centers during 2000-2012. Although there was no pattern in the yearly number of exposures, there was a seasonal trend with 38% of the cases reported during March-April and an additional 13% in September. Eighty-nine percent of the patients were male. Seventy-one percent were age 19 years or less and 29% 20 years or more; for those 36 patients whose exact age in years was known, the mean age was 17 years (range 10-26 years). This is consistent with the website study in Poland, which found most of the users to be male and in their teens or twenties.<sup>1</sup>

The rate per 1,000,000 population based on the 2000 Census was 1.72 in rural Texas counties and 2.06 in urban counties. Sixty-seven percent of the exposures occurred at the patient's own residence, 18% at school, and the rest at other or unknown locations. In 44 of the cases, the morning glory was ingested; in the remaining case, the

route of exposure was unknown. Twenty percent of the exposures involved other substances in addition to the morning glory.

Forty percent of the patients were already at or en route to a health-care facility when the poison center was contacted, 29% were managed outside of a health-care facility, 24% were referred to a health-care facility by the poison center, and 7% were managed at other or unknown locations. Fifty-six percent of the exposures were known or expected to result in serious outcomes; no deaths were reported. The most frequently reported adverse effects were hallucinations or delusions (29%), vomiting (18%), agitation (18%), tachycardia (16%), nausea (16%), confusion (9%), hypertension (7%), drowsiness (7%), and mydriasis (7%). Other symptoms reported in one or two patients were chest pain, fever, dizziness, cardiac arrest, hypotension, hives, abdominal pain, acidosis, coma, seizures, and coughing. The most commonly reported treatments were dilution (13%), benzodiazepines (13%), IV fluids (13%), and decontamination by activated charcoal (7%). This treatment by decontamination and supportive care is consistent with that reported in the literature.<sup>3</sup>

Morning glory abuse reported to Texas poison centers appears to have been relatively uncommon during the past 13 years, at least when compared to other drugs. By when it did occur, the abusers tended to be males in their teens and twenties. Although the abuse may occur at any time during the year, it is most common in March-April and September, probably because that is when morning glory seeds are most readily available. Although most abuse occurs at home, the next most likely place of abuse is school, suggesting that school officials and nurses might want to be familiar with the phenomenon of morning glory abuse and its consequences. This is particularly important because morning glory abuse may require treatment at a health-care facility and may involve serious neurological, gastrointestinal, and cardiovascular effects.

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## Pediatric Ingestions of Dissolvable Nicotine Products

Mathias B. Forrester

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Cigarette smoking has declined in the United States, at least in part due to tobacco control measures such as increases in cigarette taxes and smoking bans.<sup>1-5</sup> As a result, tobacco manufacturers have diversified into cigarette alternatives such as chewing tobacco, snuff, and snus.<sup>6-8</sup>

Another type of these cigarette alternatives are dissolvable pellets or strips that contain nicotine. These products melt in the user's mouth so the user doesn't need to chew or spit, and there is no second-hand smoke.<sup>9</sup> Dissolvable nicotine products are sold under such brand names as Ariva, Stonewall, and Camel.

There have been claims by some that the dissolvable nicotine products' brightly colored packaging, candy-like appearance, tasty flavors, and easily concealable size might appeal to children.<sup>1,7,9,10</sup> Ingestion of one mg of nicotine by a small child may cause nausea and vomiting; ingestion of large doses may lead to weakness, convulsions, impaired respiratory function, and death.<sup>11</sup> During 2006-2008, 9,550 ingestions of tobacco products by children five years and younger were reported to poison centers nationally.<sup>10</sup>

During 1998-2012, sixteen dissolvable nicotine product ingestions by children five years and younger were reported to Texas poison centers. None of these were reported prior to 2002. Eight of the products were Stonewall brand, seven were Ariva, and one Camel. The patients' age range was 17 months-4 years with 43.8% age two years; 62.5% of the patients were female and 37.5% were male. All of the ingestions were unintentional and occurred at the patient's own residence. Only one of the ingestions involved another substance and that was nicotine gum. The management site was 50.0% managed on site, 18.8% already at or en route to a healthcare facility when the poison center was contacted, and 31.3% referred to a healthcare facility. The medical outcome was 50.0% no effect, 25.0% minor effect, 6.3% not followed but minimal clinical effects possible, 12.5% unable to follow but judged potentially toxic, and 6.3% effect considered unrelated to the product. The reported adverse clinical effects were vomiting (12.5%), tachycardia (6.3%), abdominal pain (6.3%), nausea (6.3%), and agitation (6.3%). The reported treatments were administration of activated charcoal (43.8%), dilution/irrigation/wash (31.3%), cathartic (25.0%), food/snack (12.5%), ipecac (6.3%), and IV fluids (6.3%).

Thus, in spite of the fact that dissolvable nicotine products may appeal to children, so far relatively few accidental ingestions by young children have been reported to Texas poison centers. Moreover, serious medical outcomes were not common.

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## Lessons from History: the 1665 Plague in Eyam, England

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### ABSTRACT

In 1665, bubonic plague arrived in rural Eyam, England with devastating effects. The entire village established a self-imposed isolation in an effort to prevent further spread of the deadly plague. The authors use a comparative epidemiological approach to examine issues and methods addressed by the village in 1665. The etiology and progression of disease from the historical perspective is contrasted against what is known today about the natural course of bubonic plague. Observations are based upon multiple visits to Eyam and the current public health literature. The plague has existed since the time of the Egyptians, and the disease has not been eradicated.

Examining the 1665 Plague in Eyam, England

### INTRODUCTION

Lessons from history can inform health care today. In order to examine the devastating 1665 plague in Eyam, England using a 21st century epidemiological approach, relevant historical benchmarks provide critical details. In 1662 John Graunt, the founder of demography, used bills of mortality to study patterns of death in specific populations in England.<sup>1</sup> Records such as births, deaths, marriages, and wills were kept in the churches. The hearth tax records were

used to determine that 83 families survived the plague in Eyam, England; however, the exact number of deaths is unknown.<sup>2</sup>

Early in the 16th century Girolamo Fracastora wrote a progressive theoretical work "seminaria morbis" [seeds of disease] which was the genesis of germ theory, pre-dating the work of Koch and Pasteur in the mid-1800s.<sup>3,4</sup> The prevailing belief in 1665 was that disease was spread by miasma, a vaporous cloud.<sup>5,6</sup> Religion had a great impact on society, and the majority held a magical belief that the plague was God's punishment for sin.<sup>2,4</sup> Treatments were a combination of salves, herbs, poultices, heat, and lancing of the bubo; however, it was believed that cure could only come from prayer and repentance of sin (Table 1).

### Etiology

The bubonic plague is a vector-borne disease transmitted by fleas carried by black rats.<sup>2,10-12</sup> Rapid spread of disease most likely occurred due to epizootic plague in flea infested rodents; fleas spread to humans for another blood source.<sup>15</sup> The origin of the infected fleas in 1665 has been traced back to flea infested fabric that was transported from London in a tailor's trunk.<sup>2</sup> When the fabric arrived in Eyam, a traveling tailor named George Viccars shook the flea infested fabric

**Table 1. Comparison of 1665 Eyam plague with 2012 global plague data.**<sup>7-9</sup>

	Existing Theory	Treatment	Believed etiology	Incidence per year	Mortality rate
<b>Eyam 1665*</b>	Miasmatic	Salves, Herbs, Poultices, Lancing	Punishment from God	300/700	43%
<b>Globally 2012</b>	Germ	Antibiotics	Yersinia pestis	1,000-2,000/7 Billion	14%

and placed it to dry. This procedure of shaking the fabric is identified as the source of the plague in Eyam. One of the main contributing factors included the time of year. The first death occurred in August 1665, with subsequent deaths following during the warmer months.<sup>2</sup> Other environmental factors included thatched roofs, wood paneled walls, hanging tapestries, unhygienic living conditions, and close proximity of the homes in Eyam. Close human contact was common with as many as nine people sharing one home and contact during the usual practice of attending church.<sup>2</sup>

#### Extent of the Disease

It is estimated that during the years of 1665-1666 approximately 70,000 to 100,000 died of the plague in England.<sup>2</sup> Church records reveal that Eyam had a population of 700, and 300 deaths were attributed to the plague.<sup>2</sup> Risk of disease and death was exceedingly high for the population (Table 1). The burden of disease extended beyond the sheer numbers of deaths. Great tragedy is told of sole survivors losing entire families and extended families. There was no time for grief as rapid succession of deaths forced many to be the sole grave digger having the requisite to bury their dead outside of consecrated ground. To prevent the spread of the plague, the church cemetery was closed to all burials until the villagers had determined the threat was over. This was a great sacrifice on the part of the villagers as the belief was burial in consecrated ground was necessary to go to Heaven. The historical accounts of the plague in Eyam depict a time of great sadness. Yet, the burden of caring for sick neighbors was faced with tremendous faith and hope demonstrated by the villagers.<sup>2</sup>

#### Progression of Disease

The progression of disease from the historical perspective is contrasted against what is known today about the natural course of bubonic plague. Remarkable detail was observed and recorded about the Black Death or the bubonic plague during the 1600s. The first recorded bubonic plague occurred in 1500 B.C. with a description of the bubo in ancient Egypt.<sup>13</sup> Excavating archeologists found fleas and Nile rats that would have carried the plague in Egypt. Historical accounts of disease progression following a flea bite describe massive infection that centered on the lymph nodes, usually in the groin area. This was accompanied by fever, delirium, and a “sickly sweet” cloying sensation in the nostrils with death within 5 to 6 days.<sup>2</sup> Typically treatments were salves, herbal remedies, nostrums, charms, and sweet smelling flowers, pomanders stuffed with herbs to smell, and placing a chicken on the bubo to ripen it and draw off the infection.<sup>2,6</sup>

The Centers for Disease Control<sup>14</sup> reports symptoms of the bubonic plague include a very hot, swollen and painful lymph node or bubo, fever, exhaustion, and history of exposure to a rodent. Onset is usually 2 to 6 days after exposure, and unless treated, it is fatal.<sup>14,15</sup> Today, once the patient is diagnosed, isolation is instituted immediately, and local and state health departments are to be notified post haste.<sup>12</sup> Antibiotic therapy begins immediately after the laboratory

tests are drawn and after 48 hours of antibiotics isolation is no longer required.<sup>15</sup> If the bubonic plague is not treated, it will spread through the blood stream.

#### Public Health Preventive Measures

In 1665, preventive measures were limited to quarantine. Quarantine had been practiced as early as 1377 in a Mediterranean sea port town of Ragusa (now known as Croatia) where laws were passed to protect its citizens.<sup>16</sup> In London during the 1665 plague, quarantine meant confinement of infected and non-infected family members to their homes. The likelihood that the members of the household survived was low, as exposure to those who were ill with the plague was an almost certain death sentence. Due to the high mortality rates it is logical to assume that the majority of cases could be attributed to the pneumonic plague.

Rector William Mompesson and the previous rector Shoreland Adams devised a plan to present to the congregation in Eyam.<sup>2</sup> There were three key elements of the plan: 1) no more organized funerals or churchyard burials; 2) the church should be locked until the epidemic was over with the services to be held in open air; and 3) the greatest decision was to impose a ‘cordon sanitaire’ (boundary to prevent infection) around the village to attempt to prevent the spread of disease.<sup>2</sup> William Mompesson in a sermon to the congregants suggested that they sacrifice as Christ did and remain within the boundary of the village in order not to spread the seed of the ‘Black Death’ to unwitting suspects.<sup>2</sup> Only two families decided to leave, and one man lived outside the village on the hill until the plague passed.<sup>2</sup>

During the open-air sermons a twelve foot distance between church members was maintained.<sup>2</sup> The use of social distancing was very pragmatic and showed great judgment on the part of the rectors. However, the risk of exposure was still tremendous because the plague bacterium can survive for up to one hour, once released in the air via cough or sneeze.<sup>17</sup> Further away in London, theaters and other non-essential establishments where there were mass gatherings were closed to prevent the spread of the plague.

Today there are three main strategies utilized for prevention of the plague: 1) environmental control; 2) education; and 3) early treatment.<sup>12,14,15</sup> Environmental control measures to reduce rodent populations have been successful in developed countries, but a challenge exists in urban and developing countries. Monitoring for plague cases and the use of insecticides and fumigation when cases occur seems to be the best approach in developing countries. Public education measures include removing food and shelter for rodents, surveillance of plague activity in rodents by public health workers, use of insecticides and treatment of cats and dogs for fleas. In the event of exposure to individuals with pneumonic plague, the best prevention is to begin prophylactic antibiotics within two days.<sup>12,15</sup> Additionally, antibiotics can be taken in the case of flea bites after exposure to wild

rodents. Universal precautions must be taken when handling dead animal carcasses suspected of having the plague. Special funeral precautions include universal precautions and no embalming to prevent exposure to contaminated blood.<sup>18</sup> The institution of immediate burials and no churchyard burials in Eyam is in line with current practices.

### Public Policy

During the time of the plague in Eyam, public policy was reached by consensus, and measures were taken to institute a village wide quarantine in an effort to prevent the spread of disease.<sup>2</sup> This was extremely forward thinking for the time period and most probably saved many lives. In an effort to realize how far we have come in public health it is necessary to look back historically and examine events in the context of the knowledge of the day that laid the foundation for current public health practices.

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## Book Review: What to Expect When No One's Expecting: America's Coming Demographic Disaster

Jonathan V. Last, Carol A. Galeener, PhD  
Encounter Books, New York, 2013

Shelves of bookstores are replete with doomsday books foretelling of impending disasters, natural as well as man-made. Few are as provocative or as compelling as Last's book, *What to Expect When No One's Expecting*. Last's premise is that the total fertility rate (TFR), or the average number of children produced per woman of child-bearing age, has been in secular decline among industrialized nations for at least the last century and a half, with only a brief respite in developed countries following the Second World War. This trend was exacerbated as the costs of child-rearing, including the opportunity costs of career women's wages, have skyrocketed. Thrown into the recipe for reduced population growth are: the decline of marriage as an institution; the ready availability of family planning services; and the emergence of public social systems to take care of the ill and the elderly. Last makes no case that these factors are good or bad – only that they have contributed to a long term trend of declining fertility among industrialized nations. As an illustration of how far we have come along on this trend line Last remarks that in parts of the world there is a growing fixation on canines as child-surrogates. Anyone who has raised a child must confess to the occasional wayward thought, held even momentarily, that a cocker spaniel might have been a better option.

As individuals in various populations have elected the relative ease of a life without children or perhaps with just one child, the aggregate effect is that a number of nations have fallen below the 2.1 TFR magic index needed to maintain population levels at replacement level. We have not yet seen the full effects of the fundamental shift

in desired family size because of demographic momentum. Most nations are still growing in population, and they will – until the last generation of above-replacement level reproducers goes to their just reward, after which the contraction will start in earnest. However, a number of European nations as well as Japan are already experiencing population contraction. Last contends that this depopulation bodes no good for nations, and is quite possibly the largest single factor threatening economic and social stability on the world scene. Some of these effects are predictable, for example, the increasing burden placed on ever-smaller cohorts of young workers to maintain the growing elderly segment of the population. In the US we have begun to discuss this change in population structure as a challenge to the Social Security and Medicare systems which must ultimately be met with reduced benefits, higher taxes, technological improvement or some combination of all of these. An aging population will likely demand reduced investment risk and is unlikely to contribute directly to higher total factor productivity which might mitigate the effects of the changing population structure. As the rate of household formation decreases with fewer young people marrying, building homes and starting families, demand for many goods and services decreases save for that of health care.

Some effects are more subtle or at least more indirect and not all are, necessarily, negative. For instance, parents of a single child are far less likely to support wars that will require him or her to be put in harm's way. Labor shortages will tend to force up wages but total GDP will likely decline. Already Germany has a shortage of approxi-

mately one million skilled workers; China is preparing for a contraction in its manufacturing sector. Some people, such as academic Paul Ehrlich, see declining population as a way of saving the earth from the encroachments of a profligate resource-consuming society. Never mind that Ehrlich's 1968 jeremiad, *The Population Bomb*, predicted that within the succeeding decade hundreds of millions of people would starve to death, a prediction that proved so spectacularly wrong that it would be risible save for the fact that the specter of "overpopulation" remains an influence on popular discourse and policy. The predictions have been forgotten while the concept persists as received wisdom.

The temptation is strong to think that the right mix of policies can result in a pro-natalist sentiment that cures all. Last proffers three key thoughts relative to this notion. One is that below a certain level of TFR (which he suggests is 1.5) there is no history to demonstrate

that population can rebound. Effectively the nation commits national suicide by omission. The second key thought is that policies must be sustained over generations -- quick fixes are not possible, while ephemeral policies are ineffective. Finally, people cannot be "bribed into having babies" if they do not want them. Efforts to do so have proven to have modest effects at best.

One factor that Last mentions prominently as an encouragement to potential parents is to reduce the cost of educating offspring. This may mean either reducing costs of traditional education or, more creatively, reducing the need for ever higher levels of education in order to become productive members of society. He suggests that a national testing and credentialing system that is independent of today's higher education establishment could go a long way to ensure that little Johnny will not eventually bankrupt the proud parents.

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## **Texas Public Health Association Accreditation Grant Report (as of June 28, 2013)**

The Texas Public Health Association represents public health workers across the state and therefore the goal of our grant application was not to provide assistance to only one local health department, but to provide support and education to a variety of health departments throughout the state of Texas.

Funding was requested to support the third in a series of accreditation conferences held in Texas with the aim of providing information and useful tools, as well as the benefit of the experience of other health departments to the state and local health departments of our state. All three conferences have been sponsored and co-sponsored by a group of partner organizations in the state, including; the Texas Association of Local Health Officials, the University of North Texas Health Science Center School of Public Health, the Texas Public Health Training Center and of course, the Texas Public Health Association (TPHA). For the conferences in 2012 and 2013, TPHA received funding from the APHA to support these conferences.

The first conference in 2011 provided overview information on the accreditation process, as well as first-hand experience of local and state health departments who were beta test sited for the Public Health Accreditation Board (PHAB). The second conference in 2012 focused on the precursors to accreditation, the Community Health Assessment, the Community Health improvement plan and the Agency Strategic Plan. The 2013 conference, partially funded by the APHA grant, was conceived as a day and a half conference with a focus on the documentation requirements of accreditation, but with the support of our partners, most importantly the Texas Association of Local Health Officials (TALHO), the conference was expanded to a three day format. The first day included presentations and an exercise focused on Performance Management and Quality Improvement. The second day included a didactic and hands on training on the documentation requirements of the accreditation process by a member of the PHAB. In addition, a local health department presented that afternoon on making the accreditation effort an ongoing part of daily operations at their department. The third day included a presentation by a small health department in Texas on their readiness assessment and gap analysis conducted as they looked ahead to the possibility of accreditation. This was followed by a presentation from an official of one of the newly accredited health departments in Oklahoma and this presentation shared a wealth of information from their experience of preparation for accreditation and their movement through the actual process.

There is a great deal of interest in accreditation amongst the local health departments in the state of Texas. The conference this year received very positive reviews and in general a feeling of "we can do this" regarding the areas that were discussed. Issues that were brought up, were the inability of smaller health departments to have dedicated staff whose only mission is guiding the department through accreditation. In most health departments, the accreditation coordination wears multiple other hats which sometimes take precedence over the tasks related to accreditation. Another major area of concern is the fee charged to work through accreditation. Many local health departments do not know where they could find that amount of money.

The 2013 conference was attended by 58 participants who represented 15 Local Health Departments, 3 small, 6 medium and 6 large. Other attendees represented the state health department, 4 academic institutions and 3 other interested organizations.

TPHA will continue to seek funding to provide support of such conferences and other educational possibilities in the future to support the movement towards accreditation in Texas and will investigate potential sources of funds to assist with the cost of accreditation that may not be available at the local level.



# The Role of Non-Operating Revenue in Providing Community Benefit in Not-For-Profit Hospitals in Texas

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## ABSTRACT

Not-for-profit hospitals provide community benefit in exchange for tax exemption. However, not-for-profit hospitals are receiving increased public criticism because of insufficient levels of community benefit provision. Thus, this study examined the effect of financial activities on uncompensated care provision in Texas not-for-profit hospitals from 2007 to 2010. Various regression models (fixed effect and system generalized method of moment) were employed to control for autocorrelation and endogeneity problems. The finding shows that a hospital's provision of community benefit is not tied to market performance of its financial assets.

**Key terms:** operating revenue, non-operating revenue, autocorrelation, endogeneity, system generalized method of moment

## INTRODUCTION

The increase in the number of uninsured people in America is an important public policy concern. According to the United States Census Bureau, the percentage of people without health insurance has risen from 15.7% (45.8 million) in 2004 to 16.3% (49.9 million) in 2010.<sup>1</sup> In particular, Texas has the highest number of uninsured in any state.<sup>2</sup> Almost 27.6% of Texans do not have health insurance. These uninsured rely heavily on health care providers to give health services with free or reduced fees. Accordingly, it is more important for not-for-profit hospitals to play the intended role in the health care safety-net than ever. Not-for-profit hospitals provide a wide array of community benefits, including charity care, in exchange for tax exemption worth an estimated \$12.6 billion nationwide every year.<sup>3</sup> Care for the uninsured is often considered an essential benefit of the not-for-profit hospital. However, not-for-profit hospitals are receiving increased public criticism that they provide insufficient levels of community benefit. Despite a dramatic increase in the number of uninsured, community benefit from not-for-profit hospitals has not increased much over the decades.<sup>4</sup> Previous studies have found that not-for-profit hospitals generally provide less community benefit than expected.<sup>5-6</sup> The community benefit standard of the Internal Revenue Service (IRS) allows not-for-profit hospitals to determine the amount of community benefit they provide.<sup>3</sup> However, to prevent an insufficient level of community benefit, Texas requires not-for-profit hospitals to provide a certain level of community benefit, including charity and government-sponsored indigent health care.<sup>7</sup> They must make community benefit expenditures of at least four percent of the hospital's net patient revenue or equal to at least one hundred percent of the value of benefits the hospital receives as a result of its state tax exemption.<sup>7</sup> If hospitals are not compliant, significant penalties will be imposed.

Considering the substantial variation in the level of community benefit provided by not-for-profit hospitals, it is important to understand what leads to this variation across hospitals. One potential driver of this variation is financial surplus, defined as revenues minus expense.<sup>8-10</sup> Financial surpluses in hospitals arise from operating (patient related) and non-operating (non-patient related) activities. While financial surplus from operating activity is an important aspect of financial strength, financial surplus from non-operating activity is increasingly important for not-for-profit hospitals, since it accounts for an average 35-45% of not-for-profit hospitals' total profit margin.<sup>11-12</sup> Despite the importance of non-operating activity to a hospital's financial strength, there is relatively little evidence of whether non-operating activity contributes to community benefit. A few studies have found an inconsistent or weak effect of financial activities,

including non-operating income, on community benefit.<sup>8,9, 13-15</sup> For example, Thorpe and Phelps evaluated a change from block grants to a matching grant method for reimbursing hospitals from 1981 to 1984.<sup>15</sup> They found that charity care provision was not associated with a hospital's level of income.

Similar findings were reported by Frank and Salkever in their study of Maryland hospitals.<sup>8</sup> They developed the utility maximizing model by merging a pure and impure altruism model and found a weak relationship between income and charity care provision. Further, Gaskin examined the price effect of trust funds on charity care using New Jersey hospital data from 1987 to 1990.<sup>9</sup> He found a weak, positive, statistically insignificant income effect. In contrast, some studies found a positive effect of hospital surplus on uncompensated care. For example, Rosko estimated uncompensated care as a function of hospital surplus, other hospitals' uncompensated care, hospital characteristics, and market conditions using Pennsylvania hospital data from 1995 to 1998.<sup>14</sup> He found that community benefit provision was associated with operating and non-operating surpluses.

Because there are no residual claimants in not-for-profit hospitals, the hospital manager can exercise considerable discretion in how to spend the income from financial activities. Thus, the weak effect of financial activity on community benefit calls for more investigation. Moreover, no study has yet examined the relationship between financial activity and provision of community benefit in Texas hospitals. Therefore, the author built upon the existing literature by focusing the analysis on the effect of the non-operating component of financial revenue on not-for-profit hospitals' provision of community benefit in Texas hospitals from 2007 to 2010. Understanding the relationship between non-operating revenue and community benefit will provide information important for developing policies of future community benefit.

## METHODS

### Data

Texas hospital data from 2007 to 2010 were used in this study. The Center for Health Statistics of the Department of State Health Services provided the hospital level data.<sup>16</sup> Texas hospital data is subset of the American Hospital Association (AHA) Annual Survey data. The AHA Annual Survey data profiles more than 6,500 hospitals throughout the United States. The response rate on the AHA Annual Survey has been more than 70% each year. The survey process is conducted to maximize accuracy and participation (see detailed process in <http://www.ahadataviewer.com/about/data/>). AHA data are used by government agencies, media and the industry for accurate and timely analysis and decision-making.<sup>17</sup> This database contains hospital-specific data on most Texas hospitals and health care systems (except federal government hospitals), including organization location, size, structure, personnel, and hospital.

Moreover, these data contain hospital financial information such as revenue, expense, charity care, and bad debt. The author used uncompensated care, operating revenue, non-operating revenue, and the hospital characteristics of hospital bed size, teaching affiliation, multi-hospital system, and ownership in Texas hospital data as variables in this analysis.<sup>18</sup> This study did not require institutional review board (IRB) approval because this study's subject is hospitals, not humans.<sup>19</sup>

**Variables**

**Dependent variable**

A community benefit is a program or activity that provides treatment and/or promotes health and healing as a response to identified community needs and meets at least one of these community benefit objectives: improves access to health care services; enhances health of the community; advances medical or health knowledge; and relieves or reduces the burden of government or other community efforts.<sup>20-22</sup> Thus, these benefits are not provided for marketing purposes. To measure community benefit, the author focused on the cost of uncompensated care, as previously used.<sup>8,9,13-15, 23</sup> Uncompensated care cost is an overall measure of hospital care provided for which no payment was received from the patient or insurer and was defined as charity care plus bad debt.<sup>24</sup> Charity care is health care provided by hospitals for free or at reduced prices to low income patients, while bad debt is the amount of loss by hospitals and classified as an expense because the debt owed to them cannot be collected.<sup>25</sup>

**Independent variables**

As the key independent variables, operating and non-operating revenues were employed. Operating revenue includes net patient revenue, tax appropriations, and other operating revenue. Non-operating revenue includes investment income, extraordinary gains, and other non-operating gains. Also, hospital (bed size, multi-hospital system, and teaching status) and market (market competition) characteristics were controlled for. Bed size was defined as the total number of licensed beds. Multi-hospital system is a dummy variable indicating system affiliation as reported in the Texas hospital data. Teaching hospital also is a dummy variable indicating provision of education. Market competition is measured based on adjusted discharge. To compute market competition, first, the adjusted discharge was generated by summing the inpatient and outpatient discharge for each hospital. Second, the share of adjusted discharge for each county was calculated. Lastly, this share of adjusted discharge was squared and summed by county to get market competition or the Herfindahl Index (HHI). Other studies also used HHI calculated at the county level.<sup>23, 26, 27</sup> HHI is an economic concept widely used as to measure competition.<sup>23-28</sup>

All cash flow measures were inflated by the Consumer Price Index (CPI) to reflect 2010 dollars. The study sample included 970 pooled observations representing 246 unique not-for-profit, nonfederal general, acute care hospitals in Texas operating between 2007 and 2010. This is unbalanced panel, which means not all hospitals were observed consecutively over the sample period. Some incomplete cases were included because dropping them may have resulted in biased estimates and longitudinal analysis can control for this unbalanced panel data.<sup>29</sup>

**ANALYSIS**

To understand the effect of hospital financial activity on community benefit in not-for-profit hospitals, the author modeled the effect of hospitals' operating and non-operating revenue on community benefit for hospital *i* in county *j* at time *t*. The author controlled for observable hospital and market characteristics such as bed size, teaching status, and system membership as well as competition. Formally, the author estimated regressions based on the following specification:

$$CB_{ijt} = \alpha_i + \beta_1 L.OpRev_{ijt} + \beta_2 L.NonRev_{ijt} + \gamma_1 BedSize_{ijt} + \gamma_2 Teaching_{ijt} + \gamma_3 Multi_{ijt} + \theta_1 HHI_{ijt} + \tau(t) + \epsilon_{ijt}$$

where  $\tau(t)$  is a time-specific effect,  $\alpha_i$  a hospital-specific fixed effect, and  $\epsilon_{ijt}$  a random error. The parameters  $\beta_1$  and  $\beta_2$  capture the change in community benefit with changes in one year lagged operating revenue and non-operating revenue, respectively. The  $\gamma_1, \gamma_2,$  and  $\gamma_3$

parameters measure the effects of the hospital characteristics of bed size, teaching, and multi-hospital member, respectively. Lastly,  $\theta_1$  measures the effect of market competition.

The control variables are important as they may influence the relationship between revenue and community benefit. For example, revenue might have a larger influence on community benefit for larger hospitals. Similarly, hospitals in a highly competitive market will expect lower revenue.

Moreover, the measures of uncompensated care, operating revenue, and non-operating revenue are all financial variables, which means that there may be an autoregressive problem. Thus, this autoregressive problem may lead to biased estimates. Further, an endogeneity problem may occur; non-operating revenue may be correlated with unobserved variables such as amount of donations, restricted endowments, or quality of care. Thus, biased coefficients will result if these problems are not considered. To control for these possible problems (autocorrelation and endogeneity), the author employed system generalized method of moments (GMM). System GMM was developed in the late 1990s to control for autocorrelation and endogeneity problems in economic models and applied to healthcare.<sup>30-32</sup> System GMM uses lagged differences and lagged levels as instruments and shows a lower finite sample bias while providing a substantial increase in precision.

All these models accounted for the clustering error by hospitals so as to address correlation in errors within hospitals. All analyses were conducted using Stata 10.1.

**RESULTS**

Figure 1 shows that uncompensated care increased over the sample period. Uncompensated care slowly increased until 2008, then sharply increased. The slope of charity care and bad debt increased over the sample period. Table 1 presents the sample descriptive statistics. Average annual uncompensated care from 2007 to 2010 was more than \$44 million. Average annual charity care was more than \$10 million larger than the amount of bad debt during the sample years. Operating revenue was almost sixty times larger than non-operating revenue (Table 1).

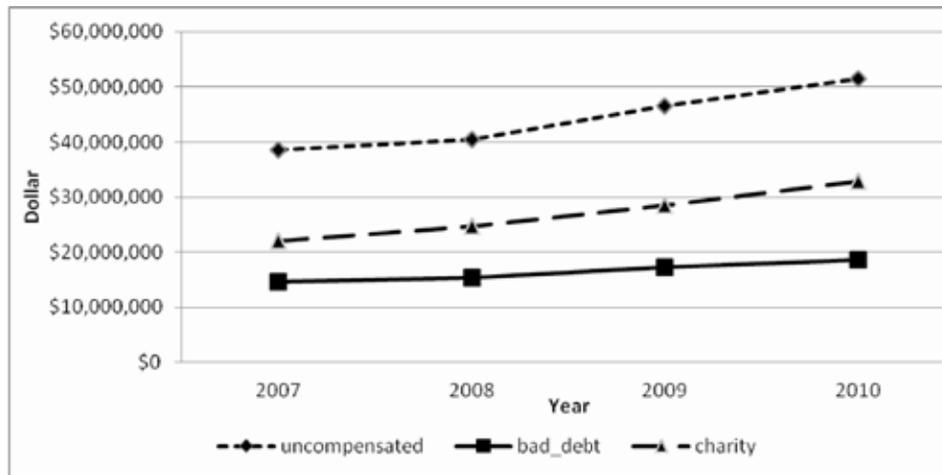
**Table 1: Descriptive Financial Statistics for Not-for-Profit Hospitals in Texas, 2007-2010.**

Variable	Mean	Standard deviation
Uncompensated Care	44,281,619	121,226,574
Bad Debt	16,492,482	35,576,882
Charity Care	26,993,288	87,014,350
Operating Revenue	130,114,091	217,227,993
Non-Operating Revenue	2,186,470	16,034,096

\*All the values are in 2010 US dollars.

The regression results with fixed effect are reported in Table 2. The first column shows the regression results of the effect of operating and non-operating revenue on uncompensated care by hospital and market characteristics. The author found that financial revenues were not associated with providing uncompensated care. However, the author found a scale effect in providing community benefit. For example, community benefit was positively associated with bed size. Also, the author found that market competition was significantly associated with provision of uncompensated care. Lastly, the significant effect of time suggests that uncompensated care is increasing over time. Further, two components of uncompensated care (charity care and bad debt) may respond differently to financial activities. Thus, the author separated the two components and reported regression results for each in the second and third column in Table 2. These individual results were consistent with and did not change the main

**Figure 1: Trend of uncompensated care, bad debt, and charity care of not-for-profit hospitals in Texas, 2007-2010.**



results.

Moreover, the system GMM regression result is reported in the fourth column of Table 2. System GMM regression results confirmed that provision of community benefit was not associated with either operating or non-operating revenue in not-for-profit hospitals.

**DISCUSSION**

Not-for-profit hospitals raise most of their revenue by selling services to paying customers. The sale of these services may result in net revenue. Since there are no residual claimants in not-for-profit hospitals, the hospital management can exercise considerable discretion in how

to spend the income. Some of it will be spent on providing care at a zero or reduced price to customers who would otherwise be unable to pay the marginal cost of care. While it is important to understand how revenue will be spent in hospitals, few studies have examined the effect of financial activity on community benefit provision.

Therefore, this study examined the effect of financial revenue of Texas not-for-profit hospitals on their provision of community benefit from 2007 to 2010. By defining community benefit as uncompensated care and financial revenue as operating and non-operating revenue, this study did not find any significant relationship between community benefit and financial revenue. The results are consistent

**Table 2: Regression Results for not-for-profit hospitals in Texas, 2007-2010**

Model	Fixed Effect			System GMM
	Uncompensated Care	Charity Care	Bad debt	Uncompensated Care
Dependent Variable	Coefficient	Coefficient	Coefficient	Coefficient
	(S.E)	(S.E)	(S.E)	(S.E)
L. Operating Revenue	0.041 (0.093)	0.333 (0.201)	-0.143 (0.118)	0.071 (0.179)
L. Non-operating Revenue	0.015 (0.011)	-0.014 (0.020)	0.013 (0.012)	0.000 (0.014)
Bed size	0.001** (0.000)	0.001 (0.001)	0.002 (0.001)	
Teaching	0.039 (0.069)	0.058 (0.173)	0.089 (0.058)	
System	-0.038 (0.040)	-0.053 (0.079)	-0.001 (0.072)	
HHI	0.884** (0.276)	-0.194 (0.553)	0.685* (0.343)	
Time	0.087** (0.014)	0.163** (0.029)	0.027 (0.016)	
Constant	13.927** (1.582)	8.441* (3.437)	16.843** (1.963)	
P-value of Over ID test (Hansen)				0.245

GMM: generalized method of moment  
L.: one year lagged operator  
HHI: Herfindahl Index  
S.E.: standard error  
\*: p<0.01  
\*\*: p<0.05

with previous studies that found a weak or insignificant effect of non-operating activity on community benefit.<sup>8,9, 13-15</sup>

This result suggests that a not-for-profit hospital's provision of community benefit is not tied to the market performance of its financial assets. Not-for-profit hospitals experienced the same financial crisis affecting other sectors of the economy during the economic recession. Thus, their non-operating revenue may decrease given that more than one third of non-operating revenue comes from interest income.<sup>21</sup> This condition suggests that the provision of community benefit may decrease during an economic recession. However, the findings of this study show that hospitals' provision of community benefit was not associated with this risky financial asset. It means that the community may receive consistent benefit from not-for-profit hospitals despite an economic recession. Many people lost their jobs and health insurance during the recent economic recession. The unemployment rate jumped from 5.4% in 2004 to 9.9% in 2009 and the uninsured rate from 15.7% in 2004 to 16.3% in 2009.<sup>1,33</sup> Such economically weakened individuals may resort to health care at free or reduced price, which could be available in the form of hospitals' provision of uncompensated care. Hospitals could provide this care because the hospitals' provision of community benefit was not affected by the economic recession.

Also, other factors such as hospital mission, history and relationship with its community may be related with the provision of community benefit, even though such factors could not be observed in the data set. However, they were captured in the hospital fixed effect error term, given that they were not much changed over the sample period. Such an explanation makes sense because the author use only three years of data.

Lastly, the author selected county as a unit of analysis related to market competition, assuming that hospitals in a county evenly share patients as a function of hospital size. However, hospital service area may be a more appropriate geographic frame of reference with which to explore the effects of market competition. To take care of this possible biased measure of market competition, the author compared the regression results with and without market competition. However, the author did not find significant difference between them. Given no significant difference between regression results with and without market competition, dropping market competition may result in biased estimation because of endogeneity problem.

## CONCLUSION

In summary, financial activity is not associated with the provision of community benefit in Texas not-for-profit hospitals. In particular, non-operating revenue has no effect on the provision of community benefit. The results are consistent with previous studies.<sup>8,9, 13-15</sup> Also, this result suggests that the level of uncompensated care a hospital provides may be prioritized over other financial investments if non-operating revenue falls with the economic recession. However, such levels may remain fixed even if the non-operating revenue rises with economic growth. Further, this study suggests that understanding the role of financial performance and its efficient use during economic growth is important in determining the community benefit policy.

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# Effective Deployment of an Electronic Health Record (EHR) in a Rural Local Health Department (LHD)

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## ABSTRACT

In 2004, President George W. Bush called for widespread adoption of electronic health records (EHR) within 10 years. Seven years later, after careful deliberation and researching the advantages and disadvantages, Andrews County Health Department (ACHD) decided to transition from paper to an EHR. This article describes the pre-implementation and post-implementation strategies and tactics a team employed successfully to implement the EHR. Lessons Learned: A proactive multidisciplinary team approach is essential for implementing an EHR successfully. To decrease workflow disruption: predetermine a realistic scanning policy; decrease the patient load immediately post-implementation; design some electronic processes to model existing paper practices; be alert and change cumbersome processes because they cultivate work arounds; encourage and promote continual improvement and workflow redesign; select a flexible electronic system; and establish a lab interface if possible. Pre-determined policy may not be adopted by staff because novice EHR users revert to processes learned in the EHR vendor training. In addition successful EHR implementation and use involves: gaining leadership, stakeholder, and end-user buy-in; utilizing a step-by-step process; matching the capabilities of the EHR selected to the staffs' perceived benefits; redesigning workflow with an improvement focus; and ensuring flexibility and capacity for creating documentation components within the EHR.

**Key Terms:** electronic health records, electronic medical records

In 2004, President George W. Bush called for the widespread adoption of electronic health records (EHR) within 10 years.<sup>1</sup> The purpose of the health information technology (HIT) was to improve efficiency, decrease medical errors, improve care quality, and furnish patients and physicians with better information.<sup>1</sup> Despite the call, physicians were slow to adopt EHR technology. A national study conducted from 2007 to 2008 reported 4% of physicians surveyed used an extensive fully functional EHR and 13% used a basic system.<sup>2</sup> Small provider practices (1-3 physicians) had lower rates of using fully functioning EHRs (2%) and basic systems (7%).<sup>3</sup>

A major obstacle to EHR adoption is cost.<sup>3-5</sup> In 2009, President Barack Obama signed the American Recovery and Reinvestment Act (ARRA), allocating \$19 billion to promote EHR implementation by 2014.<sup>6</sup> The Centers for Medicare and Medicaid Services (CMS) developed financial incentives for eligible professionals and hospitals to adopt EHR technology and achieve meaningful use.<sup>7</sup> Incentive program participation began in January 2011.<sup>8</sup> As a result, EHR adoption increased. Surveys conducted in 2009 and 2010 reported 6.9% of physicians use fully functional EHRs and 21.8% use basic systems.<sup>9</sup>

EHR systems have advantages/benefits and challenges/barriers.<sup>4,5,10</sup> See Table 1. Local health departments (LHD) considering EHR adoption must determine the benefits associated with EHR versus a paper record to override the challenges. Andrews County Health

Table 1: Advantages and Disadvantages of Electronic Health Record (EHR)

Advantages	Disadvantages
Improved patient safety and efficiency (immediate access to up-to-date patient information in the office or remote access). <sup>1</sup>	Require back-up systems to prevent data loss, user computer skills, can delete information inadvertently if record is not locked, requires extensive training. <sup>2</sup>
Improved office efficiency (multiple staff can access the record simultaneously, no lost time searching for or retrieving records, only staff with access rights can view the record, legible record, and promotes a more consistent and thorough approach to documentation). <sup>1</sup>	EHRs are not standardized, more difficult to use than paper records, implementation decreases productivity and disrupts workflow (in the beginning). <sup>2</sup>
Potential financial benefits (clear, timely, legible documentation). <sup>2</sup>	Cost. EHR benefits society and payers, not providers, physician resistance. <sup>2,3</sup>
	Cultural resistance and inertia; vendor product immaturity, legal and regulatory benefits; and required infrastructure and lack of standards. <sup>3</sup>

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Department (ACHD) is a small LHD located in rural West Texas. ACHD's 10 fulltime employees and contracted physician provide public health services to county residents and primary health care services to uninsured low-income residents. After careful deliberation and research, ACHD decided to transition from paper to an EHR.<sup>11</sup> This article focuses on how a small LHD established an EHR core team and the strategies the team employed successfully to implement the EHR.

People skills (leadership, communication, and training) are essential to successful EHR implementation.<sup>12</sup> Effective leaders start with a clear vision of the goal, express the vision skillfully, and inspire people to follow.<sup>13</sup> ACHD's leadership played a crucial role in the EHR implementation. The director articulated the vision to stakeholders. ACHD's governing board approved and funded the EHR. ACHD staff and physician were involved in the project's pre-implementation planning phase because project success requires stakeholders support and comprehend the project plan.<sup>10</sup>

The literature review provided multiple strategies and organizing frameworks for EHR implementation.<sup>4,10,14</sup> Adler organized the vital dos and don'ts of implementation into three categories: team, tactics, and technology.<sup>14</sup> Leibel describes four phases to transition from paper to EHR: initiation, planning, implementation, and close-out.<sup>10</sup> Lorenzi et al lists the essential steps to implement an EHR in small practice settings.<sup>15</sup> ACHD followed a step-by-step guide for medical practice EHR implementation.<sup>16</sup> Step one consisted of learning the basics of EHRs. During step two, the staff conducted workflow analyses, compared paper administrative and patient care workflows to EHR workflows, participated in vendor demonstrations, and iden-

tified EHR champions. During step three, ACHD determined the appropriate EHR based on the budget and workflow needs and purchased the EHR. ACHD selected eClinicalWorks (eCW) as its vendor because of the vaccine inventory and management component and ability to meet ACHD's clinical needs. The fourth step addressed the EHR implementation phase: changing from paper medical records to an EHR.<sup>16</sup>

After EHR selection, the director formed a core EHR team to focus on the tasks of the final 15-week pre-implementation period. Team members were recruited based on their current job descriptions and

Table 2: Electronic Health Record (EHR) Team Roles and Responsibilities

Team Member/Job Title	Relationship and skills for tasks	EHR Implementation Role
Clinic Director	Administration	Project Lead/Manager and Clinical Champion
Family Nurse Practitioner	Clinician component	Clinical Champion
Public Health registered nurse (RN)	Tuberculosis, sexually transmitted disease, immunization, and disease investigation expertise	Clinical Champion
Assistant Administrator	Billing	Clinical Champion
Medical Secretary	Front Desk	Clinical Champion
Immunization PICS Outreach Specialist (IPOS)	Immunization vaccine inventory and recall	Clinical Champion
Andrews County Information Technology (IT)	Expertise in IT	IT Support - serves as the systems analyst

Houston SM, Bove LA. 2010. *Project Management for healthcare informatics*. New York: Springer + Business Media, LLC.

potential contributions to the team.<sup>10,17</sup> See Table 2 and Table 3. Team members signed a meeting participation agreement, reviewed the project vision, identified team member talents, defined roles and responsibilities, and developed clear goals with timelines and responsible persons. The team met at least weekly for 15 weeks, answering the questions: What did we accomplish? What are the next steps? List things to do? What went well? And what didn't work?

In a now classic work, Tuckman and Jensen identified four stages of team development: forming, storming, norming, and performing.<sup>18,19</sup> The EHR team reached the performing stage, communicating and collaborating to achieve the project's goals and objectives.<sup>17</sup> Conflict occurred when non-team members resisted the clinic schedule

changes employed to remove organizational barriers to team meeting attendance.

The team reviewed equipment and technical requirements with Information Technology (IT) to determine equipment needs (See Table 4). The clinic staff provided information on workflow needs and space requirements. For example, the team chose computers on wheels for each clinic room, permitting the staff to face the patient during the encounter and allowing for computer use throughout the clinic.

ACHD's core team determined the criteria for successful EHR implementation. See Table 5. ACHD staff reviewed multiple processes and conducted workflow analyses and redesign. In July 2011, stakeholders from ACHD and Texas Department of State Health Services

Table 3: Project Manager and Information Technology (IT) Tasks

Project Manager's Tasks
<ol style="list-style-type: none"> <li>1. Reporting progress to governing board;</li> <li>2. Managing the multi-disciplinary electronic health record (EHR) team;</li> <li>3. Planning, tracking, and managing the project;</li> <li>4. Providing resources to meet the project objectives;</li> <li>5. Coaching and mentoring staff related to assignments, deliverables, and quality;</li> <li>6. Communicating unambiguously the project's vision, goals, and objectives and inspiring team members to accomplish them;</li> <li>7. Organizing activities into manageable timeframes;</li> <li>8. Managing relationships with the team, West Texas HIT REC* and eClinicalWorks; and</li> <li>9. Resolving the project's conflicts and problems.</li> </ol>
The system analyst serves as the.
IT/System Analyst Tasks
<ol style="list-style-type: none"> <li>1. Technology expert;</li> <li>2. Works with vendor to solve hardware and software technology issues, and</li> <li>3. Determines hardware needs</li> </ol>

\* Health Information Technology Regional Extension Center

(DSHS) met to review Texas Health Steps (THS) forms and documentation requirements. Prior to EHR, ACHD staff completed 20 forms during an initial THS visit. ACHD seized the opportunity to redesign and streamline THS documentation in the EHR to avoid transitioning a dysfunctional paper process to electronic format.

The EHR team lacked the system knowledge to pre-determine data entry details (who, what, when, and where). Registered nurses (RN) were charged with entering the history, problem, medication, and allergy lists into the EHR. ACHD scheduled one patient from every program and used the vendor educator to help resolve issues on the go-live day.

Staff training is an essential component of successful EHR implementation. Six ACHD staff attended a two-day EHR conference in June 2011. The agenda topics included: meaningful use; patient

safety; and clinical decision support (CDS), e-Prescribing, electronic medication reconciliation, and computerized physician order entry (CPOE). The ACHD team participated in a problem-solving exercise related to e-Prescribing and was recognized for its critical thinking skills and creative solutions.

ACHD participated in four days of vendor training, including demonstrations and hands-on practice time for front office, RN, provider, and billing staff. The director conducted end-of-day staff meetings to address clinic policy questions and to identify the unanswered how-to questions. ACHD chose a big-bang approach to ensure the team used the EHR daily and consistently. The vendor assigned ACHD a strategic account manager, and provides online access to chat for “how to questions” and fix repair requests.

Table 4: Equipment Needs

Andrews County Health Department's Equipment Needs
- Replace 6 computers (too old to be compatible with electronic health record)
- 6 workstations on wheels (WOW) for clinic rooms
- 2 notebook/tablets
- 2 printers (1 for printing prescription and 1 for patient education)
- New phone line for fax server
- 24 Switch to add more computers to system
- Add 6 hard wires in the clinic area
- 2 Cameras (Medical secretary and eligibility)
- 2 ID Card readers (Medical secretary and eligibility)
- 2 signature pads (Medical secretary and eligibility)
- 4 scanners (Medical secretary, eligibility, patient service area, and immunizations)
- 2 wireless access points (immunization room and patient area)
- Upgrade other computers to 2 Gigs or more of memory\
- 2 label printers and 2 additional regular printers and 7 existing = 11 total

**DISCUSSION/LESSONS LEARNED**

Adler recommends determining a scanning policy and “scanning enough of the chart so that you won’t need to pull paper charts for appointments.”<sup>14,p.36</sup> The core team decided to scan the chart the day before the patient’s appointment, and adopted a standardized nomenclature to access and retrieve the scanned data quickly. The pre-determined scanning policy was too laborious and time extensive. ACHD modified the policy to include the history, medication list, immunization record, the most recent year of progress notes, and lab and x-ray reports.

For successful EHR implementation, Adler recommends decreasing the patient load post-implementation.<sup>14</sup> The core team decided to schedule one patient per hour, but the initial patient intake took two hours because of the cumbersome and time-consuming EHR history-taking format. Cumbersome processes encourage work arounds and decrease efficiency, safety, and consistency.<sup>13</sup> ACHD’s paper history provided structure to the RN’s process for gathering information and

prompted specific questions. The director resolved the issue by rearranging the format to replicate the paper history form and concluded some processes should model existing paper practices.

Throughout the implementation process, the staff was encouraged to inform the director of EHR problems and to write the issues on a flip chart. Six months after implementation, repeating the message and revising processes has finally paid off. RNs identify EHR issues quickly and strive to redesign workflow to improve efficiency. For example, a billing issue arose because the medical secretary could not distinguish between in-house and referral lab ordering in the EHR to assign charges. The RN suggested the director change the lab names to include in-house; this resolved the issue.

New EHR users embrace the system more rapidly if it is easy to use and meets their needs;<sup>4</sup> therefore, flexibility in the system is important. eCW allows providers to use a standard form, existing templates, or create additional templates. The director created a template

Table 5: Criteria for Successful Electronic Health Records (EHR) Implementation.

Criteria for Successful EHR Implementation
- Andrews County Health Department (ACHD) is live with an EHR by October 1, 2011.
- ACHD eliminates paper charting and generates minimal paper forms to add to the EHR.
- ACHD uses the EHR to its best capacity as determined by reassessing and streamlining workflow processes.
- ACHD meets the Stage 1 meaningful use criteria by November, 2012.

for sexually transmitted infection visits and for conducting health risk assessments and preventive health education. Blood sugar and waist circumference were added to the vital signs section, allowing the provider to view the results in the progress notes and decreasing time associated with adding a lab order. The family-planning nurse practitioner (NP) struggled with the EHR's physical exam; a template was created and the NP's patient load matches the pre-implementation numbers.

Pre-implementation policies created by the team were not transferred to the post-implementation state. The novice-to-expert scale provides an explanation for the behavior. As novice EHR users, the staff had no experience and displayed rule-governed behaviors (limited and inflexible).<sup>20</sup> The staff adhered to the how-to learned in the EHR vendor training and focused on the technology, making them oblivious to their clinical expertise and knowledge. The author recommends observing staff perform the EHR processes and identifying barriers, challenges, and mechanisms for improvement frequently to avoid staff frustration, work arounds, and necessity to unlearn behaviors.

Set establishing a lab interface as a priority and receive as much information as possible electronically.<sup>14</sup> Adler cautions that interfaces need skilled IT to manage and do not implement if IT skills are not available.<sup>14</sup> ACHD has no lab interface. Currently, the lab sends reports to a fax server, and the RN attaches the reports to the patient's EHR documents. ACHD is in the process of establishing a post EHR implementation lab interface to assist with meeting meaningful use criteria.

## SUMMARY

The components of successful implementation include strong leadership and vision, policies on key issues, goal setting, planning, and communication in the pre-implementation phase. ACHD's leadership engaged stakeholders and end-users in the pre-implementation process, and focused on managing relationships and teamwork. ACHD staff demonstrated readiness to implement the EHR. The EHR core team played a crucial role in implementation, portrayed a can-do attitude, embraced the vision, created a project plan, understood the clinic needs, and evaluated and redesigned workflows, addressed financial issues, and embraced potential benefits.

ACHD successfully transitioned from a paper to an electronic medical record. The staff continues to engage patients, manage changes, and celebrate achievements. ACHD strives to use the EHR to its best capacity by focusing on continual improvement and workflow redesign. The next step on the road to achieving meaningful use is to implement the patient portal and increase the use of CDS.

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# Public Health Accreditation Board (PHAB) Beta Test Experience of Smaller Local Health Departments

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## ABSTRACT

**Background:** In 2009, the Public Health Accreditation Board (PHAB) conducted a Beta Test to determine the barriers and best practices related to preparing for and implementing accreditation standards, measures, and documentation requirements. In May 2011, PHAB published the final Standards and Measures Version 1.0 for the initial accreditation application period of 2011-2012. The purpose of this study was to describe the experience of smaller rural local health departments (LHDs) participating in the PHAB accreditation Beta Test to determine if it is feasible for smaller rural LHDs to meet the same standards and measures as larger LHDs with substantially more resources.

**Participants:** LHD Directors overseeing public health jurisdictions with populations <55,500 who participated in the PHAB Beta Test.

**Methods:** Recorded telephone interviews using a qualitative phenomenological method.

**Results:** A content analysis identified common elements which facilitated achieving accreditation and common barriers to achieving accreditation. LHD Directors believed small rural LHDs have the capacity to meet the PHAB Standards and Measures, if given enough time; smaller rural LHDs should apply for and achieve accreditation; and PHAB Standards and Measures are flexible and can apply equally to small, medium, and large and rural or metropolitan LHDs. Lack of documentation and documentation organization and storage presented the most common barrier to achieving the PHAB standards and measures. Additional barriers included: lack of formal agreements between the LHD and state health department (SHD) or external agencies conducting services; lack of completion of the three required prerequisites (community assessment, improvement plan, and strategic plan); and lack of quality improvement knowledge. Participants reported lessons learned, recommendations for preparing for accreditation, unexpected events, and staff behavior changes resulting from the process.

**Key Words:** public health accreditation; qualitative study

## INTRODUCTION

In 2009, the Public Health Accreditation Board (PHAB) conducted a Beta Test to determine the barriers and best practices related to preparing for and implementing accreditation standards, measures, and documentation requirements. PHAB selected 30 volunteer health departments (3 tribal, 19 local, and 8 state) from 145 applicants.<sup>1</sup> Beta Test participants represented “small rural, large metropolitan, centralized and decentralized” health departments with varying governing structures and stages of accreditation readiness.<sup>1</sup> Of the 19 participating local health departments (LHD), six served public health jurisdictions of <55,500 populations.

In May 2011, PHAB published the final Standards and Measures Version 1.0 for the initial accreditation application period of 2011-2012.<sup>2</sup> In the fall of 2011, PHAB began accepting applications for agency accreditation. The PHAB Standards and Measures apply to all public health agencies and do not accommodate for differences in resources between large and small LHDs.

A review of the public health literature provided limited research

and quality improvement data regarding the benefits and limitations of accreditation.<sup>3</sup> However, multiple authors reported public health accreditation would improve quality,<sup>4-8</sup> improve accountability,<sup>4,6-8</sup> result in consistent and reliable measures,<sup>4,6,9</sup> strengthen public health law,<sup>8,10</sup> and boost the organizations' visibility.<sup>5,6,8</sup> The question of whether smaller rural LHDs could meet the same standards and measures as larger LHDs with substantially more resources was not adequately addressed in the literature. The purpose of this study was to describe the experience of smaller rural LHDs participating in the national PHAB accreditation Beta Test and to assess the capacity of smaller rural LHDs to meet the same standards and measures as larger LHDs with substantially more resources.

## METHODS

The investigators employed a qualitative phenomenological method to describe the lived experience of the smaller LHD Beta Test participants. Phenomenological method requires affirmatively answering two questions: 1) Is further clarity of the phenomenon needed? And 2) “Will the shared lived experience be the best data source for the phenomenon under investigation?”<sup>11</sup>, p 88 First, there was a need for further clarity of the phenomenon because at the time of the study no LHDs had achieved accreditation and the investigators found no published data on the experience and capacity of smaller LHDs applying for PHAB accreditation. Second, the LHD directors who experienced the PHAB Beta Test could provide the “richest and most descriptive data.”<sup>11</sup>

In June 2011, the investigators obtained Texas Tech University Health Sciences Center Institutional Review Board (IRB) approval for the study. The study population included six LHD directors overseeing public health jurisdictions with populations <55,500 who participated in the PHAB Beta Test. Purposive sampling was employed. The sample consisted of four of the six LHD directors. The first four LHD directors contacted by an investigator agreed to participate in the study. In July 2011, the same investigator conducted telephone interviews with the four LHD directors. The participants gave informed consent. Participants responded to 20 questions: seven questions related to LHD demographics and background and 13 open-ended qualitative questions related to the LHD's accreditation PHAB Beta Test experience, barriers, and lessons learned. See Table 1: Sample Questions.

The interviews were transcribed, summarized, and interpreted through content analysis. A preliminary data review demonstrated data saturation after four interviews, in that only minor additional data was gained with the final interview. Participant and agency identifying information was deleted from the transcripts to maintain confidentiality. For the purpose of rigor, the interpreted transcripts were returned to the LHD Directors for their review and approval to reduce potential bias and ensure trustworthiness of the data analysis and credibility of the results. For the purpose of confirmability, two investigators reviewed the transcripts and analysis and verified the common elements that facilitated achieving accreditation and common barriers to achieving accreditation.

Table 1: Sample Questions

Questions
How would you describe your Beta Test accreditation experience?
What do you think about PHAB Standards and do you think they apply to small LHDs?
Describe which standards were the most difficult to meet? Why?
What are the barriers to accreditation?
What were the lessons learned?

PHAB = Public Health Accreditation Board  
LHD = Local Health Department

## RESULTS

The participants provided data related to the following categories: applying for the Beta Test; role of the governing body in the process; the participants' Beta Test experience; accreditation cost estimates; status of the prerequisites (community health assessment, community health improvement plan, department strategic plan); the easiest and the most difficult standards and measures to meet; unexpected events; perceived barriers to accreditation; most difficult processes associated with accreditation; lessons learned; application of standards and measures to small LHDs; changes as a result of participating in the Beta Test; expectation to apply for accreditation; and resources. See Tables 2 – 5 for details.

Table 2: Common Positive Elements and Benefits Identified by the Participants.

Positive Element/Benefits
Smaller LHDs could achieve the PHAB accreditation standards and measures documentation despite the identified barriers if given enough time; the standards and measures were flexible and applied equally to small, medium, and large LHDs. Quote: <i>The standards and measures are flexible and apply in that they allow flexibility to demonstrate that you do something, so the focus is not just how you are performing or achieving a certain standard or measure.</i>
Provided a sense of purpose and direction for the LHD.
Increased community support for the LHD.
Realization that accreditation does not directly assess the quality of services provided.
Identified the LHD's strengths and weaknesses

PHAB = Public Health Accreditation Board  
LHD = Local Health Department

The lived PHAB Beta Test experience was described by one participant as: ... an opportunity ... my intent was to prove that the process was going to be extremely detrimental to small health departments because I could not conceptualize how a one size fits all tool could be applicable to health departments as small as us and you guys (11 employees), compared to (LHD) that has 1200 FTEs. What actually happened was that the process in itself proved that it is doable and by being able to participate and being selected, specifically for me, it was an opportunity that I far underestimated the impact as far as the ability to see public health from a whole different perspective that otherwise we at the local level do not get on a routine basis. All the smaller rural LHDs believed the PHAB standards and measures were flexible and accreditation could be accomplished despite barriers if given enough time.

The participants reported multiple documentation issues. They described conducting but not documenting the tasks associated with the Standards and Measures. For example, staff attended meetings with partners or community members regularly but did not document the meeting content, objectives, and outcome, list of attendees, and date. The LHD directors raised multiple questions regarding the Beta Test documentation. See Table 6.

The participants stressed the importance of PHAB delineating the documentation requirements to demonstrate compliance with the standards and measures when another agency conducts the service. PHAB requires "formal documentation of the partnership of assignment of responsibility to others (MOU {memorandum of understanding}, letter of agreement, contract, legislative action, executive order, ordinance, or rules/ regulations)."<sup>12</sup>, p. 7 The LHD applying for accreditation is required to ensure the contracted agency is performing the tasks as delineated in the formal agreement.<sup>12</sup> At the time of the interviews, one LHD Director was working with the state

health department (SHD) to draft agreements.

Most of the small rural LHD directors were reluctant to estimate staff resources, time, and costs based on the Beta Test because the participants only identified if documentation was present or not. If the LHD did not have the documentation, the staff did not create a plan to implement the measure, which will be necessary to achieve accreditation.

One LHD reported experiencing difficulty meeting every proposed Beta Test standard and measure because of a lack of centrally located policies and procedures. Three of the participants identified achieving the quality improvement (QI) standards and measures as difficult. All Beta Test participants received technical assistance from the National Association of County and City Health Officials (NACCHO) for the QI study. Staff received training on continuous QI and QI methodology, but the smaller LHDs reported not having a QI expert to analyze data. The LHDs reported the NACCHO website contains excellent QI reference materials. For smaller rural LHDs who did not participate in the Beta Test, achieving QI competence and a culture of QI may present a daunting task without training and consultation.

Three domains (community promotion and improvement, enforcing laws and regulation, and maintaining competent public health workforce standards) made both the easiest and the most difficult standards to meet lists. The variability in the easiest and most difficult standards and measures to meet appears to be attributed to the difference in the LHDs' staff, expertise, programs, and services provided. The LHDs attributed the success of standards and measures achieved to clearly documented policies and procedures for administrative functions and onsite LHD programs and to a developed website meeting the public access criteria for providing information. Collaboration with other agencies and the SHD will be essential for smaller rural LHDs to meet the PHAB standards and measures.

Smaller rural LHDs may not have the in-house expertise or resources to complete the prerequisites (community health assessment, community health improvement plan, and department strategic plan). Only one LHD director reported completing the prerequisites prior to the Beta Test by contracting with another agency to complete the community assessment and community health improvement plan. The three other LHDs had or planned to begin a community health assessment. One LHD reported actively updating the agency's strategic plan every six months. A second LHD created a strategic plan using examples from other agencies posted on the NACCHO website. Participants recommended collaborating with community partners (hospitals, health care providers, SHD) and universities or colleges including schools of public health to conduct the community health assessment and improvement plan. The LHDs identified the public health foundation and the prevention institute as excellent sources for public health evidence-based practice information.

## DISCUSSION

The majority of national Beta Test participants experienced documentation issues.<sup>1</sup> In response to documentation questions and issues identified from the Beta Test, PHAB compiled and published a document entitled: National Public Health Accreditation Documentation Guidance.<sup>12</sup> Although the PHAB guide addresses many of the documentation issues, the investigators believe when the public health activity is conducted by an outside agency, formal documentation of partnerships or assignment of responsibility will be time consuming and challenging endeavors for small rural LHDs.

The evaluation of the Beta Test conducted by National Opinion Research Center (NORC) at the University of Chicago provided some

Table 3: Common Barriers to Meeting the PHAB Standards and Measures

Themes	Quotes
Lack of completion of the three required prerequisites (community health assessment, community health improvement plan, and department strategic plan.	<i>Had not done the (prerequisites) ...and the prerequisites ... are the building blocks of this process; The assessment we had was more than five years old ... we had a community strategic plan that was old as well ... I used NACCHO's website ... examples for our strategic plan; Yes, we conducted a community assessment but didn't meet (PHAB) expectations. ... we didn't consider all the data and the people we brought together were not ... representative of the community ... it raised an expectation of certain things that we would do that we had no capacity to do. ... We didn't have measurable objectives ... not quantitative enough.</i>
Lack of required data documentation.	<i>We had some documentation but we didn't have everything. So often in public health we are reactive... we take care of things... but seldom write a paragraph about this meeting was done on this day...what was discussed and what was the outcome.</i>
Lack of documentation organization and storage.	<i>We had a poor filing system and did not document a lot of things we had done; I knew we had done something but could not find it in our system with some in paper and some online... we learned a lot about our lack of organization; Each division had their own policies and procedures system in place and there wasn't any central process.</i>
Lack of quality improvement (QI) knowledge and expertise and limited QI activities.	<i>At the time we didn't have any QI; We're still naïve to QI...at this point...we're project based, we don't have a continuing culture of QI, just isolated QI projects...as part of being a beta, we're required to do a QI project but don't have that sustained effort; NACCHO gave us technical assistance on QI during the beta test process ... keeping documentation of ...where did you start, how did you end, was there improvement... what changes did you make along the way...</i>
Unclear accreditation cost estimates.	<i>No costs were determined; I did not determine accreditation costs...you had to provide some information but I did not keep that information. So I don't know what it cost for the time it took.</i>
Lack of agreements, MOU, or contracts for standards and measures provided by the SHD or an external agency.	<i>No, had no contracts, formal agreements or memorandum of understanding; You had to show (the service provided by another agency) was being done and the linkage was occurring... (for example) a call log showing when somebody calls in, what they wanted, who received the call, that the providing agency was called, ... shows that you know how to hook people up with those that do (the service).</i>
Lack of resources; updated computer technology and technological support at SHD and LHD level to meet staff competency requirements; and limited expertise in some PHAB Domains.	<i>Manpower. Money. Knowledge of what we've never done before. For us we are looking at the (prerequisites as a) huge first segment of the journey ... the staff really understands that is something we've lacked. ... we're getting tired of chasing funding to help with our limited finances.</i>

PHAB = Public Health Accreditation Board

NACCHO = National Association of County and City Health Officials

MOU = Memorandums of Understanding

SHD = State Health Department

LHD = Local Health Department

information on the cost of accreditation that the smaller LHDs were reluctant to reveal.<sup>1</sup> The Beta Test evaluation revealed the most time consuming task for the sites was collecting documentation.<sup>1</sup> Beta Test participants expected to take 4-9 months to complete the self-assessment, which includes selecting and gathering the documentation to meet the standards and measures.<sup>1</sup>

Beta Test participants reported that the accreditation coordinator spends more time than other team members preparing for accreditation.<sup>1</sup> The accreditation coordinator will need to dedicate 50%-100% of their work time to accreditation, have a “good sense of the department overall, be detailed orientated, and have enough “authority to enlist the support of their coworkers.”<sup>1, p.14</sup> This study identified that

the smaller the LHD the more likely the accreditation coordinator was the LHD director. The investigators believe one issue with using the small rural LHD director is he or she is likely a nurse who per information on the cost of accreditation that the smaller LHDs were reluctant to reveal.<sup>1</sup> The Beta Test evaluation revealed the most time consuming task for the sites was collecting documentation.<sup>1</sup> Beta Test participants expected to take 4-9 months to complete the self-assessment, which includes selecting and gathering the documentation to meet the standards and measures.<sup>1</sup>

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Table: 4 Easiest and Difficult Standards to Meet/Lessons Learned

<b>Easiest Standards</b>
Administrative capacity and governance.
Emergency preparedness.
Board of health law.
Public health enforcement.
Community involvement and engagement.
Educating and informing about health issues.
Determining the health status of community.
Diagnosing and investigating health hazards.
Public health workforce and cultural competency.
<b>Difficult Standards</b>
Quality Improvement. Quote: <i>Quality improvement and research because at that time we didn't have anything; We didn't have a community assessment or an improvement plan; All of them were difficult. The reason being is that we had stuff all over the place. To prepare for our full accreditation, one of the things that we're doing is having a central depository, where all our policies and procedures will be.</i>
Community Assessment.
Community promotion and improvement standards.
Ensuring evidence-based practice and research.
Enforcing laws and regulation.
Maintaining a competent public health workforce.
<b>Lessons Learned</b>
Document and date all evidence of agency activities, especially LHD meetings, public notification, issuance of news releases or information, and keep it accessible.
Document the names of staff attending all meetings, the date, the list of attendees, and the message.
Organize the LHD's data documentation and storage to allow for easy access and constant updates.
Recognize that the LHD may forfeit essential accreditation expertise if the accreditation coordinator resigns and has not engaged the staff in developing and implementing the accreditation plan. Quote: <i>Yes, they (PHAB) trained the person (accreditation coordinator) doing the beta test. When she walked out the door she took her training.</i>
PHAB = Public Health Accreditation Board
LHD = Local Health Department

of their work time to accreditation, have a “good sense of the department overall, be detailed orientated, and have enough “authority to enlist the support of their coworkers.”<sup>1, p.14</sup> This study identified that the smaller the LHD the more likely the accreditation coordinator was the LHD director. The investigators believe one issue with using the small rural LHD director is he or she is likely a nurse who performs direct services, disease investigations, administrative duties, and fills in wherever the need arises. Adding accreditation coordinator duties to this position will tax the individual. Each small LHD will need to evaluate its staff to select an accreditation coordinator, most likely without the luxury of a new position.

Limitations of the study include transferability of results as knowledge gained may not be generalized to other LHD settings, and results can be influenced by investigator personal biases and idiosyncrasies.

Test participants expected to take 4-9 months to complete the self-assessment, which includes selecting and gathering the documentation to meet the standards and measures.<sup>1</sup>

Beta Test participants reported that the accreditation coordinator spends more time than other team members preparing for accreditation.<sup>1</sup> The accreditation coordinator will need to dedicate 50%-100% of their work time to accreditation, have a “good sense of the department overall, be detailed orientated, and have enough “authority to enlist the support of their coworkers.”<sup>1, p.14</sup> This study identified that the smaller the LHD the more likely the accreditation coordinator was the LHD director. The investigators believe one issue with using the small rural LHD director is he or she is likely a nurse who performs direct services, disease investigations, administrative duties, and fills in wherever the need arises. Adding accreditation coordina-

tor duties to this position will tax the individual. Each small LHD will need to evaluate its staff to select an accreditation coordinator, most likely without the luxury of a new position.

Limitations of the study include transferability of results as knowledge gained may not be generalized to other LHD settings, and results can be influenced by investigator personal biases and idiosyncrasies. Transferability refers to the likelihood that the study's findings have meaning to others in comparable circumstances. Determination of the use of the information remains with the potential users of the findings rather than the investigators.

## CONCLUSION

In conclusion, lack of documentation and documentation organization and storage presented the most common barrier to achieving the PHAB standards and measures. Also identified was a lack of formal agreements between the LHD and SHD or external agencies conducting services. Three of the four participants lacked the prerequisites (community health assessment and community health improvement plan). The prerequisites are time-intensive activities and will present both time and resource problems for most smaller rural LHDs. In spite of these issues and other identified barriers, all participants believed that given enough time smaller rural LHDs have the capacity to meet the PHAB Standards and Measures, should apply for and achieve accreditation, and that PHAB Standards and Measures are flexible and can apply equally to small, medium, and large and rural or metropolitan LHDs.

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Table 5: LHD Director Recommendations and Unexpected Events

Recommendations
Complete the readiness checklist before applying for accreditation.
Review the Standards and Measures, Version 1.0 page by page and retrieve the required documentation.
Schedule weekly meetings with the accreditation coordinator to identify issues and assess progress.
Do not contract for accreditation service. Quote: ... <i>there were a lot of things we hired people to do ... and contracted out ... it's silly to make copies ... and send it to someone ... you do all the work and they get paid for doing nothing.</i>
When implementing a new program or service, the director should consider the associated policies and agreements necessary for accreditation.
When an external agency conducts the service, the director should frequently verify the service is occurring and evaluate the existence of a detailed formal agreement delineating the LHD's and the other agency's roles and responsibilities.
Engage multiple LHD staff in the data collection process. Quote: <i>One of the things we did find out during the (Beta) Test site (visit) ... is that as they interviewed some of the other staff they thought of other things that demonstrated compliance with the standards and measures that I might have forgotten.</i>
Unexpected Events
Resignation of accreditation coordinator
Beta Test networking opportunities
Impact of Quality Improvement. Quote: <i>I think the best way to get buy in from those resistant to change in your organization is to involve them in a QI process; where they help to examine the situation and help to change the process. I think that's what's good about QI.</i>
LHD staff began searching for different methods to improve how the LHD does business.
LHD = Local Health Department
QI = quality improvement

Table 6: Participant questions related to Accreditation Beta Test Documentation

Questions
What format for submitting documentation should be used?
If the LHD has an exemplary program, could the LHD use it to meet multiple standards and measures?
Can the LHD continue to submit the same document when it corresponds with what is being asked?
What is the best way to demonstrate the documentation requirements when another agency performs the task?
What documentation is sufficient to demonstrate compliance when the SHD or another agency performs a particular standard or measure?
How does the LHD demonstrate a task is done?
How does the LHD document and prove the SHD performs certain activities?
Should the contracting agency submit the documentation?
Would MOUs, agreements, or contracts provide sufficient evidence that the contracting agency has met the requirements?
How detailed an agreement is necessary?
Should the LHD invite external partners providing the standards and measures to attend the accreditation site visit?
MOU = Memorandums of Understanding
SHD = State Health Department
LHD = Local Health Department

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# Gap Analysis to Determine a Small Local Health Department's (LHD) Compliance with the Public Health Accreditation Board (2011) Standards and Measures Version 1.0

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## ABSTRACT

Public health departments across the nation are in varying stages of public health agency accreditation readiness. To assess a rural West Texas local health department's (LHD) readiness for national accreditation, Andrews County Health Department's staff conducted a gap analysis to compare the LHD's policies, procedures, and practices to the Public Health Accreditation Board (PHAB) Standards and Measures Version 1.0 (2011) documentation requirements. Method: Quality Improvement Gap Analysis. Setting: LHD serving a population jurisdiction of <15,000. Results: Twenty-seven (28%) measures were partially met, 39 (40%) were not met, 21 (21%) required collaboration with the state health department, and 11 (11%) required technical assistance. The LHD partially met the majority of the administration and management domain measures. Most gaps resulted from not implementing the three required accreditation prerequisites (community health assessment, community health improvement plan, and department strategic plan); lack of documentation of public health enforcement monitoring activities and access to care issues; and the lack of a performance management system to monitor organizational goal achievement. Conclusion: Gap analysis was a useful planning methodology to determine a small LHD's readiness for national accreditation. The LHD staff believes achieving agency accreditation is a realistic goal for the future and estimates taking five years to meet all identified gaps.

**Key Words:** public health accreditation; gap analysis

## INTRODUCTION

The United States' path toward public health agency accreditation originated in 1988 with the Institute of Medicine (IOM) Study for The Future of Public Health.<sup>1,2</sup> In 2009, the Public Health Accreditation Board (PHAB) conducted a Beta Test to pilot the public health accreditation process and standards and measures.<sup>3</sup> The Beta Test participants represented "small rural, large metropolitan, centralized and decentralized" health departments with varying governing structures and stages of accreditation readiness.<sup>3</sup> The process culminated in the fall of 2011 when PHAB launched the national public health accreditation program using the Standards and Measures Version 1.0 for the application 2011–2012 period.<sup>4</sup> The accreditation criteria consists of 12 domains, 32 standards, and 98 measures that apply equally to small, medium, and large local health departments (LHD).<sup>4</sup>

Health departments across the nation are in varying stages of accreditation readiness. To determine readiness for public health agency accreditation, Andrews County Health Department (a small, rural West Texas LHD serving a population jurisdiction <15,000) developed an agency assessment process methodology. A quality improvement gap analysis tool was created to assess the LHD's compliance with PHAB's Standards and Measures Version 1.0 to use in conjunction with the PHAB readiness tools to provide the foundation for developing a plan to achieve accreditation.

The PHAB National Public Health Readiness Checklists assess if the LHD meets the eligibility requirements and determines the LHD's status related to completing the three prerequisites, establishing the recommended accreditation processes, and determining organiza-

tional readiness by completing the tasks to prepare for accreditation.<sup>5</sup> In contrast, a gap analysis is a quality improvement process employed to determine an organization's performance issues and is the starting point when challenged to improve the organization's business results or employee performance.<sup>6</sup> The gap analysis establishes the base for determining the time, money, and human resource investments necessary to accomplish accreditation.<sup>7</sup>

## METHODS

Gap analysis is an internal organizational assessment to determine performance deficiencies specific to each PHAB standard and measure. The gap analysis process includes three steps.<sup>8</sup> Step one is to determine the standards. Step two assesses the organization's compliance with the standards. Step three uses the information to create an action plan to meet the determined gaps. When applied to assessing accreditation readiness, gap analysis provides a mechanism to determine the LHD's current documentation status compared to the PHAB Standards and Measures Version 1.0 required documentation. The difference between the LHD's current and required documentation determines the performance gap.

The investigators created a gap analysis tool to compare the LHD's current practices, policies, and procedures to the PHAB's (2011) Standards and Measures Version 1.0. The tool listed the domains, standards, measures, documentation requirements, and assessment criteria. The assessment criteria included: met, partially met, did not meet, required technical assistance, or conducted by the state health department (SHD).

Five of the ten full-time LHD staff (including the director) participated in the gap analysis evaluation. The staff reviewed each domain, standard, and measure to: 1) determine if the LHD met, partially met, or did not meet the standards and measures documentation requirements; 2) identify the standards and measures requiring collaboration with or technical assistance from the SHD or other agencies for the purpose of achieving public health agency accreditation; and 3) identify the standards and measures conducted by the SHD or other agencies. Determining a standard as partially met required staff consensus that the LHD's example met the PHAB measure's documentation criteria. Determining a standard as not met required staff consensus that the LHD had no documented example meeting the PHAB measures documentation criteria. Identifying a measure as needing technical assistance required group consensus that the LHD did not have the internal knowledge capacity to meet the measure and needed external assistance.

Texas Tech University Health Sciences Center Institutional Review Board approval was not required for the quality improvement gap analysis process; it was determined the gap analysis process falls under the domain of program review.

## RESULTS AND DISCUSSION

The gap analysis revealed: of the 98 total PHAB measures, the LHD partially met 27 (28%) measures, 39 (40%) measures were not met, 21 (21%) measures SHD performed, and 11 (11%) measures required technical assistance. Table 1 provides the number of measures for

each standard the LHD partially met, did not meet, required technical assistance, or the SHD performed. Andrews County Health Department had gaps in performance in all 12 Domains.

The LHD partially met the majority of the Domain 11: Maintain administrative and management capacity standards and measures. For example, the LHD had partial documentation for six of the seven measures related to developing and maintaining operational infrastructure to support the performance of public health functions (Standard 11.1), and for all four of the measures related to establishing effective financial management systems (Standard 11.2). The LHD's documentation emerged from the multiple administrative and financial policies and procedures in place.

The performance gaps stem primarily from not initiating the three accreditation prerequisites (community health assessment, community health improvement plan, and department strategic plan); lack of documentation of conducting and monitoring public health enforcement activities (Standard 6.3, Public Health Laws) and assessment of access to care issues (Standard 7.1, Access to Care); and the need for a performance management system to monitor achievement of organizational goals (Standard 9.1, Quality Improvement). For example, the LHD partially met two of the 11 measures of Domain 1: Conduct and disseminate assessments focused on population health status and public health issues facing the community. Partial documentation

existed for Standard 1.2: Collect and maintain reliable, comparable, and valid data that provide information on conditions of public health importance and on the health status of the population. The LHD has not engaged the public health system and community in identifying and addressing health problems through collaborative processes (Standard 4.2, Domain 4). The LHD had no documentation for the seven measures for Domain 5: Develop Public Health policies and plans (Standards 5.2 and 5.3).

The gap analysis revealed documentation is a major problem for the Andrews County Health Department. The LHD did not have readily available or retrievable documentation in paper or electronic format to totally meet any of the 12 domains, 32 standards, and 98 measures. At times the LHD identified examples for meeting some of the measures but had not documented the examples. Additionally, the LHD does not have a centralized documentation system to store and organize the standards and measures documentation.

The SHD performed many of the measures under Domains 1 (Assess), 2 (Investigate), and 10 (Evidence-based practice). The SHD regional office, not the LHD, receives public health preparedness funding, performs the majority (11 out of 15) of associated Domain 2 (investigate health problems and environmental public health hazards to protect the community) measures, and maintains the all hazards emergency operations plans. Domain 1 consists of collecting,

Table 1: Results of a Gap Analysis to determine the readiness of a local health department (LHD) to apply for Public Health Accreditation Board (PHAB) accreditation

12 PUBLIC HEALTH ACCREDITATION BOARD (PHAB) DOMAINS	MEASURES				
	Partially Met	Not Met	SHD *	TA†	Total
1. <b>ASSESS:</b> Conduct and disseminate assessments focused on population health status and public health issues facing the community	2	4	5		11
2. <b>INVESTIGATE:</b> Investigate health problems and environmental public health hazards to protect the community	3	1	11		15
3. <b>INFORM &amp; EDUCATE:</b> Inform and educate about public health issues and functions	4	2	1		7
4. <b>COMMUNITY ENGAGEMENT:</b> Engage with the community to identify and address health problems	1	1		2	4
5. <b>POLICIES &amp; PLANS:</b> Develop public health policies and plans	2	8	2		12
6. <b>PUBLIC HEALTH LAWS:</b> Enforce public health laws	1	5		4	10
7. <b>ACCESS TO CARE:</b> Promote strategies to improve access to health care services		6			6
8. <b>WORKFORCE:</b> Maintain a competent public health workforce	1	1		1	3
9. <b>QUALITY IMPROVEMENT:</b> Evaluate and continuously improve processes, programs, and interventions	2	5			7
10. <b>EVIDENCE BASED PRACTICE:</b> Contribute to and apply the evidence base of public health		1	2	1	4
11. <b>ADMINISTRATION &amp; MANAGEMENT</b> Maintain administrative and management capacity	10			1	11
12. <b>GOVERNANCE:</b> Maintain capacity to engage the public health governing entity	1	5			6
<b>TOTALS</b>	27	39	21	11	98

\*SHD = State Health Department

†TA = Technical Assistance

maintaining, analyzing, and disseminating the community's health status data; the SHD performs five of the 11 measures. Domain 10 consists of understanding and promoting the use of research results, evaluations, and evidence-based practices; the SHD performs two of the four measures.

A major barrier to achieving the PHAB standards and measures was the lack of formal agreements between the LHD and the SHD outlining all activities performed by the SHD. For example, the LHD has formal contracts for services it provides with SHD funds such as the immunization contract, which has written objectives with clearly delineated LHD's roles and responsibilities. However, for the measures performed by the SHD as part of the public health preparedness funding, the LHD has no documentation of exactly what or how the regional SHD performs these activities and if the actions meet the criteria stated in the PHAB Standards and Measures.

The Andrews County Health Department staff identified multiple technical assistance needs related to: 1) engaging the public health system and community in identifying and addressing health problems through collaborations (Standard 4.1); 2) reviewing and updating existing public health laws (Standard 6.1), and educating individuals and organizations on the benefits of and complying with public health laws (Standard 6.2); 3) documenting staff competencies for public health positions (Standard 8.2); 4) identifying and using best practices (Standard 10.1); 5) developing and maintaining an operational infrastructure to support the performance of public health functions (Standard 11.1); and 6) maintaining operational definitions and statements of public health roles, responsibilities, and authorities (Standard 12.1). The LHD staff identified the Texas Association of Local Health Officials (TALHO) and National Association of County and City Health Officials (NACCHO) as potential sources for meeting the technical assistance needs. The NACCHO website Toolbox provides examples of health department accreditation activities. The Texas Department of State Health Services (DSHS) is funding a public health school to work in conjunction with TALHO and the Public Health Accreditation Council of Texas (PHACT) to assess LHD accreditation readiness and needs.

PHAB acknowledges that technical assistance coupled with training and preparation for all levels of the accreditation process are important components to the LHD's overall success in seeking accreditation. Although PHAB developed detailed written guidance on the accreditation process and the standards, measures, and documentation, PHAB does not provide technical assistance concerning activities to meet the standards and measures nor will PHAB evaluate specific documentation to determine if the information meets a particular measure. LHDs seeking technical assistance should turn to consultants or membership organizations.

These findings of gaps and barriers to LHD national accreditation concurred with findings of interviews by the authors with four of the six directors of smaller LHDs participating in the PHAB Beta Test.

## CONCLUSIONS

Gap analysis was found to be a useful planning methodology to determine a small West Texas LHD's readiness for national public health agency accreditation. The authors believe gap analysis in conjunction with the Readiness Checklist is an appropriate methodology for all LHDs planning to identify and address gaps in readiness for accreditation. The gap analysis provided both general and specific areas the LHD must address in order to successfully apply for accreditation. The assessment provided a foundation for the LHD to identify needed resources (time, personnel, funding) and to create a strategic plan to achieve accreditation.

Multiple small and medium-sized LHDs in Texas work with the Regional DSHS office to provide public health services. For example, the majority of LHDs in Region 9/10 do not house epidemiology staff and rely on DSHS to provide these essential public health services. Consequently, many LHDs will require formal agreements with the SHD to document meeting the standards and measures conducted by the SHD. Also, the LHD will need to develop processes to ensure the agreements are in place, implemented, evaluated, and updated periodically. The LHD plans to document the standards and measures requiring collaboration and then begin a conversation with the SHD related to establishing formal agreements.

The LHD's next steps to prepare for accreditation include: 1) creating an electronic documentation and storage system, and implementing policies requiring the staff to document activities and file it in an electronic format; 2) completing the PHAB readiness checklists; 3) creating a plan to address the measures with identified gaps; and 4) initiating the process to complete the three prerequisites. The LHD will use the PHAB spreadsheet<sup>9</sup> (available on the website) for organizing the accreditation support documentation and determining the responsible person. Based on the gap analysis results, the LHD staff believes achieving agency accreditation is a realistic goal for the future. The LHD estimates taking five years to meet all identified gaps. Achieving the standards and measures will provide a current community health assessment, community health improvement plan reflecting community needs and a LHD strategic plan, and assist the LHD in providing needed, consistent, and quality services to the county residents.

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# Reducing Sexually Transmitted Disease (STD)/Human Immunodeficiency Virus (HIV) Rates Among 13-18 Year Olds: Improving the STD/HIV Curriculum Administration in Dallas County

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## ABSTRACT

**Objective:** To determine the extent to which sexually transmitted disease (STD)/human immunodeficiency virus (HIV) prevention education is currently provided by Dallas County independent school districts (ISDs) and what opportunities exist to improve STD/HIV prevention education for the 13-18-year age group in the county.

**Methods:** A purposive sample of 16 administrators responsible for STD/HIV education in the districts was invited to complete an online questionnaire between February 28 and March 22, 2012. Quantitative data was collected using statistical reporting software. Thematic content analysis was employed for open-ended responses.

**Results:** The assessment found that 67% of Dallas County ISD participants have an STD/HIV education curriculum available for student participation. Dallas County ISDs have a 64% parental consent approval rate. Thirty percent of STD/HIV courses offered have instructors with a degree/education in health education, nursing, or public health; 48% do not; and 22% of the courses have some instructors with and some without this educational background.

**Discussion:** There is a lack of parental consent for student participation in STD/HIV education classes. There is also a need for school districts to provide comprehensive STD/HIV training for course instructors. Dallas County Health and Human Services (DCHHS) recommends that a Dallas County convener step forward to form a Teen STD/HIV Education Collaborative to facilitate increasing the parental consent rate for STD/HIV education.

**Key Words:** sexually transmitted disease (STD) education, human immunodeficiency virus (HIV) education, health education, health curriculum, teen health

## INTRODUCTION

Dallas County has alarming sexually transmitted disease (STD) and human immunodeficiency virus (HIV) rates among our youth. In 2010, there were 35 new diagnoses of HIV infection in persons between the ages of 13 to 18 years in Dallas County, which represented 4% of the total new diagnoses in all age groups. There were also 11 new diagnoses of primary/secondary syphilis infections in persons between the ages of 13 to 18 years, which represented 6% of the total new diagnoses in all age groups in Dallas County. In the same year, there were 1,269 gonorrhea diagnoses in persons between 13 to 18 years old, which represented 25% of the total diagnoses in all age groups in Dallas County. Furthermore, there were 3,996 chlamydia diagnoses in persons between the ages of 13 to 18 years in 2010, which represented 26% of the total diagnoses in all age groups in Dallas County.<sup>1</sup>

Dallas County Health and Human Services (DCHHS) conducted an assessment to determine trends and opportunities in STD prevention education in Dallas County. Understanding these trends allows the independent school districts (ISDs) in the county to consider being active agents in decreasing these rates of infection despite limited available resources. The assessment among the ISDs in Dallas County sought to answer the following questions: 1. *To what extent is STD/HIV prevention education currently provided by local school districts in our community for the 13-18-year age group?* and 2. *What opportunities exist to improve STD/HIV education in our community for the 13-18-year age group?*

According to the National HIV/AIDS Strategy for the United States and the 10 year agenda of Healthy People 2020, the HIV epidemic affects all Americans and continues to be a major public health issue. With this in mind, DCHHS ensured that the planning of this assessment was aligned with both of these national frameworks. The applicable Healthy People 2020 Objectives addressed by this assessment include those regarding reducing incidence and transmission of chlamydia, gonorrhea, syphilis, and HIV.<sup>2</sup>

## METHODS

The assessment provides detailed information regarding STD/HIV prevention education offered to the 13-18-year age group in Dallas County ISDs. This represents an evaluation of how STD/HIV education is being administered, not an assessment of curriculum content. A purposive sample of 10 administrators responsible for STD/HIV education in the ISDs was invited to complete an online questionnaire between February 28 and March 22, 2012. Administrators held positions such as assistant superintendents for health curricula, health services directors, and nursing coordinators. The questionnaire contained ten questions, some with multiple subparts. Questions requested information on full and partial STD/HIV education courses offered, methods of parental notification of STD/HIV education, and facilitators and barriers to student participation in STD/HIV education. Online administration of the survey permitted skip logic for non-applicable questions. The 10 anonymous administrators who participated represented 57,369 students in the 13-18-year age group in Dallas County, and school districts ranging from small to large. All 16 school districts in Dallas County were invited to respond. Due to the intended small sample size, quantitative data only up to the percentage level was collected using statistical reporting software. Qualitative thematic content analysis was employed for open-ended responses. While there was no anticipated risk to participants, DCHHS received institutional review board approval and responsible conduct of research training for examining STD/HIV prevention in our community.

## RESULTS

The assessment found that the majority of Dallas County ISD participants have an STD/HIV education curriculum available for student participation (67%). Half of the ISD participants did not report on the percentage of distributed Parental Consent Forms that were returned by the students. Of the ISDs that reported this information, an average of 79% of parental consent forms distributed are returned by the students. An average of 81% of these parental consent forms that are returned approve student participation. Therefore, Dallas County ISDs have a 64% parental consent approval rate. Some participants cite parental attitudes as barriers to participation.

Of the STD/HIV and related courses offered, 30% have instructors with a degree/education in health education, nursing, or public health; 48% do not; and 22% of the courses have some instructors with and some without this educational background. Otherwise, the instructors have a degree, education, or training in: science, family and consumer sciences, physical education, abstinence-based education, district training prior to implementing the curriculum, and/or

parenting and paternity awareness state training. Lastly, full courses on STD/HIV were not cited to have designated textbooks. Many courses with STD/HIV objectives (not full courses) have a specific chapter on the subject, although some do not. More data are needed concerning textbooks due to limited responses to this question.

## DISCUSSION

Dallas County ISDs appear to be effectively sending STD/HIV education notices home, and courses are available, but there is a gap in positive parental responsiveness for student participation. There also remains a need for school districts to provide comprehensive STD/HIV training for course instructors. In Texas, local school health advisory councils (SHAC) assist the district in ensuring that local community values are reflected in health education instruction; and a district must consider the recommendations of the SHAC before changing the health education curriculum or instruction.<sup>3</sup> Therefore, DCHHS has scheduled SHAC presentations of the assessment findings for consideration in Fall 2012.

Prior research has found that while human sexuality education in schools is limited, STD/HIV prevention education should start in 6th grade.<sup>4</sup> Teacher training ensures that accurate health information is being taught to students. Researchers also found that many United States schools use a combination of a school-based instructor plus an outside agency consultant, such as a local health department, to teach human sexuality courses.<sup>5</sup> This approach proves to increase health information accuracy. However, there is limited information available about the extent to which school-based instructors are trained to deliver human sexuality education.<sup>6,7</sup>

There is a lack of consent by parents for the students to participate in human sexuality education. There are several factors that may contribute to the lack of consent, including: 1. The student does not give the consent form to the parent or return the form back to school, 2. The parent does not understand the consent form, or 3. The parent does not want their child to participate. Schools need the support of the community to encourage and educate parents and students on human sexuality information.<sup>4,8,9</sup>

An overview of Dallas County STD/HIV statistics and the assessment findings were presented to Commissioner's Court on May 15, 2012. Based on key findings and opportunities revealed, DCHHS recommends that a Dallas County convenor step forward to form a Teen STD/HIV Education Collaborative. Here are the four action items this critical collaborative can accomplish: 1. Form a partnership of community-based organizations (CBOs) to improve STD/HIV education among 13-18-year-olds in Dallas County. CBOs, including churches, should work with each other and with parents to encourage consent for student participation in school STD/HIV education. 2. Lead parental focus groups/surveys to determine where the gap in parental consent for course participation might exist: student transmittal home, parental approval barriers, student transmittal back to school, etc. The collaborative should also benchmark districts with lower STD/HIV rates among 13-18-year-olds to inform focus group/survey questions. The focus group/survey should evaluate whether parents are unaware of the issue, unengaged and why, considering consent, they have specific reasons not to give consent, or have specific reasons to give consent.<sup>10</sup> 3. Analyze findings and publicly report them. Consider reporting to SHACs, School Boards, and Superintendents; and share findings with DCHHS, and 4. Encourage charter schools and private schools to conduct assessments of their current STD/HIV education programs for the 13-18-year age group.

Based on the assessment key findings and opportunities, DCHHS also recommends the following for Dallas County ISDs: 1. Consider

requiring Health beginning in the 6th grade, and require this course at least through the 8th grade. 2. Conduct teacher interviews to assess sufficiency of textbook and classroom resources for STD/HIV education. Lastly, 3. Further explore the disconnection and impact of "requiring" a course that addresses STD/HIV that has a contradictory option for students/parents to opt out.

Now is the time to take action. Dallas County has alarming rates of STDs and HIV rates among the 13-18-year age group. CBOs, school districts and administrators, and parents must unite to effectively deliver the message of STD/HIV risks and prevention through health education for teens in Dallas County.

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