A STRATEGIC PLAN TO STRENGTHEN AND TRANSFORM PUBLIC HEALTH IN NEBRASKA: A REVISION

Developed By

The Turning Point Public Health Stakeholders Group

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- Creating a culture of wellness
- Becoming the trusted source of state health data
- Addressing health disparities
- Providing budget transparency
- Devising a media and education plan

The Turning Point Stakeholders Group appreciates Dr. Schaefer's leadership, support, and vision of public health.

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Foreword

Background and Purpose

In 1997, the Department of Health and Human Services received a Turning Point grant from the Robert Wood Johnson Foundation. This grant provided the impetus to initiate a process for developing Nebraska's first State Public Health Improvement Plan. The Plan was approved in November of 1999 by the Nebraska Community Health Partners Stakeholders Group which included representatives from many diverse organizations. This plan was the impetus for tremendous changes in the delivery of public health in Nebraska. The initial Stakeholders Group agreed to develop a plan, not knowing whether or not there would be any funding to implement the plan. Through meticulous planning and good fortune, the group implemented many aspects of the first plan. The Master Settlement Agreement (national tobacco settlement) occurred at an opportune time. Public health advocates and the Nebraska Unicameral wisely saw the need to use the Tobacco Settlement dollars to enhance the public health infrastructure across the state. As a result, all counties in Nebraska are served by a local public health department. Prior to this time, only 22 counties of 93 had health department coverage. It was fortunate that these new health departments joined our seasoned departments because our nation faced a major challenge after the September 11, 2001 attacks on the World Trade Center and the Pentagon. Our state and national leaders realized how vulnerable many areas of our country were. Nebraska, for example, was consistently at the bottom of the list of states in terms of public health spending, and the state lacked basic communication and tracking systems to respond to man-made or natural disasters. That has now changed. The country has since faced smallpox and anthrax scares, and emerging diseases such as SARS and West Nile Virus have captured the attention of the public and public health professionals. Currently, the threat of pandemic influenza that could be as devastating, or even more devastating than the 1918 pandemic, is moving public health professionals to action.

Because of these changes, Nebraska is now seen as a leader in many aspects of public health planning and communication. The Public Health Association of Nebraska was selected as the outstanding affiliate of the American Public Health Association in 2001. Our former governor, Mike Johanns, and our first Chief Medical Officer since Turning Point, Dr. Richard Raymond, have gone on to serve as Secretary of the United States Department of Agriculture and Undersecretary of Food Safety at USDA, respectively. Dr. Raymond also served as president of the Association of State and Territorial Health Officials. Numerous journal articles and national presentations have been published and presented touting the major strides taken in public health in Nebraska since the first Turning Point Plan. Three of our current local health directors, Bruce Dart, Jeff Kuhr, and Kay Oestmann, received the outstanding project award at the National Public

Health Institute in North Carolina in 2006. In short, Nebraska has much to be proud of in terms of the advances that have been made in public health over the past several years.

We, however, realize that in the current climate, public health in Nebraska faces many serious challenges due to the changing demographic, economic, social, cultural, and political environments. Fortunately, these changes mean enhanced opportunities to strengthen and transform public health at both the state and local levels. In order to take advantage of these new opportunities, both the public and private sectors at the state and local levels need to work collaboratively. Such collaboration will improve the health of all individuals in Nebraska and strengthen the partnership between state and local agencies.

This document is intended to be a blueprint for improving the public health system in Nebraska. The purpose of this strategic plan is to identify a new vision for public health in Nebraska. The plan will outline strategic directions and identify the resources that are necessary to achieve the vision. If this plan can have a similar impact as the last plan, then Nebraska can continue to be a model for other states.

The recommendations in this plan are geared toward both the private and public sectors. The plan assumes that one of the necessary ingredients for improving the health status of our population is to focus more on prevention-based strategies. The traditional focus has been on medical, treatment-oriented strategies. Although the medical model is vital to the health of our state, it cannot have the broad impact that a public health model which is focused on prevention can have. This shift in emphasis from curative to preventive paradigms can best be accomplished by improving the capacity for delivering public health services at both the state and local levels. Both models are important, and they both need each other to fully succeed. For example, if a safe and inexpensive vaccine for preventing AIDS were discovered through medical research, that would be a great discovery, but only if the public health workforce can promote, organize, implement, monitor, and evaluate the delivery of this great discovery. George Bernard Shaw once said, “It is odd that they pay a surgeon handsomely to amputate a leg but nothing to save a leg.” It is the job of public health professionals to do their best to prevent injuries, diseases and illnesses—to “save the leg”. It is important to emphasize that this plan is only a blueprint that will provide the template for gradual changes over time. Timely modifications will be needed to respond to the rapid forces of change in the health care environment in the next five years.

Process for Developing the Plan

The process for developing the present revision was very similar to the approach used previously. In the fall of 2005, the Turning Point Public Health Stakeholders Group was established. This group consists of 40 representatives from many diverse organizations. A list of the representatives is provided on pages 3-5.

In its first two meetings, the committee identified the strengths and weaknesses of the Nebraska public health system. Using this information and several other reports, the committee then formulated seven action strategies for change. Staff from the Office of Community Health Development in the Division of Public Health began to identify the key issues as well as the barriers-to-change related to each strategy. Once this analysis was completed, draft recommendations were developed and presented to the group.

The preliminary draft of the plan was approved by the Turning Point Public Health Stakeholders Group on April 7, 2008. After a public review and comment period, the plan was approved on July 22, 2008.

Implementation of the Plan

The Turning Point Public Health Stakeholders Group will be responsible for guiding the implementation of the plan. They will be directly involved in disseminating the plan and promoting the recommendations to their colleagues and partners. The Group members will also be involved with reviewing and monitoring the progress of the plan. Within DHHS, a Public Health Team will focus on implementing the recommendations that pertain specifically to DHHS.

Chapter 1
The Role of Public Health in Nebraska

Introduction

Improving the health of all people in Nebraska has long been recognized as an important policy goal. In 1869, the Nebraska Legislature in its first session gave authority to cities of 3,000 or more population to establish a Board of Health. In 1891, the Legislature created a State Board of Health. These early efforts were primarily focused on controlling the spread of infectious diseases such as smallpox and influenza. Over the years, public health has evolved into many areas and programs. These areas and programs pervade into several spheres of life and are aimed at improving and preserving the health of all members in our community. Barry Levy, the past president of the American Public Health Association (APHA), has succinctly pointed out, "Many public health activities are invisible – you do not see them, but you see their results throughout the day."[1] Many people in public health were content with being this invisible force in the background, but to remain invisible can also mean to become truly invisible because of lack of support and funding. Modern public health needs to do a better job of informing and educating the public about what they do and why they do it.

For example, many of us take it for granted that our drinking water is safe. Because of restaurant inspections, we can sit in a nonsmoking area or a smoke-free establishment and can be assured that our food is safe to eat. If there is an outbreak of a foodborne illness (e.g., salmonella), public health workers find the source of the contamination and minimize the adverse impact on the community. Public health agencies develop many disease prevention and health promotion programs to encourage us to follow healthy lifestyles. Public health also provides a variety of direct services such as immunizations, prenatal care, breast cancer screening, well child care, nutrition, and reproductive health clinics. Most of these activities and services maintain a low profile or low visibility unless there is a major crisis, but they are vital to the health of the public.

The Definition and Core Functions of Public Health

Public health encompasses many activities and functions and for that reason there is not a universally accepted definition of public health. In this plan, public health is defined as an organized process which protects and promotes physical and mental health and prevents disease, injury, disability, and premature death. Public health services are population-based services which are focused on improving the health status of the entire population as opposed to the treatment of individuals. In addition to a population-based focus, public health has several other unique features. Some of these include:

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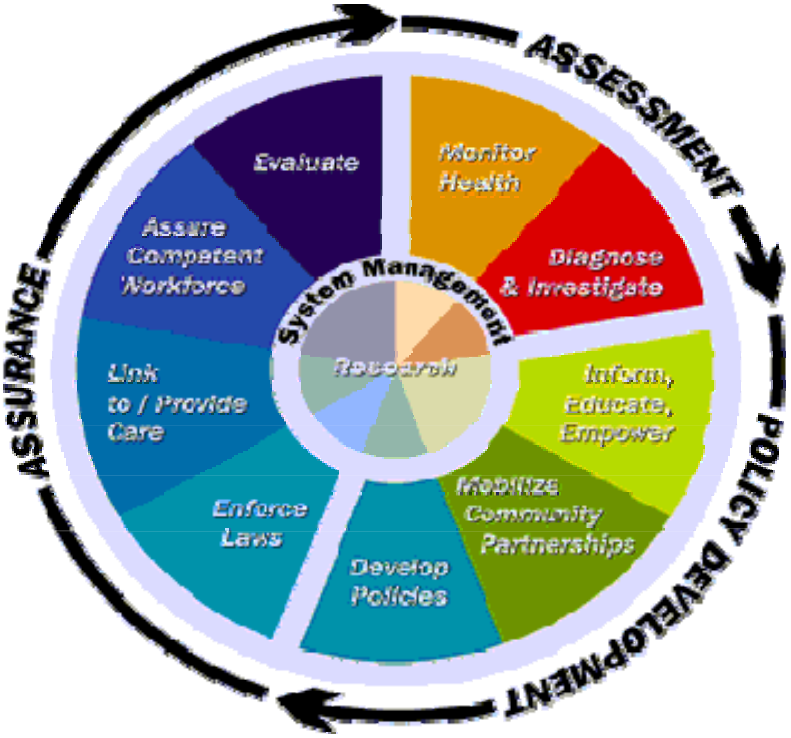
[1]Levy, B. (1998). Creating the future of public health: Values, vision, and leadership." *American Journal of Public Health*, *88*(2), 188-192.

- A focus on prevention as a prime strategy for improving and preserving health.
- A collective policy decision-making process that involves collaboration among broad public interest groups and diverse constituencies.
- Intervention strategies and health policies that are based on accurate and timely data and have a grounding in the basic sciences of epidemiology, biostatistics, environmental science, management sciences, and behavioral and social sciences.

In a 1988 report, the Institute of Medicine identified three core functions of public health: assessment, policy development, and assurance.[2] The core functions are the foundation of public health and they are closely linked with one another in a continuous cycle. The relationship between the core functions and 10 Essential Public Health Services is shown in Figure 1-1.

FIGURE 1-1

The Relationships between Core Public Health Functions and the Ten Essential Public Health Services



The assessment function involves the collection and analysis of information to identify important health problems. These problems may involve water quality, the use and

[2]Institute of Institute of Medicine (1988). *The future of public health*. Washington, DC: The National Academy Press.

abuse of tobacco and alcohol, or the disparity in health status between the white population and racial and ethnic minorities. Once the important health problems have been identified, the policy development function focuses on building coalitions that can develop and advocate for local and state health policies to address the high priority health issues. The assurance function makes state and local health agencies as well as health professionals (e.g., physicians) responsible for ensuring that programs and services are available to meet the high priority needs of the population. These services and programs can be provided directly or through other public or private agencies. The assurance function also involves developing the administrative capacity to manage resources efficiently, implementing prevention and health promotion programs to modify individual behavior to improve community health, and evaluating programs and services to determine the efficiency and effectiveness of these efforts. The results of measuring the impact of various intervention strategies, regulatory activities, and current health policies can be used during the next assessment process.

In 1994, a work group representing several national public health organizations came together to describe more definitively the core functions and to provide a framework for characterizing the modern public health practice. This framework is known as the Essential Public Health Services and helps to explain how public health does what it does.[3]

Essential Public Health Services

1. Monitor health status to identify community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect health and ensure safety.
7. Link people with needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public health and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovate solutions to health problems.

The Determinants of Health and the Impact of Public Health

In order to develop healthy communities, there must be a clear understanding of the major determinants of the general health of the population. Although a healthy

[3]Public Health Functions Steering Committee (1994). *Public Health in America.* Washington, DC: U.S. Public Health Services.

community should make high quality medical care available to everyone, there are many other factors that contribute to "good" health. Each of the major determinants of health is described below. Along with these descriptions, the potential role and involvement of public health agencies and programs is briefly elaborated.[4]

Socioeconomic Conditions – There is a direct relationship between many socioeconomic conditions and health status. For example, poverty, unemployment, lack of housing, and lack of education have often been associated with poorer health status in Nebraska and in other parts of the country. In addition to these challenges, many racial and ethnic minorities also face discriminatory and cultural barriers as well as lower levels of health insurance coverage. Through systematic data collection and analysis, the role of public health is to help identify and report health problems that may be related to socioeconomic conditions. Some communities have also relied on community health nursing and public immunization clinics to assist families with low incomes.

Physical Environment – Many studies have documented the impact of outdoor and indoor air quality, safe drinking water, cleanup of hazardous waste sites, and food protection on the overall health of individuals in the community. With the *E. coli* outbreaks in recent years and the environmental concerns surrounding concentrated animal feeding operations (CAFOs), there is an increasing awareness about how changes in the physical environment influence health. Public health is responsible for examining and reporting the impact. The public health system has a strong environmental component that is responsible for water quality, food safety, radiation protection, and control of toxic substances. To protect the health of future generations, public health should also play a role in protecting and maintaining natural resources such as the aquifer, soil, and species diversity.

Part of the physical environment involves examining risk factors related to the work area. Occupational safety can involve handling chemicals on the farm or other physical or mental stressors and hazards. The physical environment also includes what is called the built environment. The built environment includes such things as having safe walking and biking trails, good public transportation, and parks and recreational areas.

Lifestyle (Behavioral Risk and Protective Factors) – The health of an individual is greatly influenced by lifestyle or behavioral risk and protective factors. Some of the negative (risk) factors include smoking, alcohol and other drug use and abuse, physical inactivity, and indulging in other risk-taking behaviors. Some of the positive (protective) factors include adoption of safety behaviors such as seatbelt use, physical activity, and healthy nutrition for appropriate weight management. Risk factors also include the lack of a social support system that is needed for effective parenting and for domestic

[4]Washington State Department of Health (1996). *Public health improvement plan*. Olympia: State Department of Health.

violence protection. Others include violence prevention as well as intentional (e.g., suicide) and unintentional injuries prevention (e.g., motor vehicle crashes). Public health programs influence lifestyle in two ways: (1) thorough analysis of data and providing information on the nature and extent of the risks (risk assessment), and (2) providing programs that promote healthy behaviors (health communication, health information, health education, and health promotion).

Access to and Quality of Health Care Services – In Nebraska, there are significant geographic and financial barriers to health care. Many rural areas have an inadequate supply of primary care physicians and other health care professionals. Approximately 13 percent of Nebraskans are uninsured and many more are underinsured. The percentage of uninsured is considerably higher for racial and ethnic minorities, and cultural barriers are often formidable. In terms of access, public health sometimes provides critical health services such as immunizations, reproductive health, and well child care, and screening for early intervention (e.g., pap smears, breast cancer screening, and prostate cancer screening). Public health influences the quality of health care services by licensing and certifying health professionals, health services, and health care facilities. Public health also advocates for increased health care coverage for those who are not currently covered or who have major gaps in their coverage.

Work-Related Conditions – Although the physical environment of the work place is often hazardous (e.g., agriculture), many other work-related conditions have a significant impact on health. Several research studies have found that work conditions such as job demands, the degree of control of work situations, and threatened job loss can generate adverse health effects. There is also a strong connection between unemployment and health. For example, unemployment and risk of job loss are associated with health conditions such as depression and negative health behaviors that include substance abuse, poor diet, and inactivity.[5]

Public health can help to document these linkages and work with employers to change the work environment. For example, higher levels of job control (i.e., the opportunity to use and develop skills and to exert authority over work place decisions) can reduce the risk of cardiovascular disease.[6] Conducting health risk appraisals at worksites and following up on areas of concern can have a positive impact on the health of workers as well as on the bottom line of the finances of the employer.

Genetics – Many health problems, including birth defects, developmental disabilities, coronary heart disease, cancer, and diabetes, are affected to varying degrees by genetic make-up. These genetic conditions may have a significant impact on families

[5]Institute of Medicine (2004). *In the nation's compelling interest: Ensuring diversity in the health care workforce* (pp. 66-67). Washington, DC: The National Academies Press.
[6]Institute of Medicine (2004). *In the nation's compelling interest: Ensuring diversity in the health care workforce* (p. 66). Washington, DC: The National Academies Press.

and the increased need for various health and social services. Public health influences genetic components through the support of regional laboratories, clinics, and support and counseling services for individuals and families.

In summary, there are several factors that influence health. For both individuals and populations, health depends not only on medical care but also on other factors such as individual behavior and genetic make-up as well as social and economic conditions for individuals and communities. Since a broad range of factors influence health, a variety of public and private entities have a stake in or can affect individual and community health. These stakeholders, which include health care providers (e.g., physicians and hospitals), public health agencies, and community-based organizations such as community health centers and community mental health organizations, have a direct impact on health. However, many other government agencies, community organizations, private industry, and other agencies such as schools, employers, social service and housing agencies, transportation and justice agencies, and faith communities play a more implicit and indirect but important role in improving health.[7]

Communities that are successful in improving health involve all of the major stakeholders and work to coordinate their roles and responsibilities. They have a common understanding of the multidimensional nature of the determinants of health and ways to accommodate diversity in values and goals.[8]

The Relationship between Public Health and Medicine

Historically, there has been a close working relationship between public health, with its focus on promoting healthy conditions for all populations in the community, and medicine, with its focus on treating or restoring the health of the individual patient. In the late 1800s and early 1900s, the most common health problems were infectious diseases such as tuberculosis, influenza, pneumonia, smallpox, and typhoid fever. In controlling the threat of infectious diseases, it is generally agreed that these diseases should be controlled with societal preventive action as well as individual medical care. During this period, health departments and boards of health were established at both the state and local levels to conduct and enforce sanitary measures and to maintain birth and death records, which were needed to track diseases. Working in conjunction with volunteer citizen associations and local practitioners, governmental public health efforts were successful in addressing many of the important risk factors for the transmission of communicable diseases: overcrowding, poor nutrition, inadequate sewer systems, uncollected garbage, and contaminated water and food.

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[7] Institute of Medicine (1997). *Improving health in the community, summary* (pp. 2-3). Washington, DC: The National Academy Press.
[8] Ibid, p. 4.

The emergence of epidemiology and microbiology in the late 19th century transformed the nature of medicine and public health. In a classic application of epidemiological methods in 1854, John Snow successfully identified the source of a cholera epidemic in London some thirty years before Robert Koch isolated and identified the cholera virus. Snow determined that drinking water from one of the wells, on Broad Street, was associated with higher incidence of cholera. He managed to get the local authorities to remove the handle on the Broad Street pump, thus preventing people from getting their drinking water there. The number of cholera cases dropped dramatically. Methods of epidemiological investigations have since evolved and allowed for the identification of many important risk relationships, including the association between smoking and lung cancer and physical inactivity and heart disease. In the medical sector, microbiology allowed scientists to identify the causes of diseases and develop therapies (e.g., antitoxins and antibiotics) to treat patients. These discoveries dramatically increased the effectiveness of medical diagnosis and treatment although it is important not to get complacent since there are always re-emerging diseases, new diseases, and antibiotic resistant diseases with which to cope.

In the public health sector, the new science led to targeted strategies for improving the environment. Some of these initiatives involved the detection and control of bacteria in water systems, the pasteurization of milk, and the eradication of mosquitoes to control yellow fever. During this time, laboratories developed tests to diagnose infectious diseases, and vaccines were used to prevent disease. These changes enhanced the opportunities for interaction between medicine and public health. For many communicable diseases, the complementary efforts of medical practitioners and public health professionals could protect the health of the entire community by immunizing most individuals. It is not enough to develop and distribute safe and effective vaccines. Public health professionals have to educate the public about the purpose, effectiveness, costs, and procedures for the vaccines.

Laboratory tests provided by public health professionals were extremely valuable to medical practitioners. Public health also began to focus its attention on health education and maternal and child health issues. For example, well-baby clinics with home-visitation services were established to inform women about proper nutrition and childcare. Public health and school health nurses were posted in schools to test children for eye problems, to check immunization records, to administer medications, and to monitor other impairments that might interfere with learning. If problems were identified, referrals were made to the appropriate health care practitioners.

By 1950, both the medical and public health sectors began to focus on chronic diseases such as cardiovascular disease and cancer because they had replaced infectious diseases as the leading causes of death. The medical sector addressed chronic illnesses by attempting to identify the biological mechanisms of these diseases within the body and by employing effective procedures and drugs that could be used for diagnosis and treatment. Public health efforts focused on using epidemiology to identify the

environmental, social, and behavioral risk factors that caused chronic diseases, and implementing protective factors that prevented such diseases. They developed population-based interventions to reduce risk factors and foster protective factors. An example of a population-based intervention is to examine diseases in populations to make connections between behaviors and disease, as was done in the 1960s when the connection was made between tobacco use and heart disease and cancer.

Public health strategies also began to center on the promotion of screening, early diagnosis, and treatment. For example, screenings for breast and cervical cancer can lead to early diagnosis of these conditions when treatment is more effective. Screening for hypertension and cholesterol can lead to behavioral and/or medical treatments that help to reduce the risk of stroke and heart disease. If problems are detected, individuals are encouraged to obtain services from appropriate health care practitioners. A second major public health strategy is to modify behaviors that make people susceptible to chronic illnesses. Education and counseling is provided to high-risk patients and community-wide campaigns are used as mechanisms to reinforce the advice being given by health care practitioners. Examples of educational and promotional efforts include tobacco control, promoting seatbelt use, controlling alcohol and other drug use, and promoting exercise.[9] Community counseling programs are often made available after disasters or other catastrophic events.

With a greater focus on chronic diseases, public health and private medicine became less dependent on one another. The separation between the two sectors was magnified by several factors, including the proliferation of medical specialties, the increasing reliance on expensive medical technology, the progressive categorization and fragmentation of public health, cultural differences, greater commercialization of private medicine, greater governmental control of public health, and a growing imbalance in funding between the two sectors. In recent years, however, both public and private sector policies began emphasizing the control of health care costs, improving the quality and access of health care services, and integrating health care services and systems to provide more coordinated care. As a result, many of the major differences between private medicine and public health are blurring. In Nebraska, for example, public health professionals often collaborate with the Nebraska Medical Association and the Nebraska Hospital Association, among others.

In addition to resource constraints and new financial incentives, there are new challenges that are forcing improved collaboration between the two sectors. For example, there is a re-emergence of diseases (e.g., tuberculosis and measles) that many thought were "conquered." New diseases are emerging, such as West Nile Virus, SARS, and monkey pox that cannot be easily prevented or cured. There is an imminent threat of pandemic influenza according to many public health experts. In addition, "old"

[9]This entire section was summarized from the following report: Lasker, R. (1997). *Medicine and public health: The power of collaboration*. New York: The New York Academy of Medicine.

diseases such as diabetes are expanding in epidemic proportions. There are also no easy solutions to various social problems, such as violence, substance abuse, and teen pregnancy. The number of people who are uninsured continues to increase, creating additional barriers to obtaining health services. Finally, major disparities in health status based on race, ethnicity, and socioeconomic health status are becoming a disturbing "norm" in Nebraska and the nation. Challenges can be overcome if the two sectors combine resources and skills. Building a strong partnership will enable both sectors to achieve benefits neither of them could achieve alone.

The Benefits of Public Health

While public health receives less than ten percent of national health care expenditures, public health efforts have resulted in major improvements in health, life expectancy, and quality of life in the last 100 years. Over the last century, life expectancy in the United States increased by 30 years from 47 years in 1900 to 77 years in 2005. Only five of those years were due to improvements in curative medicine and health care. The remaining 25 years were due to improvements in public health and preventive medicine.[10] According to the United Health Foundation's America's Health Rankings—2005, the overall health of the United States' population increased 0.9 percent from 2004 to 2005. One of many reasons for this improvement was an increase in per capita public health spending from $154 to $162 per person for public health activities.[11] It has been estimated that 40-50 percent of all deaths before age 65 are caused by unhealthy behaviors, approximately 30 percent can be attributed to genetic predisposition, 15 percent to social circumstances, 10 percent to shortcomings in medical care (including access to care), and five percent to environmental causes.[12]

The following are examples of the effectiveness of prevention and health promotion programs and activities:

- From 1993 to 2002, the Nebraska adult smoking rate remained relatively stable at approximately 22 percent. From 1997 to 2003, there was a 38 percent decline in the percentage of youth who smoked cigarettes and almost a 41 percent decline in the percentage of youth who used smokeless tobacco as a result of targeted programs and policies that were promoted by public health professionals. Nebraska does not allocate the dollars to tobacco prevention and

[10]United States Department of Health and Human Services (April 30, 2002). Disease Prevention and Health Promotion Programs at HHS. United States Department of Health and Human Services Press Release. Retrieved June 5, 2006 from http://www.hhs.gov/news/press/2002pres/prevent.html

[11]United Health Foundation. *America's Health Rankings 2005*. Retrieved June 5, 2006, from http://www.unitedhealthfoundation.org/shr2005/Changes2003.html

[12]U.S. Department of Health and Human Services (April 30, 2002). Disease Prevention and Health Promotion Programs at HHS. U.S. Department of Health and Human Services Press Release. Retrieved June 5, 2006 from http://www.hhs.gov/news/press/2002pres/prevent.html

treatment that are recommended by the Centers for Disease Control and Prevention (CDC). States that have spent more dollars as recommended by CDC have demonstrated even greater decreases in tobacco use. Each year in Nebraska, over 2,400 adults die prematurely because of cigarette smoking, which results in over $400 million in foregone future earnings each year.[13] Without public health programs that focus on reducing tobacco use, these numbers would be significantly higher.

- Fluoridation of drinking water is a major factor responsible for the decline in dental caries (tooth decay) since the 1950s. Community water fluoridation reduces childhood dental caries by approximately 18 to 40 percent.[14] Under typical conditions, the annual per person cost savings in fluoridated communities ranges from $16 in very small communities (<5,000) to nearly $19 for larger communities (>20,000).[15] In Nebraska, approximately 69.5 percent of the population on public water systems receives fluoridated water, placing Nebraska 28th among the United States. Despite decades of evidence of the success of fluoridation programs with no evidence of harm, there are still many people who believe that fluoridation is a dangerous form of "social medicine". Therefore, public health professionals must increase their efforts to demonstrate the value and safety of such programs to those who are reluctant or resistant to fluoridation. Many communities in Nebraska do not have fluoridated water. Even in communities that have fluoridated water, there are some new concerns because of the increased number of people drinking bottled water, which is not fluoridated.

- In Nebraska, motor vehicle crashes are the leading cause of death for ages 5 – 34. During 2003, there were 293 fatalities in Nebraska due to motor vehicle crashes. One crash occurred every 11 minutes, sixty people were injured each day, and one person was killed every 30 hours. Without safety belt usage laws and public health promotion activities, the number of fatalities would be notably higher. Approximately 21 percent of motor vehicle occupants in Nebraska did not wear seatbelts in 2003. Of persons who were killed in motor vehicle crashes, 73 percent were unbelted.[16] In 2004, the observed statewide safety belt usage rate

[13]Willett, J., Newman, I., Wiese, C., Njobe, E., Finn, P. (December 2003). *Progress in Reducing Tobacco Use across Nebraska*. Retrieved June 5, 2006 from http://www.nlc.state.ne.us/epubs/H8250/B004-2003.pdf

[14]Centers for Disease Control and Prevention (August 17, 2001). Recommendations for using fluoride to prevent and control dental caries in the United States. *MMWR*, *50*(RR-14), 1-42.

[15]Griffin, S.O., Jones, K., Tomar, S.L. (2001). An economic evaluation of community water fluoridation. *Journal of Public Health Dentistry*, *61*(2), 78-86.

[16]NE Health and Human Services System (June 2005). Best practices for unintentional injury prevention. Retrieved June 5, 2006 from http://www.dhhs.state.ne.us/hew/hpe/InjuryGuide.pdf

was 79 percent.[17] Usage rates have risen in recent years primarily due to increases in law enforcement efforts and a media campaign. There has been considerable progress in the physical and engineering environments regarding vehicle safety—safer roads, safer vehicles, additions such as side air bags, etc. However the behavioral aspects of highway safety have not made equal strides. A study released by the Insurance Institute for Highway Safety stated that: "We have lost focus on the human behavior side." Vehicles and roads are safer, "but drunken driving rates have not changed much in the 10 years studied, seatbelt use has climbed at only a moderate pace, and people are driving faster."[18]

- Lung cancer is the leading cause of cancer deaths in Nebraska for both men and women. Most of these deaths are related to smoking. In the 1960s, breast cancer was the leading cause of cancer deaths among women, but as more women took up the smoking habit, the result was a dramatic increase in lung cancer deaths among women several years after. This is yet another indication of the importance of tobacco prevention and cessation programs.

- In 2003, colorectal cancer was the fourth most frequently diagnosed cancer among Nebraska residents, accounting for over 1,000 new cases. It was also the second leading cause of cancer mortality in the state, accounting for 363 deaths.[19] According to the American Cancer Society, one of the most powerful weapons in preventing colorectal cancer is regular colorectal cancer screening or testing. Regular colorectal cancer screening can catch cancers or precancers in the early stages when they can be more readily prevented, abated or treated. Fewer than half of Americans over 50 have any colorectal cancer testing at all. If everyone were tested with this simple and inexpensive screening, thousands of lives could be saved each year.[20]

Public health is a wise investment that increases life expectancy and improves health. Public health efforts in Nebraska, such as tobacco programming and enforcement of seatbelt laws, save hundreds of lives each year and it also improves the quality of life for the population as a whole.

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[17]Nebraska Department of Roads (2004). 2004 Traffic Crash Facts Annual Report. Retrieved June 5, 2006 from www.nebraskatransportation.org/highway-safety/docs/facts2004.pdf

[18]Wald, M.L. *Study credits vehicles, but not drivers, for better road safety*. (2006, August 10). *The New York Times*, p. 16.

[19]NE Department of Health and Human Services (2003). Nebraska Cancer Registry: 2003 Annual Report. Retrieved June 5, 2006, from http://www.hhs.state.ne.us/srd/CancerReport2003.pdf

[20]American Cancer Society (March 7, 2006). Can colorectal cancer be prevented? Retrieved June 5, 2006 from http://www.cancer.org/docroot/CRI/content/CRI_2_4_2X_Can_colon_rectum_cancer_be_prevented.asp?rnav=cri

The Public Health Infrastructure in Nebraska

The public health infrastructure provides the foundation and serves as the nerve center of the public health system. The infrastructure represents the capacity to carry out the core functions and the ten essential services (see Figure 1-1) and includes the following ingredients:

- Organizational Resources
- Human Resources
- Information Resources
- Fiscal Resources

Oftentimes it is difficult to distinguish between these resources, but each of these elements contributes to the system's capacity to perform at a high or low level. Each ingredient is briefly described below.

Organizational Resources – The organizational resources include a network of federal, state, and local public health agencies as well as many private and nonprofit organizations such as physicians, nurses, physician assistants, and other health care professionals. Other important partners are hospitals, businesses, faith-based organizations, schools, senior centers, and volunteer organizations. Successful public health systems have formed close collaborative partnerships among all of these entities.

The local public health infrastructure in Nebraska could best be described as weak, fragmented, and underfunded at the turn of the 21st century. The local public health infrastructure consisted of 16 local public health departments which covered only 22 of the state's 93 counties (see Figure 1-2). Although the largest local health departments provided all of the core functions, the vast majority of the rural health departments had very limited capacity and provided only a few limited services. None of these smaller health departments provided critical public health services such as data collection and analysis, disease control and monitoring, epidemiology and surveillance, policy development, or environmental health. Compounding this problem was the fact that the workforce lacked skills in many of the core public health competencies, such as coalition building, data analysis, and cultural competence.

Building Organizational Capacity – In 1997, Nebraska received a Turning Point grant from the Robert Wood Johnson Foundation. One of the requirements of the grant was to evaluate the effectiveness of the state's public health system and develop appropriate recommendations in a State Public Health Improvement Plan. When the plan was released in December of 1999, eight major strategies were recommended to strengthen the public health system and the highest priority was to build the public health infrastructure at the local level.

The plan provided a blueprint for action and was used by advocacy groups to approach the Governor and members of the State Legislature about the need for and benefits of a strong local public health infrastructure. These efforts led to the passage of the Nebraska Health Care Funding Act in 2001. This Act provided $5.6 million to fund on an ongoing basis, 16 new multicounty health departments. By 2004, every county was covered by a local public health department (see Figure 1-3).

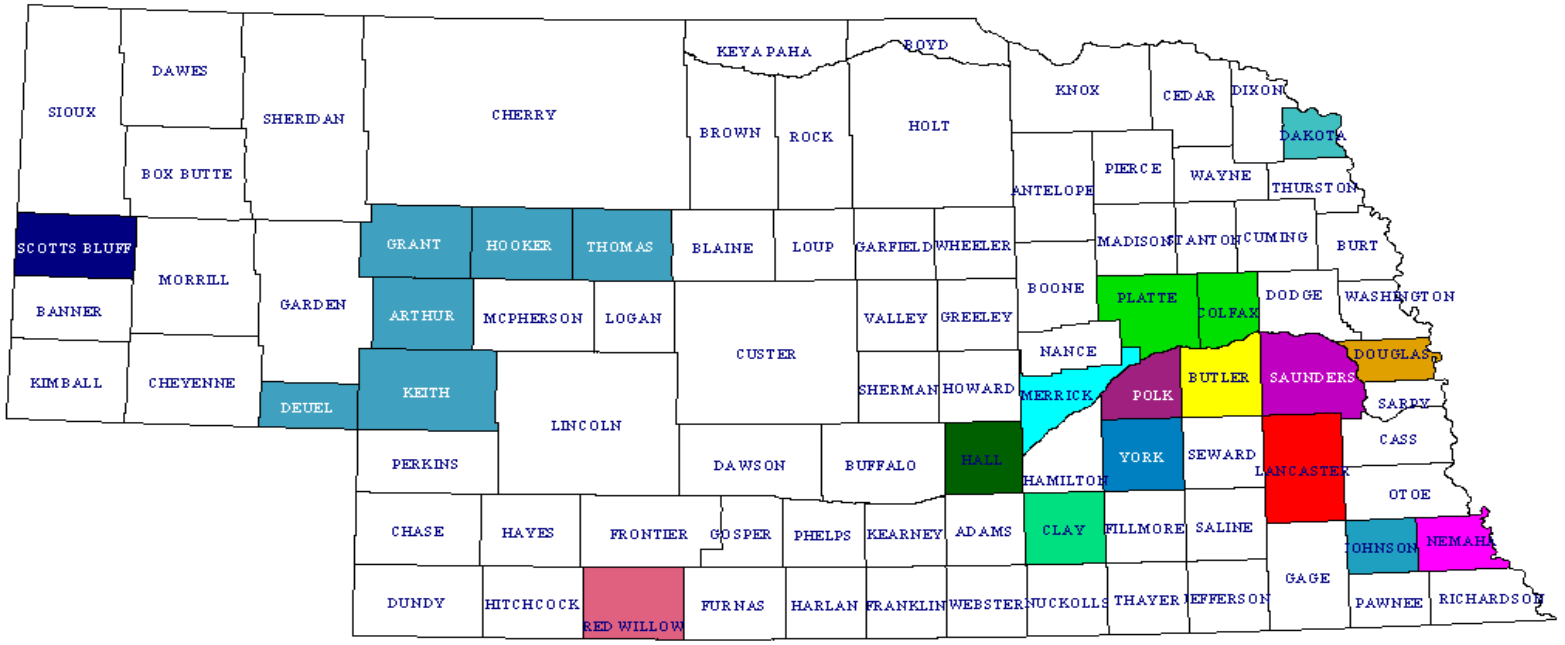
The new multicounty public health departments, along with the two departments in Douglas and Lancaster Counties, are required to provide the core functions of public health. However, to carry out these functions and key activities, local health departments must engage and work with nongovernmental entities such as businesses, schools, the faith community, health care providers, and many non-profit agencies. Nongovernmental organizations have played major roles in public health activities for over 100 years. For example, the March of Dimes assumed a leadership role in developing and funding a successful polio vaccine. In 1980, Mothers Against Drunk Drivers began a national campaign for stronger laws against drunk driving.

One important advantage to the public of having public health departments is that they are more comprehensive. Agencies, as important as they are, often specialize in a certain disease or condition or age group. Public health departments must address all ages, all diseases and all ethnic groups, if not directly, then by their abilities to coordinate and organize all necessary programs and services.

Building strong coalitions among all organizations (governmental, private, and nonprofit) is essential to address the complex public health issues today. A single organization cannot be successful in reducing obesity, expanding health insurance coverage, or reducing teen smoking and underage drinking. Significant progress in these areas requires collaborative partnerships of all major sectors in the community. Effective collaborations have several advantages, including more resources, greater credibility, and usually a broader range of actions.

FIGURE 1-2

Nebraska Local Health Departments
September 11, 2001



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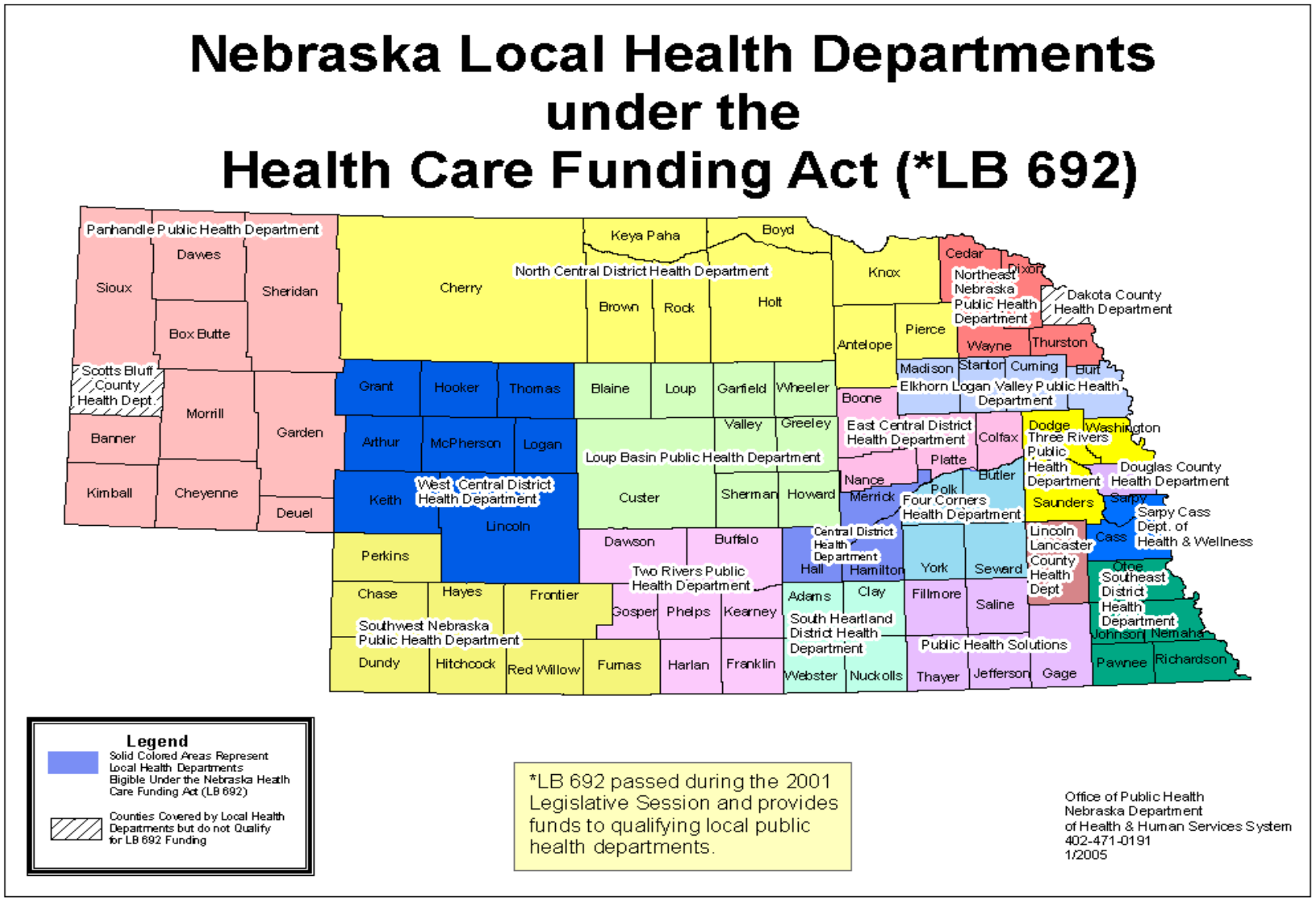
Nebraska Department of Health & Human Services
Sue Medinger, 402-471-0191

FIGURE 1-3


Nebraska Local Health Departments under the Health Care Funding Act (*LB 692)
Panhandle Public Health Department
Sioux
Dawes
Sheridan
Box Butte
Scotts Bluff County Health Dept.
Morrill
Banner
Garden
Kimball
Cheyenne
Deuel
Cherry
Keya Paha
Boyd
North Central District Health Department
Brown
Rock
Holt
Grant
Hooker
Thomas
Blaine
Loup
Garfield
Wheeler
Arthur
McPherson
Logan
Valley
Greeley
Loup Basin Public Health Department
Keith
West Central District Health Department
Lincoln
Custer
Sherman
Howard
Perkins
Dawson
Buffalo
Two Rivers Public Health Department
Chase
Hayes
Frontier
Gosper
Phelps
Kearney
Southwest Nebraska Public Health Department
Dundy
Hitchcock
Red Willow
Furnas
Harlan
Franklin
Knox
Cedar
Dixon
Northeast Nebraska Public Health Department
Dakota County Health Department
Antelope
Pierce
Wayne
Thurston
Madison
Stanton
Cuming
Burt
Elkhorn Logan Valley Public Health Department
Boone
East Central District Health Department
Colfax
Dodge
Washington
Three Rivers Public Health Department
Douglas County Health Department
Platte
Nance
Butler
Merrick
Polk
Four Corners Health Department
Saunders
Sarpy
Sarpy Cass Dept. of Health & Wellness
Central District Health Department
Hall
Hamilton
York
Seward
Lincoln Lancaster County Health Dept
Cass
Otoe
Southeast District Health Department
Adams
Clay
Fillmore
Saline
South Heartland District Health Department
Johnson
Nemaha
Webster
Nuckolls
Thayer
Jefferson
Gage
Public Health Solutions
Pawnee
Richardson
Legend
Solid Colored Areas Represent Local Health Departments Eligible Under the Nebraska Health Care Funding Act (LB 692)
Counties Covered by Local Health Departments but do not Qualify for LB 692 Funding
*LB 692 passed during the 2001 Legislative Session and provides funds to qualifying local public health departments.
Office of Public Health
Nebraska Department
of Health & Human Services System
402-471-0191
1/2005

Human Resources – A second major infrastructure ingredient is human resources. Human resources are needed to carry out the core functions and include the public health workforce and its knowledge, skills, and abilities. The public health workforce is multidisciplinary and most workers have a primary professional discipline in addition to their attachment to public health. Some of these disciplines include physicians, nurses, physician assistants, dentists, dental hygienists, social workers, nutritionists and dietitians, health educators, sanitarians, economists, biostatisticians, and lawyers.

At this point, only a small percentage of the public health workforce in Nebraska has formal training in public health. However, more people are receiving formal training in public health because of the new Master of Public Health (MPH) Program, which was jointly formed in 2001 by the University of Nebraska Medical Center and the University of Nebraska at Omaha. As of August 2007, there were 45 graduates and 78 students enrolled in the program.

In addition to the MPH Program, several other colleges and universities offer related degrees and courses in public health. For example, Creighton University offers a Master of Health Services Administration and the University of Nebraska at Omaha continues to offer both a bachelor's and a master's degree in community health education.

Several other non-degree training and educational programs have been developed and offered. For example, the Nebraska Educational Alliance for Public Health Impact has organized the Great Plains Public Health Leadership Institute (GPPHLI). The GPPHLI is a yearlong program that began in 2005 to build leadership skills for senior and emerging public health professionals in Nebraska, Iowa, and South Dakota. The Public Health Association of Nebraska and the Center for Biopreparedness Education have offered a variety of educational programs and workshops directed toward staff from local and state public health agencies, boards of health, and staff from partner organizations.

In 2006, the Legislature appropriated $100,000 for training of the public health workforce. These funds can be used to target both short-term and long-term high priority training needs in several of the major professional competency areas such as analysis, communications, policy development, program planning, cultural competency, basic public health science, and financial planning. Appendix A provides a list of the core elements under each public health competency. A 2003 report published by the Institute of Medicine identified eight content areas that are important to incorporate into the curriculums of public health education programs and schools of public health. These include: (1) informatics, (2) genomics, (3) communication, (4) cultural competence, (5) community-based participatory research, (6) global health, (7) policy and law, and (8) public health ethics. Skills and competencies in these new areas are essential to address complex problems and develop multifaceted solutions.

Current Challenges in Nebraska – There are three major human resource challenges in Nebraska. First, there is a relatively inexperienced workforce in the new local public health departments. Although the workforce has several of the necessary skills and competencies, it lacks formal training in public health as well as skills in areas such as planning and data analysis, policy development, and cultural competence. The second major challenge is an aging public health workforce at the state level. Currently, over 50 percent of the staff is over 50 years of age and it is likely that many of these workers will retire in the next five to seven years. The third major challenge involves the provision of training to public health workers who do not work for a local or state public health agency and may not consider themselves part of the public health workforce. Some of these health professionals work in hospitals, physician clinics, cooperative extension, community action agencies, and many other organizations. Identifying and meeting the needs of these workers is critical to improving the efficiency, effectiveness and the continuity of the public health system.

Information Resources – Data and information systems are the third ingredient of the public health infrastructure. Accurate and timely data are needed to conduct community and statewide needs assessments in order to provide a basis for developing health policies and appropriate intervention strategies. In recent years, several new databases have been created, including inpatient and outpatient hospital discharge data, E-code data for all patients with injuries that use the hospital emergency room, and encounter data from all physicians' offices that are part of the Medicaid managed care program.

Despite these new databases, many gaps still remain. For example, there is no systematic collection of physician encounter data, and mental health and substance abuse information is still very limited. It is also difficult to track changes in health care costs and evaluate the quality of health care services under both managed care and fee-for-service systems.

In addition to gaps in data, there is also the problem of not being able to easily link health-related databases. For example, it is possible to link Medicaid data with birth records and Women, Infant, and Children (WIC) data. However, such a link is not routinely performed at present. Linking data sets would enable public health staff to better pinpoint health needs and to target resources more efficiently and effectively.

Another need is to make the data more widely accessible. One area where progress has been made is placing the updated county profiles on the Internet. These county profiles were widely distributed in the past, but Internet accessibility has allowed even more Nebraskans to have access to these data. There has also been some discussion about building a data warehouse. The purpose of a data warehouse is to share aggregate information across the health and human service system and to allow individuals access to data without needing technical programming.

Finally, the DHHS System is beginning to develop capacity to take advantage of a Geographic Information System (GIS). GIS is a system for describing and displaying data on a map. It presents data in an easy-to-understand manner. With GIS, it is possible to show rates of hospitalization and mortality rates in a particular county over time. This system permits analysis at any geographic level (e.g., state, county, zip code area, and census tract) and assists in enhancing the quality of policy decision-making and surveillance investigations.

Local Level – Most local health departments rely heavily on data that are collected and maintained at the state level. However, many of these state level databases can be disaggregated to the county level. Some of these databases include birth and death records, drinking water quality, cancer registry data, hospital discharge data, and many others. Until recently, most local health departments lacked information on behavioral risk factors by local district. However, a 2005 Behavioral Risk Factor Survey was conducted by the state health agency that provided information on behavioral health risks based on the location of the district health departments, plus Douglas and Lancaster Counties. These data can now provide a baseline to compare the changes in health outcomes for each local health department.

Although most local health departments will not be able to fund expensive new data collection activities, the Internet and the data warehouse as explained in the previous section provide opportunities to distribute and share data more widely. With some technical assistance from the state health department, as well as other partners such as researchers in academic settings, it should be possible to analyze more local data. However, local agencies are still responsible for appropriately using the data to develop support for changes in local policies or formulating appropriate intervention strategies.

Fiscal Resources – According to a 1994 study by the American Public Health Association, Nebraska ranked last in per capita government spending on public health.[21] Between 1994 and 2001, the level of funding for public health activities did not change significantly. As described in a previous section, the Nebraska Health Care Funding Act was enacted in 2001. This Act provided $5.6 million per year to build the public health infrastructure at the local level and $100,000 per year to the state health agency for technical assistance activities. In 2006, the Legislature appropriated another $1.8 million for local public health departments and $100,000 to train the public health workforce. These funds have been used to build the public health system and provide the three core functions in every county of the state.

The dedicated state funds for local public health departments in Nebraska provide a solid foundation for future activities and services. These funds have also allowed the departments to leverage additional public and private grant funds. Between 2002 and 2007, it is estimated that local public health departments leveraged several million dollars in additional funds, such as bioterrorism and Maternal and Child Health block

[21]American Public Health Association. 1994 Study.

grant funding. Today, Nebraska has become a leader in many aspects of public health in the nation and presentations and publications have documented Nebraska's successes throughout the country.

The New Environment: Major Challenges and Opportunities for Public Health

Dramatic and fundamental changes are occurring in the health care environment in both the public and private sectors. These changes have created new incentives to control costs, to improve quality, and to begin to shift the focus from the health of the individual to the health of the entire community. This unstable and dynamic environment has also created new opportunities for collaboration and building new partnerships. Some of the major challenges and opportunities facing public health are discussed below.

Socioeconomic Factors – Although socioeconomic factors such as poverty, income, and education have long been known to have a significant impact on the health of individuals and families, public health has not aggressively addressed these issues. In the past thirty years or so, there has been a tendency to rely on the medical care model to solve social problems. For example, in this model, sexual abuse, substance abuse, and domestic violence are generally thought of as mental diseases. As a result, these social problems are given a medical diagnosis and health care providers are reimbursed for treating them. Although the medical care system has treated these conditions symptomatically, it has relatively little control over addressing the root causes and the demand for services.[22]

A recent study found that persons in lower socioeconomic groups are more likely to engage in risky behaviors (e.g., smoking, excessive alcohol consumption, a high body mass index, and low physical activity level), but these behaviors explain no more than 12 to 13 percent of the predictive effect of income on mortality. These findings suggest that there is a need to broaden the search for other factors such as hostility, depression, and social isolation.[23]

Another study supports these findings. Using data from a California HMO, the results indicated that those adults who lived in an environment of emotional, physical, or sexual abuse and household dysfunction during childhood were at greater risk for alcoholism, drug abuse, depression, and suicide. They were also more likely to smoke, have poor self-rated health, have 50 or greater sexual partners, and a sexually transmitted disease. The greater the breadth of exposure to abuse or household

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[22]Hurowitz, J.C. (1993). Toward a social policy for health. *New England Journal of Medicine*, *329*(2), 130-133.

[23]Williams, R. (1998). Lower socioeconomic status and increased mortality. *Journal of the American Medical Association*, *279*, 1745-1746. See also Lantz, S. et al. (1998) Socioeconomic factors, health behaviors, and mortality. *Journal of the American Medical Association*, *279*, 1703-1708.

dysfunction during childhood the greater the likelihood of chronic diseases, including heart disease, cancer, lung disease, skeletal fractures, and liver disease.[24]

Public health has an opportunity to assume a lead role in forming broad-based coalitions to address these difficult issues. Through a rigorous assessment process, the underlying risk factors for persons in lower socioeconomic groups can be documented and monitored. Once these needs are better defined, public health can play a role in initiating policy changes that redress the social conditions that create poor health and disparities in health status.

Population Changes – The population changes in Nebraska mirror those occurring in the nation. The graying of the population will influence the needs for various medical and long-term care services. However, this also provides opportunities to promote healthy aging. Past studies have demonstrated that community-based interventions to support behavioral changes such as increases in physical activity and good nutrition, may reverse some health damage and help prevent some additional problems.[25] It will also be important to provide adequate social support services and assure safe and adequate housing, easily accessible transportation services, and maintain and encourage social interactions through participation in senior citizens' groups.

Nebraska is also becoming more racially and ethnically diverse. Between 1990 and 2000, the white population grew by 3.6 percent while the racial and ethnic minority populations increased by 68.3 percent. Although diversity of the population provides many advantages such as expanding our economic base and workforce as well as enriching our culture, it also presents some challenges. For example, racial and ethnic minority populations are less likely to have health insurance coverage which may place a greater burden on safety net providers. Furthermore, minority groups are significantly underrepresented among the population of health professionals and many health care workers lack the skills and competencies to provide culturally competent care. Also, many new immigrant groups face language barriers and bring different perceptions about the need for certain types of preventive services and the meaning of good health and illness.[26]

Public health has a responsibility to monitor and document these disparities and barriers and to ensure egalitarian participation of all the racial and ethnic minorities at all levels of the community planning process. Leaders in the minority community are in the best position to suggest culturally-appropriate intervention strategies and public health can help in the implementation of these strategies.

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[24]Felitti, V. et al. (1998). The relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *Department of Preventive Medicine,* Kaiser Pharmaceutical, San Diego, CA.
[25]Institute of Medicine (2003). *The future of public health in the 21st century* (p.35). Washington, DC: National Academies Press.
[26]Ibid., p. 36.

Access to Health Care – Many people in Nebraska face significant barriers in accessing health care services. For example, it is estimated that at least 150,000 people in Nebraska under the age of 65 do not have health insurance coverage and many others have inadequate health care coverage. As a result, most people that are uninsured have poorer health outcomes. Major contributing factors include lack of timely preventive care (e.g., regular health screenings) and the inability to afford necessary prescription drugs.

Public health can play an important role by developing broad-based coalitions to address the issue, documenting the severity of the problem, and assisting coalitions in examining different options to reduce the magnitude of the problem. Although some local solutions have been marginally effective in reducing the uninsured rate, the implementation of state level strategies have generally produced the greatest impact across the country.

Many rural areas are considered underserved and need to develop medical systems capacity. For example, many areas have a shortage of physicians, nurses, mental health professionals, and many other types of health personnel. Public health can assist rural communities in recruiting and retaining health care professionals and in documenting health system deficiencies. Capacity can be stabilized or improved through telemedicine, health information technology, scholarship and loan repayment programs, emergency medical and trauma systems, and a broader array of home and community-based long-term care services. Public health can also focus on the causes of farm accidents and injuries and design preventive programs to reduce them.

Conclusion

At the turn of the 21st century, the public health system in Nebraska was weak, fragmented, and severely underfunded. Public health services and programs were available in less than one-quarter of the counties in the state. By 2006, a major transformation had occurred. Local public health departments now cover every county and provide all of the core public health functions. The new public health infrastructure now has strong leaders, exciting new partnerships, and improved funding.

Despite this success, many challenges need to be addressed. For example, the public health workforce still needs training and education in many of the core competencies. Also, new resources and leadership are needed to build integrated data systems that are more accessible to researchers and public health practitioners.

There are also many complex problems that can only be resolved through effective collaborative partnerships. Some of these problems include the lack of insurance coverage, disparities in health status between the white population and racial and ethnic minority populations, the inadequate supply of health professionals in rural areas, the dramatic increase in the number of people that are overweight and obese,

the emergence of new diseases such as SARS and West Nile Virus, and the threat of pandemic flu. To meet these challenges, the public health infrastructure will need to be strengthened and become more efficient. There is also a need to demonstrate accountability to both policymakers and the general public through the use of a more business-like model to determine the feasibility of service expansion. Finally, public health leaders must continue to build collaborative partnerships with the medical community, businesses, schools, and many others. Through these diverse partnerships, appropriate strategies can be developed and sufficient resources can be found to achieve the vision of healthy and productive individuals, families, and communities across Nebraska.

Chapter 2
The State of Health in Nebraska

This chapter presents a snapshot of some of the major health problems in Nebraska. The first part of the chapter reflects significant demographic trends, while the second part shows trends in health status. In the final section, the progress that has been made in achieving the Nebraska Year 2010 Objectives is examined.

Demographic Trends

Several demographic trends in Nebraska's population have been identified that will likely impact health and medical systems. These trends reveal changes in Nebraska's aging population and geographic distribution. Based on United States Census Bureau data, some of the major trends are outlined below.

In 1990, approximately 66 percent of Nebraska residents lived in urban areas, and 34 percent lived in rural areas. In 2000, the percentage of residents living in urban areas increased slightly to 70 percent, while 30 percent were living in rural areas.

In 2000, the percentage of Nebraska's population aged 65 and older was 13.6 percent, compared to the national average of 12.4 percent. As of 2004, the number of persons aged 65 and over decreased by 18,207. The percentage of persons 65 and older in Nebraska showed a decline to 12.6 percent, while the national percentage declined slightly to 12.0 percent.

Based on the 2000 U.S. Census, the minority population in Nebraska continues to grow more rapidly than the white population. Between 1990 and 2000, Nebraska's population increased by 8.4 percent from 1,578,385 to 1,711,263, and the number of residents who identified themselves as white increased by about 3.6 percent from 1,480,558 in 1990 to 1,533,261 in 2000. In comparison, racial and ethnic minority populations increased by 68.3 percent from 119,205 in 1990 to 200,629 in 2000. Hispanics are the largest minority group in Nebraska growing from 36,969 in 1990 to 94,425 in 2000 (a 155.4 percent increase). The number of African Americans in Nebraska increased as well from 57,404 in 1990 to 68,541 in 2000 (19.4 percent growth). The number of Native Americans and Alaskan Natives grew by 20 percent from a total of 12,410 in 1990 to 14,896 in 2000. Finally, the Asian American population increased by about 83.3 percent from 12,422 in 1990 to 22,767 in 2000. In addition to having less access to a regular health care provider, racial and ethnic minority populations in Nebraska are more likely to be without health insurance than whites. Language and cultural differences between health care providers and recipients from different ethnic backgrounds often make communication and access to care more difficult.

In rural Nebraska counties (those with populations of less than 20,000 people), approximately 19.6 percent of the population is 65 or over, and in 36 counties the

number of persons over age 65 exceeds 20 percent (see Figure 2-1). This trend has significant implications for the delivery of health and medical services, because as an individual ages, he/she will use more services. Rural areas tend to have fewer health resources and services to sufficiently meet the needs of the population. Individuals in rural areas also have to travel greater distances to access health care services, which is complicated by the lack of public transportation services available in most rural areas of the state.

Socioeconomic Trends

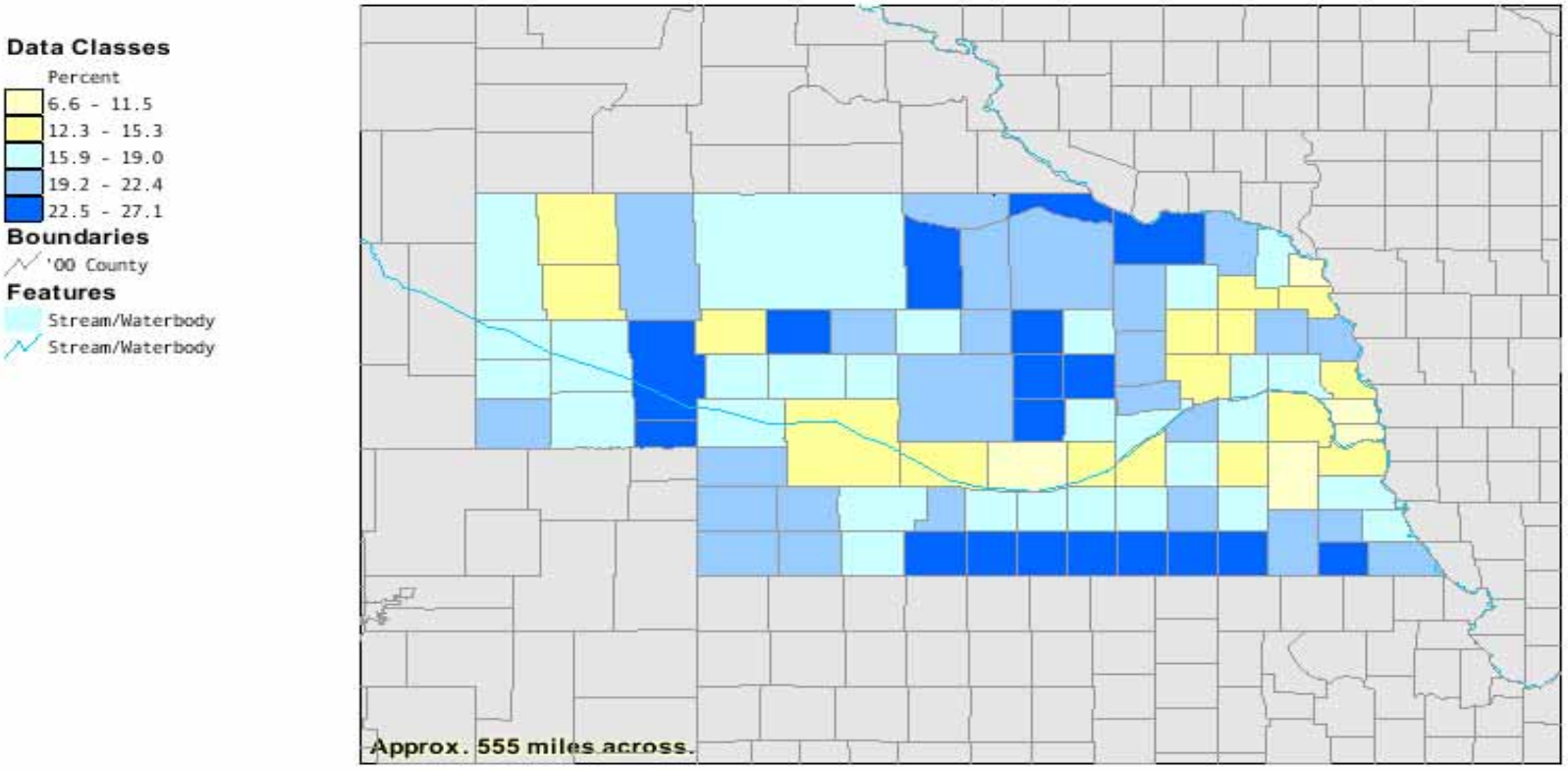
Poverty in Nebraska decreased slightly from 9.9 percent in 1997 to 9.7 percent in 2000. The national rate in 2000 was 12.4 percent. In 2000, approximately 161,269 persons in Nebraska had incomes below the poverty level. Of those, 52,019 or 32.3 percent were under age 18 and 15,946 or 9.9 percent were under age five.

Poverty rates vary by geographic area in Nebraska. In general, the northwestern and north central counties experienced the greatest poverty rates in 2000 (see Figure 2-2). The counties with the highest estimated poverty rates in 2004 were Thurston (22 percent), Dawes (18 percent), Blaine (17 percent), and Rock (16 percent). These rates are much higher than the Nebraska rate and even the national rate of 12.4 percent in 2000. The counties with the lowest estimated poverty rates in 2004 were Sarpy (5 percent), Washington (6 percent), and Cass (7 percent).

Greater proportions of ethnic minority groups have incomes that fall below 100 percent of the federally designated poverty level. In 2000, the poverty rate for Native Americans living in Nebraska was 33.0 percent, for African Americans 27.4 percent, and 20.4 percent for Hispanics or individuals of Latino origin, compared to 9.7 percent for Nebraskans overall. The poverty rate for Asian Americans was slightly lower at 12.8 percent.

FIGURE 2-1

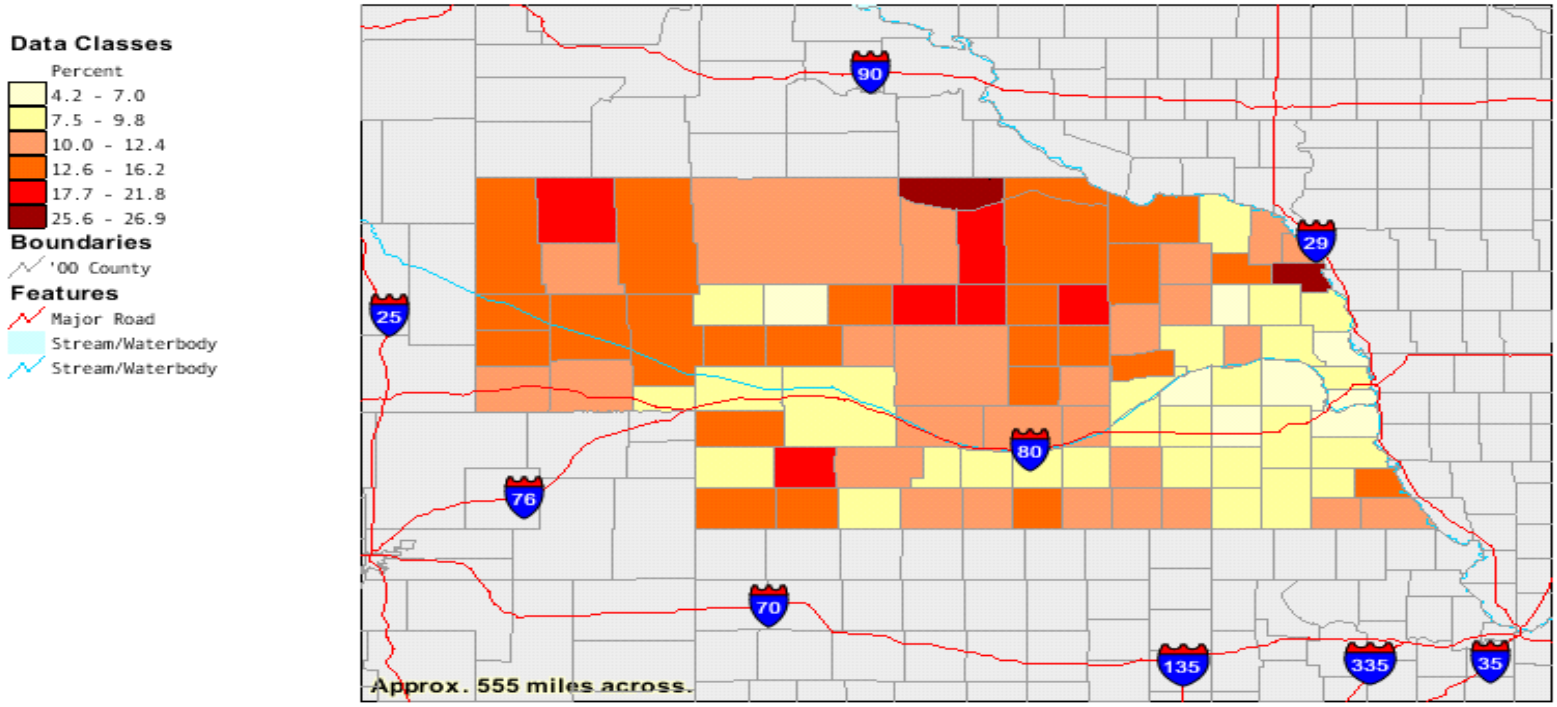
Percent of Persons 65 years and older in Nebraska Counties: 2000



Source: U.S. Census Bureau; Census 2000, Summary File 1, Matrices P1 and P30; generated by Colleen Svoboda using American FactFinder; http://factfinder.census.gov (21 March 2006).

FIGURE 2-2

Poverty Rates by Geographic Area



Source: U.S. Census Bureau; Census 2000, Summary File 3, Matrix P87; generated by Colleen Svoboda using American FactFinder; http://factfinder.census.gov (21 March 2006).

Health Status

When compared to the rest of the nation, Nebraskans enjoy above average health status. In 2005, the United Health Foundation ranked Nebraska 11th among all states in health status, an improvement from 12th the previous year. One of Nebraska's strengths is a high rate of high school graduation at 80 percent. Another strength is a low percentage of children in poverty at 10.2 percent of persons under age 18. In comparison to other states, Nebraska also had a low rate of uninsured population, 11.4 percent, and few limited activity days at 1.7 days in the previous 30 days.

In contrast, Nebraska has a high rate of occupational fatalities at 7.9 deaths per 100,000 workers and limited access to adequate prenatal care with 73 percent of pregnant women receiving adequate prenatal care (see Table 2-1 for a summary of the indicators and the Nebraska ranking compared to other states). Other notable changes from 2004 include an increase in per capita public health spending and a decline in the rate of motor vehicle deaths. (**Note:** Reporting of public health expenditures may, depending upon state variability include resources targeted for Homeland Security activities. These activities may or may not affect traditional public health functions.) These rankings indicate that Nebraska faces some challenges to continue to improve the health status of Nebraskans.

TABLE 2-1

United Health Foundation State Health Rankings—2005

Measure	Nebraska Rate	US Rate	Measurement	Data Year(s)	Weight	Rank Order
Risk Factors—Personal Behaviors						
Prevalence of Smoking	20.2	20.8	Percent	2004	10	(T)*18
Motor Vehicle Deaths	1.3	1.5	100,000,000 miles	2004	5	(T)16
Prevalence of Obesity	23.1	23.1	Percent	2004	5	25
High School Graduation	80.0	68.3	Percent of incoming 9th graders	2001-2002	5	6
Risk Factors—Community Environment						
Violent Crime	309	466	Offenses/100,000	2004	5	21
Lack of Health Insurance	11.4	15.7	Percent	2004	5	(T)9
Infectious Disease	8.5	24.6	Cases/100,000	2002-2004	5	(T)11
Children in Poverty	10.2	17.8	Percent (under age 18)	2004	5	6
Occupational Fatalities	7.9	4.7	100,000 workers	2001-2003	2.5	44
Risk Factors—Health Policies						
Per Capita Public Health Spending	$190	$162	$/person	2003	2.5	(T)12
Adequacy of Prenatal Care	73.2	75.4	Percent	2003	2.5	34
Immunization Coverage	82.3	80.9	Percent (children ages 19-35 months)	2004	5	(T)22
Outcomes						
Limited Activity Days	1.7	2.1	Days per 30 Days	2004	2.5	(T)6
Cardiovascular Deaths	298.1	332.9	Deaths/100,000	2000-2002	7.5	(T)14
Cancer Deaths	194.4	203.6	Deaths/100,000	2000-2002	7.5	13
Total Mortality	826.7	868.2	Deaths/100,000	2000-2002	10	21
Infant Mortality	6.2	6.7	Deaths/1,000 live births	2003-2004	7.5	(T)17
Premature Death	6,883	7564	YPLL-75/100,000	2002	7.5	20
Overall Rank					100	11

Source: United Health Foundation, *America's Health Rankings: A Call to Action for People and Their Communities*, 2005 Edition.
*(T) indicates Nebraska tied with other states

Infant Mortality

In Nebraska, there were 173 infant deaths in 2004, resulting in a rate of 6.6 deaths per 1,000 live births. This rate is slightly lower than the U.S. rate of 6.85 in 2003.

Infant mortality in Nebraska has decreased from a five-year average of 8.0 infant deaths per 1,000 live births in 1990-1994 to 6.6 deaths per 1,000 in 2000-2004. However, there are still significant disparities between the infant mortality rate for the white population and the rates for some racial and ethnic minority populations in the state.

Table 2-2 presents the trends in infant mortality rates for the five major population groups in Nebraska for 1990-1994, 1995-1999, and 2000-2004. These trends show modest declines in mortality rates for each of the populations between 1990-1994 and 2000-2004. Despite these improvements, however, substantial gaps in rates persist, particularly between the rate for white infants (5.9) and the rates for African American (16.9) and Native American (14.4) infants.

Relative risk data (see Table 2-2) are useful for comparing infant mortality for racial and ethnic minorities with mortality for white infants. Relative risk is the ratio between the infant mortality rate for a minority population and the rate for the white population. Among African Americans, the mortality rate per 1,000 live births decreased from 19.8 in 1990-1994 to 16.9 in 2000-2004, but the relative risk of infant death remained the same because white infant deaths also declined. In 2000-2004, African American babies were still 2.8 times as likely as white babies to die before their first birthday.

For Native American infants, the infant mortality rate decreased from 16.0 to 14.4 over the 15-year period, but the relative risk of infant death actually increased. In 1990-1994, Native American babies were 2.2 times as likely as white infants to die before age one. In 2000-2004, the risk had risen to 2.4 times the risk for white babies.

Among Hispanic Americans in Nebraska, the relative risk of infant death in 2000-2004 was 1.2 times the risk for white infants, compared to 1.1 in 1990-1994.

Asian Americans experienced lower infant mortality rates than the other four racial and ethnic populations in Nebraska, with 3.5 infant deaths per 1,000 live births in 2000-2004. The relative risk of infant death was less than 1.0, indicating that Asian American infants were less likely than white babies to die before their first birthday.

TABLE 2-2

Infant Mortality in Nebraska
Rates and Relative Risk of Mortality* by Race or Ethnic Origin

	1990-1994		1995-1999		2000-2004	
Infant Mortality	Rate per 1,000 Live Births	Relative Risk	Rate per 1,000 Live Births	Relative Risk	Rate per 1,000 Live Births	Relative Risk
Total	8.0	--	7.5	--	6.6	--
White	7.2	--	7.0	--	5.9	--
African American	19.8	2.8	16.4	2.3	16.9	2.8
Native American	16.0	2.2	9.4	1.3	14.4	2.4
Asian American	3.9	0.5	6.1	0.9	3.5	0.6
Hispanic American	7.8	1.1	9.1	1.3	6.9	1.2

*Note: Relative risk of mortality for racial or ethnic minority populations is defined as the infant mortality rate for the minority population divided by the infant mortality rate for the white population.
Source: Nebraska Vital Statistics data, DHHS.

Years of Potential Life Lost

Years of Potential Life Lost (YPLL) is a measure of premature death. The younger the age of the person at death, the more years of potential life are lost. Hence, YPLL is useful in gauging the loss of contributions to human society resulting from deaths due to diseases or adverse events.

Table 2-3 presents the leading causes of death in Nebraska and the YPLL for each cause in three five-year periods. While heart disease, cancer, and cerebrovascular disease have greater numbers of total deaths and higher mortality rates, unintentional injuries (including motor vehicle crashes) result in more years of potential life lost in each five-year period. These trends emphasize the importance of placing high priority on addressing diseases or adverse events with high YPLL, as well as those with high mortality rates.

For some of the leading causes of death in Nebraska (heart disease, cancer, stroke, suicides, and HIV/AIDS), the age-adjusted mortality rates and YPLL have both shown a downward trend over the three five-year periods. Mortality rates for homicide remained steady for the first two periods, but then experienced a decrease in mortality and YPLL in 2000-2004. Mortality rates for pneumonia declined steadily, but YPLL was higher in 1995-1999 and 2000-2004 than in 1990-1994.

Age-adjusted death rates for unintentional injuries rose, but YPLL declined slightly over the 15-year period. Death rates and YPLL resulting from injuries sustained in motor vehicle crashes both experienced upward trends. Deaths and YPLL due to birth defects also increased over the 15-year period.

Disparities in Mortality and Disease among Racial and Ethnic Minority Groups in Nebraska

Table 2-4 presents Years of Potential Life Lost (YPLL) in Nebraska by race and ethnic origin of population groups, based on an assumption of 65 productive years of life. The age-adjusted YPLL rate per 100,000 population from all causes of death combined in Nebraska decreased by about 9 percent from 3,831.1 in 1995-1999 to 3,478.7 in 2000-2004. YPLL rates also declined for each of the five racial and ethnic groups in the state over this time period.

African Americans and Native Americans experienced much higher YPLL rates than white, Asian American, or Hispanic American residents of Nebraska. Although the YPLL rate per 100,000 and the minority-to-white ratio for Native Americans decreased in 2000-2004 compared to the previous five-year period, this population group still had the highest minority-to-white ratio of all (2.4 times the white YPLL rate).

For African Americans, the YPLL rate per 100,000 was 2.2 times the rate for the white population in both five-year periods. Thus, the improvement in YPLL rates for African Americans kept pace with the change in YPLL for the white population but did not narrow the gap between these groups.

Hispanic Americans experienced a decrease of 33 percent in YPLL rates in 2000-2004, reducing the minority-to-white ratio from 1.2 in 1995-1999 to 0.9 in 2000-2004. This change in the YPLL ratio indicates that Hispanic Nebraskans achieved greater improvement in YPLL than white residents and now have a slightly lower rate.

A reduction of 18 percent occurred in the YPLL rate for Asian Americans in the state, resulting in a steady minority-to-white YPLL ratio of 0.5 for this group for the two five-year periods. Thus, Asian Americans lost about one-half as many years of potential life per 100,000 population as white Nebraskans.

TABLE 2-3

Leading Causes of Death in Nebraska
Ranked by Years of Potential Life Lost (YPLL)
1990-1994, 1995-1999, and 2000-2004

	Number of Deaths			Age-Adjusted Death Rate per 100,000 Population			Years of Potential Life Lost*		
	1990-1994	1995-1999	2000-2004	1990-1994	1995-1999	2000-2004	1990-1994	1995-1999	2000-2004
Unintentional Injuries	2,846	3,195	3,457	34.3	36.8	37.6	60,721	59,801	59,734
Motor Vehicle Crashes	1,175	1,297	1,469	14.5	15.5	16.6	32,790	34,259	39,808
Cancer (all forms)	16,434	16,733	16,798	195.1	190.8	182.0	53,408	52,837	50,089
Heart Disease (all forms)	25,196	24,047	20,262	283.6	257.1	205.1	36,528	37,812	34,569
Suicides	953	923	922	12.0	11.2	10.7	22,014	21,815	21,247
Birth Defects	310	343	366	3.9	4.4	4.1	14,858	15,515	16,475
Homicides	273	286	259	3.4	3.4	3.0	9,693	10,233	9,042
Cerebrovascular Disease	5,730	5,981	5,385	63.4	62.9	54.0	6,816	6,794	6,253
Cirrhosis/Chronic Liver Disease	494	487	543	6.4	5.9	6.2	4,594	4,499	4,620
Pneumonia	2,116	2,059	1,838	23.1	21.2	18.0	2,684	3,075	3,061
HIV/AIDS	287	220	108	3.7	2.7	1.3	7,859	5,973	2,507

*Based on 65 years of productive life.
Source: Nebraska Department of Health and Human Services, Vital Statistics.

TABLE 2-4

Years of Potential Life Lost (YPLL) in Nebraska—All Causes Based on 65 Productive Years of Life by Race or Ethnic Origin

	1995-1999			2000-2004		
All Causes	**YPLL**	**Age-Adjusted Rate/100,000**	**Minority-to-White Ratio***	**YPLL**	**Age-Adjusted Rate/100,000**	**Minority-to-White Ratio***
NE TOTAL	303,634	3,831.1	--	301,612	3,478.7	--
White	268,035	3,621.8	--	263,019	3,303.2	--
African American	25,962	7,823.2	2.2	28,041	7,276.7	2.2
Native American	6,910	10,295.0	2.8	6,771	7,900.0	2.4
Asian American	2,224	1,982.8	0.5	2,343	1,631.9	0.5
Hispanic American	17,622	4,457.5	1.2	20,115	3,003.4	0.9

*Minority Age-Adjusted YPLL Rate/100,000 Divided by White Age-Adjusted YPLL Rate/100,000
Source: Nebraska Vital Statistics Data, 1995-1999 and 2000-2004. Nebraska DHHS.

In Table 2-5, the disparity in health status for Nebraska's racial and ethnic minority populations is illustrated by presenting relative risks of mortality or illness (compared to the white population) for selected health indicators. For each population group, this table lists indicators for which the relative risk is at least 1.5 (compared to 1.0 for whites) and classifies them into three groups by the trend in rates (increased, decreased, or remained stable).

More indicators with high relative risk were found for African Americans and Native Americans than for Hispanic Americans and Asian Americans in Nebraska. For African Americans, the risk of contracting and being diagnosed with a sexually transmitted disease (STD) was 16.0 times the rate for whites, while for AIDS incidence, the risk was 11.1 times higher. Incidence of some STD's, including AIDS, has been increasing.

African Americans are 2.3 times as likely as white Nebraskans to die from diabetes-related causes and these death rates increased in 2000-2004. Although the proportion of African Americans who have been diagnosed with diabetes has decreased compared to 1995-1999, prevalence of this disease is still double the rate among whites in the state.

In 2000-2004, the rates for homicides and HIV deaths among African Americans have decreased compared to the previous five-year period, but relative risk is still very high compared to the white population (9.7 for homicides and 7.2 for HIV deaths). The asthma death rate among African Americans has decreased somewhat in the last five years, but African Americans are still 3.9 times as likely as white Nebraskans to die from asthma.

TABLE 2-5

Disparity in Selected Health Status Indicators for Nebraska's Racial and Ethnic Minority Residents Relative Risk of Mortality or Illness Compared to White Population 1995-1999 vs. 2000-2004

Population Group	RELATIVE RISK OF MORTALITY OR ILLNESS IS 1.5 OR GREATER FOR:					
	Rate Increased for:	Relative Risk	Rate Remained Stable for:	Relative Risk	Rate Decreased for:	Relative Risk
African American	STD Incidence	16.0	Infant Mortality	2.8	Homicide	9.7
	AIDS Incidence	11.1	Neonatal Infant Mortality	2.8	HIV Deaths	7.2
	Postneonatal Infant Mortality	3.0	Low Birth Weight	1.9	Asthma Deaths	3.9
	Diabetes-Related Deaths	2.3	Breast Cancer Deaths (Females)	1.8	Have Diabetes	2.0
	Lung Cancer Deaths	1.7	Obese (BMI=30+)	1.5	Prostate Cancer Deaths	1.9
	Fair or Poor Health (self-reported)	1.7	High Blood Pressure	1.5	Stroke Deaths	1.6
	High Blood Cholesterol Level	1.5				
Native American	Cirrhosis Deaths	13.9	Alcohol-Related Deaths	3.9	Homicide	5.7
	STD Incidence	5.1	Unintentional Injury Deaths	2.4	Diabetes-Related Deaths	3.7
	Postneonatal Infant Mortality	4.5			Currently Smoke Cigarettes	1.8
	AIDS Incidence	4.1			Deaths--All Causes Combined	1.6
	Have Diabetes	3.0				
	Motor Vehicle Injury Deaths	2.6				
	Infant Mortality	2.4				
	Fair or Poor Health (self-reported)	2.0				
	Obese (BMI=30+)	1.6				
	Neonatal Infant Mortality	1.5				
Asian American	AIDS Incidence	1.7				
Hispanic American	Cirrhosis Deaths	2.5	STD Incidence	2.8	AIDS Incidence	4.3
	Fair or Poor Health (self-reported)	2.4	Cervical Cancer Deaths	2.4	Homicide	3.1
	No Leisure-Time Physical Activity	1.8			HIV Deaths	2.2
	Have Diabetes	1.7				
	Diabetes-Related Deaths	1.6				

*Relative Risk for Whites is 1.0 in this table.

Source: Nebraska DHHS Vital Statistics, HIV/AIDS Surveillance Program, Communicable Disease Division, BRFSS.

Infant mortality and low birth weight rates remained stable for African Americans in 2000-2004 compared to 1995-1999. However, compared to white infants, African American babies were still 2.8 times as likely to have low birth weight and 2.8 times as likely to die before their first birthdays.

Native Americans were also at higher risk than the white population for a large number of health indicators. Native Americans were 13.9 times as likely as white Nebraskans to die from cirrhosis of the liver and mortality rates have been increasing. Persons in this population group were 5.1 times as likely as whites to contract and be diagnosed with a sexually transmitted disease. Incidence of AIDS was 4.1 times higher among Native Americans than among whites in the state. In addition, incidence rates for some STD's and AIDS have increased in 2000-2004.

The infant mortality rate for Native Americans rose in 2000-2004 (compared to the previous five-year period), so that Native American babies were 2.4 times as likely as white infants to die in their first year of life. Post-neonatal deaths (those occurring among infants aged 28 days to 1 year) were 4.5 times as likely among Native Americans as among whites in Nebraska.

Prevalence of diagnosed diabetes increased among Native Americans and was 3.0 times as high as the rate among whites in the state in 2000-2004. Although the diabetes-related death rate among Native Americans decreased somewhat (compared to the previous five-year period), the death rate was still 3.7 times the rate for white persons.

Native Americans were 2.6 times as likely as white Nebraskans to die as a result of injuries sustained in motor vehicle crashes in 2000-2004 and the death rate had increased compared to 1995-1999. The alcohol-related death rate remained stable during the two five-year periods, but was 3.9 times as high as the rate for the white population. Although there was a slight decline in the homicide rate, Native Americans were still 5.7 times as likely as whites in the state to die from this cause.

There were several health indicators for which Hispanic Americans experienced relative risks of 1.5 or higher. Although incidence of AIDS and HIV deaths both declined somewhat among this group, Hispanic Nebraskans were still 4.3 times as likely as whites to be diagnosed with AIDS and 2.2 times as likely to die from HIV. Incidence of some STD's was fairly steady during the two five-year periods, but risk for Hispanic Americans was 2.8 times as high as the risk for the white population.

The death rate for cirrhosis of the liver increased among Hispanic Nebraskans and was 2.5 times the white rate in 2000-2004. The cervical cancer death rate averaged 2.4 times the rate for white women in Nebraska during this time period. Compared to the previous five-year period, the homicide rate among Hispanic Americans decreased in 2000-2004. However, persons of Hispanic origin were still 3.1 times as likely as white persons to die as a result of homicide.

There was only one indicator for which Asian Americans experienced a relative risk of 1.5 or higher. Asian Americans in Nebraska were 1.7 times as likely as white Nebraskans to contract and be diagnosed with AIDS.

Risk Factor Prevalence and Access to Care for Racial and Ethnic Minorities

Limited access to health care services is a major contributor to higher rates of illness, death, and years of potential life lost. Financial constraints are an important barrier to accessing health care services. Having no health insurance or having a health care plan that provides inadequate coverage for needed services, combined with a lack of financial capacity to cover services falling outside insurance coverage, makes it difficult or impossible for many people to get necessary medical care. Persons without health insurance are less likely to have a regular health care provider, to visit the doctor, to obtain preventive care, and to obtain needed tests and prescriptions. Health insurance status has also been found to be a reliable predictor of overall health status.

Table 2-6 presents a summary of access to health care measures for each of the major racial and ethnic population groups in Nebraska. In 2000-2004, among adults aged 18 to 64 years, Hispanic Nebraskans (38.1 percent) were more than three times as likely as whites (11.9 percent) to report not having health insurance. Native Americans (25.4 percent) and African Americans (19.3 percent) were also considerably more likely than white residents to be uninsured. For Asian Americans, the rate was somewhat higher than the white rate (14.1 percent).

A similar pattern emerges in the proportion of adult Nebraskans who report that, at least once in the last 12 months, they were unable to see the doctor due to potential cost of health care. Native Americans (22.0 percent), Hispanic Americans (17.4 percent), and African Americans (17.2 percent) were all more likely than white adults (9.7 percent) or Asian American adults (12.6 percent) to say cost of care prevented them from visiting a physician for needed medical care. These findings correspond to the proportions of these populations with incomes below 100 percent of the federal poverty level in 2000. Native Americans (33.0 percent), African Americans (27.4 percent), and Hispanic Americans (20.4 percent) were all more likely than whites (8.2 percent) or Asian Americans (12.8 percent) to be living in poverty.

The proportions of adults receiving health care services also differed by race and ethnic origin in Nebraska. The percentages of mothers receiving first trimester prenatal care were much smaller for Native Americans (68.3 percent), Hispanic Americans (69.3 percent), and African Americans (70.5 percent) than for white (84.7 percent) or Asian American (82.2 percent) mothers.

More than 40 percent of adults aged 65 and older in each racial and ethnic minority group reported not having a flu shot in the past 12 months. Among white adults in this age bracket, only 29.5 percent had not been vaccinated for influenza.

When asked to rate their own health status, the population groups least likely to have health insurance or be able to see the doctor when needed were the same groups most likely to say their health status is “Fair” or “Poor”. Nearly one-third of Hispanic adults (31.0 percent), 26.4 percent of Native Americans, and 22.9 percent of African Americans considered their health fair or poor, compared to 13.1 percent of whites and 13.3 percent of Asian American adults.

TABLE 2-6

Summary of Access to Care, Social Status and General Health Indicators Among Nebraskans Aged 18 and Older by Race or Ethnic Origin (2000-2004)

Indicator	African American	Native American	Asian American	Hispanic American	White
No health insurance (aged 18 to 64 years)	19.3	25.4	14.1	38.1	11.9
Unable to see doctor due to cost in past 12 months	17.2	22.0	12.6	17.4	9.7
Mothers receiving first trimester prenatal care*	70.5	68.3	82.2	69.3	84.7
No flu shot in past 12 months (age 65 +)	46.7	46.2	40.7	41.7	29.5
No mammogram within past 2 years (women age 40 +)	27.2	42.3	30.0	31.5	29.1
Never had a sigmoidoscopy or colonoscopy (age 50 +)	61.0	51.3	91.0	67.4	59.6
Self-rated health status "Fair" or "Poor"	22.9	26.4	13.3	31.0	13.1
Poverty Rates ** (2000)					
Total population	27.4	33.0	12.8	20.4	8.2
Children under age 5 years	42.7	36.7	12.6	25.0	10.4
Children aged 5-17 years	36.7	35.4	9.6	23.2	9.3
Children under age 18 years	38.3	38.9	10.3	23.8	9.5

**Data Source*: Nebraska DHHS, Vital Statistics System.
**Percent of population with incomes below 100% of federally designated poverty level. U.S. Census data.
Remaining data are from 2000-2004 Nebraska Behavioral Risk Factor Surveillance System, Nebraska DHHS.

Behavioral Risk Factors

In 2005, the Nebraska DHHS conducted an expanded behavioral risk factor survey to gather baseline data for the eighteen health departments funded by the Health Care Funding Act. Table 2-7 presents a summary of key risk factors for each health district.

In 2005, two of the eighteen local health districts had a significantly higher proportion of adults with no health insurance when compared to the Nebraska proportion. Four local health departments had a significantly lower proportion of adults who reported always or nearly always using safety belts. Three of the eighteen local health districts had a significantly lower proportion of adults who visited the dentist within the past year than the state as a whole, while four had a lower proportion of adults who had a current cholesterol screening (within the past 5 years). The percentage of adults who experienced barriers in receiving health care due to cost, who reported diagnosis of diabetes, high blood cholesterol, or high blood pressure was relatively equal among health departments with no significant differences emerging.

Progress on Nebraska's Year 2010 Health Objectives

This section highlights the progress toward (successes) or movement away from (areas for improvement) the Nebraska Year 2010 Health Objectives (see Table 2-8). Overall, many improvements have been made in the health status of Nebraska residents in the past few years. For example, the target rate for the proportion of adults who ever had a proctoscopic exam was 50 percent, and 51.9 percent of Nebraskans had an exam in 2005. Another example of progress toward Year 2010 objectives is the proportion of adults who have had their blood cholesterol level checked within the past five years. The target is 80 percent and the rate has increased from 66.0 percent in 1997 to 71.4 percent in 2005.

There are also some areas where movement away from Year 2010 objectives is evident. Most notably, there has been an increase in the proportion of adults who are obese (i.e., a body mass index [BMI] reading of 30+) from 17.0 percent in 1997 to 23.8 percent in 2005. The objective for obesity is 15.0 percent. Another example is the percent of Nebraska adults with no health insurance. The rate has increased from 7.6 percent in 1997 to 15.6 percent in 2005. Although these rates are troubling, they are similar to what has been occurring in many other states.

TABLE 2-7
2005 Comparison of behavioral risk factors among adults in Nebraska Local Health Departments[1]

Indicator	NE	CD	DC	EC	ELV	FC	LLC	LB	NC	NE	P	PHS	SC	SH	SE	SW	3R	2R	WC
Fair or poor health	15.1	16.7	14.2	12.9	17.9	**9.9***	11.8	**9.8**	16.5	18.6	20.5	13.1	15.4	18.6	19.9	21.1	15.9	18.2	14.9
No health care coverage, adults 18-64	15.6	22.0	14.5	**27.0**	12.9	12.0	15.4	**25.4**	24.3	17.0	21.9	11.6	**6.8**	20.2	12.9	20.8	11.3	20.0	15.9
No consistent health care provider	17.1	18.5	18.0	18.3	16.4	16.2	17.3	15.4	16.8	16.1	19.9	13.2	18.1	16.3	**7.7**	19.4	14.2	15.3	11.1
Cost prevented health care	10.6	18.0	7.7	13.8	9.9	9.4	10.6	12.1	14.5	15.1	13.2	7.8	7.0	14.4	13.6	15.6	12.5	13.3	13.2
Current mammogram, women 40+	72.1	61.9	75.0	61.9	75.8	64.2	77.8	68.0	63.7	70.1	75.3	65.7	77.8	70.7	60.8	67.6	79.8	68.1	**59.8**
Current blood stool test, adults 50+	28.0	31.6	28.4	22.1	25.3	20.6	33.2	29.5	20.2	26.4	24.9	30.6	27.0	34.9	**17.6**	26.0	33.3	33.4	20.3
Ever had sigmoidoscopy or colonoscopy, adults 50+	51.9	43.5	57.4	52.2	45.0	46.3	57.6	43.0	46.8	51.9	48.0	**39.1**	61.4	47.3	42.9	46.0	53.2	47.2	51.5
Diagnosed diabetes	6.9	6.4	7.1	7.4	6.1	6.5	5.4	4.6	7.0	8.0	10.7	4.9	6.3	9.4	8.0	7.2	7.8	7.6	5.6
Seatbelt usage (always or nearly always)	87.1	81.8	91.1	80.3	85.9	88.7	88.5	**77.7**	**79.4**	87.8	83.1	82.3	91.0	82.7	82.0	**78.2**	88.5	87.3	**74.2**
Bicycle helmet usage, children 5-15 (always or nearly always)	37.1	39.1	38.0	**15.0**	**17.2**	40.6	47.6	39.1	32.6	36.0	45.9	47.7	37.1	40.6	23.3	25.6	30.9	37.6	27.7
Obesity: BMI reading of 30+	23.8	27.6	19.0	24.6	23.6	21.1	26.8	25.1	24.3	25.4	29.3	24.8	22.7	26.8	27.4	**31.6**	25.4	27.5	22.8
Recommended physical activity[2]	50.0	49.3	47.4	53.9	45.0	47.3	**59.5**	44.2	42.1	46.7	43.6	49.0	52.1	41.6	54.7	48.7	53.3	47.1	49.8
Current cigarette smoking	20.3	16.8	18.1	18.4	23.5	20.8	18.5	20.5	24.8	22.8	22.5	17.1	20.1	**30.0**	**30.7**	20.6	28.6	17.4	27.2
Current dentist visit	73.0	66.3	74.1	66.5	68.8	73.3	**83.8**	66.6	67.6	**63.7**	64.4	65.9	79.6	**60.8**	67.9	**62.3**	71.0	73.4	67.7
Ever had asthma	12.9	9.8	12.2	15.0	11.8	7.9	17.7	9.6	11.9	11.7	10.2	**7.1**	14.4	13.4	9.6	15.7	11.3	11.2	12.4
Current blood cholesterol screening	71.4	66.1	78.3	65.3	**63.1**	66.4	72.0	**59.8**	70.2	**63.0**	66.4	73.7	73.1	64.2	**59.3**	64.5	75.7	66.1	70.6
Diagnosed high blood cholesterol	33.8	40.2	34.8	31.1	34.3	27.0	32.0	25.6	32.8	30.3	37.1	35.8	33.9	38.2	43.6	37.6	33.8	36.2	32.5
Diagnosed high blood pressure	26.8	26.3	27.1	23.2	23.6	21.3	26.1	24.9	22.0	33.5	27.8	31.8	26.1	26.6	26.4	33.7	25.4	30.6	26.7
Received flu shot in the past year	30.3	26.3	33.4	27.8	31.0	25.3	25.4	**22.2**	32.0	28.7	30.8	29.6	36.3	24.4	29.3	33.0	29.8	31.6	**21.9**

[1]The following abbreviations were used for Local Health Departments: CD, Central District Health Department; DC, Douglas County Health Department; EC, East Central District Health Department; ELV, Elkhorn Logan Valley Public Health Department; FC, Four Corners Health Department; LLC, Lincoln-Lancaster County Health Department; LB, Loup Basin Public Health Department; NC, North Central District Health Department; NE, Northeast Nebraska District Health Department; P, Panhandle Public Health Department; PHS, Public Health Solutions District Health Department; SC, Sarpy/Cass Department of Health and Wellness; SH, South Heartland District Health Department; SE, Southeast District Health Department; SW, Southwest Nebraska Public Health Department; 3R, Three Rivers Public Health Department; 2R, Two Rivers Public Health Department; WC, West Central District Health Department.

[2]Adults, aged 18 and older, reporting that they engage in moderate physical activity for 30 or more minutes on five or more days per week, or vigorous physical activity for 20 or more minutes on three or more days per week.

*Shaded areas denote significant differences.

Access to Care – The number of self-reported uninsured adults in Nebraska increased from 7.6 percent in 1997 to 15.6 percent in 2005. The Year 2010 target rate is zero percent. The proportion of Nebraska families that reported experiencing difficulty or delays in obtaining health care also rose from 6.5 percent in 1997 to 10.6 percent in 2005, exceeding the Year 2010 objective of 4 percent. Additionally, there was an increase in the percentage of adults aged 18+ who reported that they have no personal doctor or health care provider, from 11 percent in 1997 to 17.1 percent in 2005. The 2005 percentage exceeds the Year 2010 objective of 2 percent. These trends are also in harmony with many other states indicating that federal policies and programs have not been effective.

Cancer – Cancer is the second leading cause of death of Nebraska residents after cardiovascular disease. In 2003, lung cancer was the leading cause of cancer deaths among Nebraska men and women. Colorectal cancer was the second leading cause of cancer death overall, while breast cancer was the second leading cause of cancer death for women. The number of cancer deaths in Nebraska has decreased from 184.3 per 100,000 in 1997 to 173.5 in 2004. This shows progress toward the Year 2010 objective of 147.0. The proportion of Nebraska women who reported ever having a mammogram increased from 55.6 percent in 1997 to 61.0 percent in 2005. Additionally, the proportion of women aged 40+ who have received a mammogram within the preceding two years was 72.1 percent in 2005, nearly achieving the Year 2010 target of 75 percent. The proportion of adult Nebraskans aged 50+ who reported having a fecal occult blood test in the past two years increased from 16.3 percent in 1997 to 28.0 percent in 2005. The proportion of Nebraska adults aged 50+ who ever had a proctoscopic exam also increased from 1997 to 2005, from 38.0 percent to 51.9 percent. The 2005 percentage exceeds the Year 2010 objective of 50 percent.

Diabetes – The number of diabetes-related deaths increased slightly with 68.7 deaths per 100,000 in 1997 and 69.8 deaths per 100,000 in 2004. The objective is 25.0 deaths per 100,000. The percentage of adults aged 18+ who were told by a doctor they have diabetes has increased from 4.2 percent in 1997 to 6.9 percent in 2005. This indicates that Nebraska is moving farther away from the Year 2010 objective of 2.5 percent of adults being told they have diabetes by a doctor. Being overweight or obese and low physical inactivity are two major risk factors for developing diabetes.

Injury – Unintentional injuries are the fifth leading cause of death in Nebraska, with motor vehicle crashes the leading cause of those deaths. The unintentional injury death rate in Nebraska increased from 36.7 deaths per 100,000 in 1997 to 39.3 in 2004, moving farther away from the Year 2010 objective (19.4 deaths per 100,000). The death rate due to motor vehicle crashes has decreased slightly from 18.3 deaths per 100,000 in 1997 to 15.6 in 2004.

The proportion of children aged five to 15 years who sometimes, seldom, or never wear a bike helmet when riding a bicycle decreased from 69.6 percent in 1997 to 62.9

percent in 2005. This indicates that Nebraska is getting closer to achieving the Year 2010 objective of 50 percent of children ages 5 to 15 who sometimes, seldom or never wear a bike helmet. The proportion of adult Nebraskans who report “always” or “nearly always” using their automobile safety belts has continued to increase from 77.9 percent in 1997 to 87.1 percent in 2005. The Nebraska law that requires use of safety belts in motor vehicles is a secondary law, where drivers are cited for a violation only if stopped for a separate violation. States like Iowa that have primary seatbelt laws, meaning that drivers can be stopped for not wearing seatbelts, have higher usage rates.

Obesity – An adult who has a BMI of 30 or higher is considered obese. The proportion of adults aged 18+ who reported a BMI reading of 30+ reached almost one quarter of Nebraska’s population, when it increased from 17.0 percent in 1997 to 23.8 percent in 2005. The Year 2010 objective is 15 percent. Good nutrition and physical activity are both ways to reduce the risk of becoming obese. The proportion of adults aged 18+ who engaged in regular and vigorous physical activity in the past month increased from 21.6 percent in 1997 to 27.5 percent in 2005. The 2005 percentage comes close to reaching the Year 2010 objective of 30 percent of adults engaging in regular and vigorous physical activity in the previous month. Finally, the proportion of Nebraskans who engaged in regular and sustained physical activity in the past month was 37.6 percent in 2005, which exceeds the Year 2010 objective of 30 percent.

Substance Use – The prevalence of drinking and driving among adults aged 18+ decreased slightly from 3.8 percent in 1997 to 3.4 percent in 2004. The Nebraska Year 2010 objective is one percent. The prevalence of binge drinking among adults aged 18+ increased slightly from 1997 to 2004, from 16.3 percent to 17.7 percent, moving farther away from the Year 2010 goal of six percent. The prevalence of binge drinking among high school students also increased from 28.5 percent in 1997 to 33.6 percent in 2004. The Year 2010 objective is 25 percent. The prevalence of cigarette smoking among Nebraskans decreased slightly from 22.1 percent in 1997 to 20.3 percent in 2005. The Year 2010 objective is 12 percent.

Oral Health – The proportion of adults aged 18+ who visited a dentist within the past year remained about the same with 72.5 percent in 1999 and 73.0 percent in 2005.

Asthma – The proportion of adults aged 18+ who were ever told by a health professional that they have asthma increased from 8.7 percent in 2000 to 12.9 percent in 2005.

Cardiovascular Disease – Heart disease remains the leading cause of death in Nebraska. However, age-adjusted coronary heart disease deaths have decreased from 158.0 per 100,000 population in 1997 to 106.7 per 100,000 population in 2004. The Year 2010 objective is 85.4 deaths per 100,000 population. Additionally, stroke deaths decreased from 57.6 to 48.0 deaths per 100,000 population in an eight-year period, almost reaching the Year 2010 objective of 47.4 deaths per 100,000 population.

A high level of cholesterol in the blood is a major risk factor for coronary heart disease. It is recommended that individuals aged 20 and older have their cholesterol measured once every five years. In Nebraska, the proportion of adults who have had their blood cholesterol level checked in within the past five years increased from 66.0 percent in 1997 to 71.4 percent in 2003. This shows progress toward the Year 2010 objective of 80.0 percent.

This chapter has provided a brief snapshot of current levels and changes in the health status of Nebraskans over the past several years. Overall, Nebraskans enjoy an average health status. The minority populations continue to grow more rapidly than the white population. As a result, it will be important for public health professionals to respond to the significant health disparities that exist in this state. Nebraska has made notable progress toward many 2010 objectives including deaths from heart disease and cancer. Though more work is required in other areas where there has been movement away from objectives, such as the number of Nebraskans with health insurance and the number of women who get regular mammograms.

TABLE 2-8

Progress Toward Selected Nebraska Year 2010 Objectives

National Objective	Nebraska Objective	Nebraska					
		1997		Current		Year 2010	
		Year(s)	Rate	Year(s)	Rate	Target Rate	Projected
1.1	Percent of adults aged 18+ with no health insurance	1997	7.6%	2005	15.6%	0%	Movement away from objective
1.4c	Percent of adults aged 18+ with no personal doctor or health care provider	1997	11.0%	2005	17.1%	2%	Movement away from objective
1.6	Proportion of families that experience difficulty or delays in obtaining health care	1997	6.5%	2005	10.6%	4%	Movement away from objective
3.1	Cancer deaths per 100,000 population	1997	184.3	2004	173.5	147.0	Progress toward objective
--	Percent of women who ever had a mammogram	1997	55.6%	2005	61.0%	--	--
3.13	Proportion of women aged 40+ who have received a mammogram within the preceding two years	2002	75.1%	2004	72.1%	75%	Movement away from objective
3.12a	Proportion of adults aged 50+ who had a fecal occult blood test in the past two years	1997	16.3%	2005	28.0%	50%	Progress toward objective
3.12b	Proportion of adults aged 50+ who ever had a proctoscopic exam	1997	38.0%	2005	51.9%	50%	Met objective
5.5	Diabetes-related deaths per 100,000 population	1997	68.7	2004	69.8	25.0	Movement away from objective
5.3 p.80	Percent of adults aged 18+ who were told by a doctor they have diabetes	1997	4.2%	2005	6.9%	2.5%	Movement away from objective
15.13	Unintentional injury deaths per 100,000 population	1997	36.7	2004	39.3	19.4	Movement away from objective
15.15a	Deaths due to motor vehicle crashes per 100,000	1997	18.3	2004	15.6	12.0	Progress toward objective
15.19	Proportion of adults aged 18+ who self-report always or nearly always using safety belts when riding in or driving a vehicle	1997	77.9%	2005	87.1%	92%	Progress toward objective
15.23	Proportion of children aged 5 to 15 years who sometimes, seldom, or never wear a bike helmet when riding a bicycle	1997	69.6%	2005	62.9%	50%	Progress toward objective
19.2	Proportion of adults aged 18+ who reported a BMI reading of 30+ (obesity)	1997	17.0%	2005	23.8%	15%	Movement away from objective
22.2	Proportion of adults aged 18+ who engaged in regular, sustained physical activity in the past month	1996	20.2%	2005	37.6%	30%	Met objective
22.3	Proportion of adults aged 18+ who engaged in regular, vigorous physical activity in the past month	2003	21.6%	2005	27.5%	30%	Progress toward objective
--	Prevalence of drinking and driving among adults aged 18+	1997	3.8%	2004	3.4%	1%	No change
16.11c	Prevalence of binge drinking in past month --adults aged 18+ --high school students	 1997 1997	 16.3% 28.5%	 2004 2004	 17.7% 33.6%	 6% 25%	 Movement away Movement away
27.1a	Prevalence of cigarette smoking among adults	1997	22.1%	2005	20.3%	12%	Progress toward objective
--	Proportion of adults aged 18+ who visited a dentist within the past year	1999	72.5%	2005	73.0%	--	--
--	Proportion of adults aged 18+ who were ever told by a health professional that they have asthma	2000	8.7%	2005	12.9%	--	--
12.1	Coronary heart disease deaths per 100,000 population	1997	158.0	2004	106.7	85.36	Progress toward objective
12.7	Stroke deaths per 100,000 population	1997	57.6	2004	48.0	47.4	Progress toward objective
12.15	Proportion of adults 18+ who have had their blood cholesterol level checked within the past five years	1997	66.0%	2003	71.4%	80.0%	Progress toward objective

Source: Behavioral Risk Factor Survey of Nebraska Adults by Local and District Public Health Departments: A Point in Time Study (2006) and Nebraska Department of Health and Human Services, Vital Statistics.

Chapter 3
Action Strategies for Change

In order to meet the future public health challenges described in Chapter 2, new and improved strategies must be developed and implemented. This chapter will outline the broad strategies that are needed to improve and strengthen the public health system in Nebraska. The seven major strategies in this plan were developed by the Turning Point Public Health Stakeholders Group. These strategies are similar to and consistent with the priorities of the Division of Public Health. The following key strategies for strengthening and transforming public health in Nebraska are listed below and are discussed in greater detail throughout the chapter. For each major strategy, specific recommended approaches are also included. Although some of the recommendations can be implemented immediately, it may take several years before others can be implemented because they will involve major system changes at both the state and local levels. In order to be successful, new partnerships must be formed and creative financing strategies need to be identified.

Key Strategies

I. Continue to build the public health infrastructure by developing integrated data systems and providing education and training of the public health workforce.
II. Enhance the credibility and visibility of public health by demonstrating the value of public health to policymakers and the general public.
III. Strengthen the capacity of the public health system to address the impact of environmental issues.
IV. Expand local, regional, and state systems to develop and deliver innovative health promotion and disease prevention programs.
V. Improve access to high quality, affordable health care services by strengthening the health care safety net, expanding the supply of health professionals and services in underserved areas, and providing culturally competent care.
VI. Develop an integrated system of lifespan primary and preventive care.
VII. Develop sustainable financing for public health services.

Strategy I: Continue to Build the Public Health Infrastructure by Developing Integrated Data Systems and Providing Education and Training of the Public Health Workforce

In the past six years, Nebraska has greatly strengthened and transformed its public health infrastructure. A description of this transformation was discussed in Chapter 1. Despite the significant changes that have occurred, many challenges still remain. This strategy is divided into the following two areas: (A) Data as a Foundation for Public Health and (B) Strengthening the Public Health Workforce.

Strategy I-A: Data as a Foundation for Public Health

The health data system is a critical component of the public health infrastructure and serves as the foundation for making decisions about program interventions and resource allocation. Data can be used to determine which health problems create the biggest threat to health and quality of life and which specific target populations are most at risk.[27] This targeted use of data is accomplished by examining data that show the magnitude and distribution of health problems in the population. Gathering and examining data serves three functions: (1) to establish the importance of various health problems in the target population and in subgroups; (2) to provide a basis for setting and evaluating program priorities among the various health problems and subgroups; and (3) to help distribute responsibilities among collaborating professionals, agencies, or departments.

In recent years, there has been a movement toward evidence-based public health. This means that public health professionals (1) define the problem, (2) track down the best evidence, (3) analyze the evidence, (4) create an intervention, policy, or make a decision, and (5) evaluate their progress. To carry out evidence-based public health, quality data are needed regarding the importance of health conditions and their links with preventable risk factors. Evidence is limited for some public health conditions, but approaches must be based on sound science, theory, and planning.

The following is an example of evidence-based public health and its influence on a policy decision.[28] Alcohol-related motor vehicle crashes contribute to thousands of deaths and injuries each year in the United States. Lowering legal blood alcohol concentration (BAC) levels for drivers was proposed as a response to help reduce these numbers. In 2001, a review of policies showed that laws allowing a BAC of 0.08 percent versus 0.10 percent resulted in an approximately seven percent decrease in fatal alcohol-related motor vehicle crashes. As a result of this evidence, Congress gave states

[27]Green, L.W. & Kreuter, M.W. (1961). *Health promotion planning: An educational and ecological approach* (3rd ed.). Boston, MA: McGraw-Hill.
[28]Fielding, J.E. & Briss, P.A. (2006). Promoting evidence-based public health policy: Can we have better evidence and more action? *Health Affairs*, *25*, 969-978.

incentives to pass 0.08 percent BAC laws. Evidence-based recommendations can also be used to discourage the use of less effective programs. For example, the Drug Abuse Resistance Education (D.A.R.E.) program is widely used in U.S. schools and costs hundreds of millions of dollars annually. Quality studies and reviews show that the D.A.R.E. program has no or negligible effects on drug use behavior in young people, compared to other more effective programs, yet schools continue to implement the program. This evidence forced D.A.R.E. to overhaul its program, though the effectiveness is still questionable. This example illustrates the importance of evaluating programs on a smaller scale before disseminating them to a larger audience, as well as the difficulty of halting a popular program despite considerable evidence that shows ineffectiveness two decades after its nationwide establishment.

As mentioned in Chapter 1, one of the core functions of public health is assessment, which involves the collection and analysis of information to identify important health problems. Two of the ten essential public health services relate to the assessment function: (1) monitor health status to identify community health problems and (2) diagnose and investigate health problems and health hazards in the community. In an effort to improve the ability of Nebraska public health professionals to provide these essential services, this section of the plan focuses on building and strengthening our data system.

Current Situation in Nebraska

A data committee was formed in August 2006 and met to discuss the current situation in regard to data availability, integration, and use of current data across Nebraska. The overarching problem identified by the committee was a lack of a comprehensive data system. The general goal then, is to strengthen and transform the current public health data system so that the state, tribes, communities, and public health agencies can respond to the challenge of protecting and improving the public's health in the future. The committee identified five areas where problems were occurring: (1) data infrastructure, (2) local level data, (3) data sharing, (4) inadequate funding, and (5) non-integrated databases.

Data Infrastructure

Although the health data system at the state level has an effective collection system and a highly committed workforce, the system has several weaknesses. One weakness is that there are not enough individuals (biostatisticians, epidemiologists, etc.) to analyze the amount of data gathered. The Nebraska Department of Health and Human Services (NDHHS) collects many types of data. They range from basic vital statistics to specific disease surveillance or water quality data. While there may be a need to collect additional data, it is essential that existing data are fully utilized. The low number of data specialists leads to a decreased capacity to provide technical assistance to other public health professionals such as local health departments and other health-related

organizations. Another weakness is that it is difficult to develop and implement new data projects when all efforts and human resources are used to maintain existing projects. New data projects could help further identify current health trends and emerging health concerns.

The NDHHS lacks an individual or group who oversees data collection and analysis. Without a "data coordinator," it is difficult to know what data projects are in progress, what short term studies are initiated, and whether one study could be combined with another. This coordinator could ensure that data are disseminated consistently and in an accessible manner. Currently, reports are added to the DHHS research and statistics web page in publication order, which makes it difficult to find topic specific reports. A weakness of the current data infrastructure is that no one has outlined a basic set of priority indicators on which to focus data collection. These elements are essential to a data system to avoid duplication of data collection efforts and to produce a product that is useful at multiple levels.

Local Level Data

As local health departments build capacity, they need relevant data to assess their health needs and set priorities. Public health professionals working at the local level would like to have access to a comprehensive list of data sources and reports. Access to a list of data sources and important contacts would assist them in reviewing data relevant to their communities and identifying key local public health issues. Local public health agencies also have difficulty obtaining data for their localities because sample sizes and the actual number of cases are often too low to draw meaningful conclusions.

While some of the larger, established health departments have data divisions, some local health departments do not have the capacity or expertise to analyze data. As a result, most local data has not been thoroughly examined and in a few cases, incorrect conclusions have been drawn. Some of these problems could be overcome with more appropriate education, training, and technical assistance.

Data Sharing

Sharing data between and among organizations can be a complicated task. Some organizations are hesitant to share programmatic data, especially at the local level. A failure to understand privacy laws, a lack of trust, and a misunderstanding of how the data will be used (e.g., comparing substance abuse rates in schools) can amplify this hesitancy. Data sharing is more successful when partnerships are formed and trust is established. There is often limited communication between agencies and programs regarding data collection activities, which can result in duplication of efforts. Even though most public health data are exempt, HIPAA regulations can impede data collection and sharing because groups may find it easier to not share data and avoid the risk of potential penalties altogether. These groups may not understand all of the

HIPAA regulations so they may choose to be "better safe than sorry." Also, public health professionals encounter challenges gaining access to certain parts of their target population when implementing public health surveys, such as accessing youth in schools or the growing number of individuals who use cell phones rather than the more traditional land lines which have a broader database for access. This makes it difficult to compile representative survey data such as those from the Behavioral Risk Factor Surveillance System or Youth Risk Behavior Survey.

Inadequate Funding

Currently, little state funding is designated for data collection or analysis. It is also relatively expensive to fund surveys and data specialty positions, though the benefits outweigh the cost. Existing federal funding is often disease or topic specific, which makes it difficult to obtain funding to expand more general data collection activities and build an integrated data system. Part of the problem is that the public health community in Nebraska has been relatively ineffective at communicating the reasons why a greater investment is needed.

Non-Integrated Databases

The data committee members suggested that Nebraska needs an integrated data system that compiles health information in a standardized manner and allows electronic access by multiple users for multiple purposes.[29] An integrated data system allows agencies to track individuals over time and across different health agencies. Health care organizations, both public and private, collect health information and have been doing so for years. Some of this information has been untouched and could be very useful in identifying health trends. In general, Nebraska databases are not linked; as a result, health professionals cannot easily identify and treat comorbidities, instead they are often forced to treat illnesses separately or to create complicated systems to integrate data sets. Finally, gaps exist in current data sets. For example, it is very difficult to access mental health and substance abuse data.

Nebraska's voluntary hospital discharge data set is less complete now than it has been in the past. Hospitals send copies of their claims to the Nebraska Hospital Association (NHA) which compiles the data. From 1996 to 2003, approximately 90 percent of claims were reported, but in 2004, the number of claims reported dropped to 84 percent. The major reason for this decrease is a change in software used to process claims. Now, hospitals use approximately twelve different methods to send data to the NHA, and technical issues prevent some from sending data. As the data percentage drops, the value of some of the reports generated also declines.

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[29]Bailey, W.P. (2003, September). *Integrated state data systems: Tools for monitoring the health care safety net*. Agency for Healthcare Research and Quality, Rockville, MD. Retrieved October 24, 2006, from http://www.ahrq.gov/data/safetynet/bailey.htm

Recommendations

Considerable planning needs to occur before an integrated data system can be created. The following recommendations should serve as a guide for that planning. While the public health community should work on all of the recommendations, the following strategies should be developed before the others: 1, 3, 8, and 15 (these are indicated with an asterisk (*) in the paragraphs below).

NDHHS and other partners should strengthen the current public health data infrastructure by:

1. Convening a group of state and local public health stakeholders to define a set of priority indicators which can be used to identify health problems and monitor health trends at the state and local levels. The group should include the rationale for choosing each indicator and how state and local health professionals can best collect and use the data.*

2. Developing an annual state public health report card. Each local health department should use common indicators to develop an identical local report card.

3. Hiring an epidemiology coordinator in the Division of Public Health to provide technical assistance to local health departments. At this point, most local health departments lack the capacity and human resources to perform data analysis. An epidemiologist specifically focused on providing technical assistance to local health departments (LHDs) would help them increase their ability to utilize data to plan programs.*

4. Hiring three epidemiologists to each work with 5-6 local health departments. Their work would be overseen by the epidemiology coordinator.

5. Using the epidemiology coordinator to manage data collection and investigations for the Community Planning and Protection, Health Promotion, and Lifespan Health Services Units.

6. Reviewing how other states manage their public health data and use this information to help create a plan to build an integrated data system in Nebraska.

7. Building data capacity through partnerships with the College of Public Health at UNMC.

   * Denotes a priority.

The DHHS and other public health partners should increase the access to public health data by public health professionals working at the local level and help to increase their capacity to work with public health data by:

8. Increasing awareness among potential data users of current public health data sources and how to access them. This would also require a social marketing or dissemination plan to inform potential data users as to the location of and source of various data sets. This could be done by expanding a public health data source/report list, including definitions, strengths and limitations, and categories. The list should be updated annually and distributed to individuals and organizations, and also made available on the DHHS and partner websites.*

9. Assessing local public health data needs to determine what information is most relevant to all, and then ensuring that those public health data are analyzed and made available especially in a web-based format.

10. Providing more data training opportunities through the Office of Community Health Development, PHAN, and the Nebraska Educational Alliance for Public Health Impact.

The DHHS should develop public health data sharing activities by:

11. Designating a group, such as the DHHS Data Management Section, to be responsible for monitoring or keeping track of all public health data activities. This group could maintain communication with all DHHS programs collecting data as well as any university or independent research groups to ensure that there is no duplication of efforts and that all groups are aware of available data resources. The group should also be responsible for disseminating the data products to the appropriate individuals or organizations. This recommendation may require a reorganization of data specialists within DHHS.

12. Clarifying when HIPAA and FERPA (Family Education Rights Privacy Act) are barriers to data sharing and providing appropriate educational opportunities about these acts.

13. Reviewing current public health laws that affect data collection or sharing to determine if they need to be modified.

14. Developing a protocol for data sharing.

15. Sending representatives regularly to the National Association of Health Data Organizations (NAHDO) meetings and conferences and becoming more active in the Public Health Data Standards Consortium (PHDSC).*

The DHHS and partners should establish stable financing for a public health data system by:

16. Exploring additional funding opportunities such as increased alcohol and tobacco taxes to build the public health data infrastructure, including education and training, and expanding personnel with data expertise.

The DHHS and partners should maintain current databases and increase linkages among databases by:

17. Convening a group to generate a plan for developing an integrated data system that compiles health information in a standardized manner and allows electronic access by multiple-users for multiple purposes. This plan should identify the major components, timelines, and costs.

18. Encouraging local health departments to work in partnership with their local hospitals to encourage the collection of hospital discharge data for submission to the NHA.

Strategy I-B: Strengthening the Public Health Workforce

Strengthening the public health workforce is necessary to continue to build an effective public health infrastructure. The public health workforce consists of individuals who work in a variety of settings focused on population-based health. Public health workers are those responsible for providing the essential services of public health, regardless of their work setting.[30] This includes many different types of workers such as epidemiologists, health educators, public health nurses, and public health administrators. Because public health practitioners work in such varied settings, it is difficult to document the size, makeup, skills, and performance of the workforce. Some of the major concerns include: (1) inadequate number of workers; (2) future shortage of experienced workers because a large number of current workers are approaching retirement age, without enough replacements prepared; (3) workers insufficiently prepared for their jobs through education and training, relying more on experience and on-the-job trial and error; and (4) lack of workplace incentives that recognize and reward skill building and performance.[31]

The public health workforce in Nebraska generally lacks formal training in public health. However, many of the public health professionals who work at state and local health departments have acquired these skills through on-the-job training, workshops,

[30]Gebbie, K., Merrill, J., & Tilson, H.H. (2002). The public health workforce. *Health Affairs*, *21*(6), 57-67.
[31]Gebbie, K.M. & Turnock, B.J. (2006). The public health workforce, 2006: New challenges. *Health Affairs*, *25*(4), 923-933.

seminars, and experiential learning, and their capacity to perform the essential services of public health continues to grow.

Workforce Shortages and Retirement

There is a developing public health workforce shortage at the federal, state, and local levels. According to a 2006 public health workforce issue brief "the number of public health workers declined to 158 workers per 100,000 Americans in 2000, as compared to 220 workers per 100,000 Americans in 1980."[32] Low salaries, poor benefits and working conditions, and low status for the profession contribute to these shortages. To increase the number of public health workers, Nebraska's public health community needs to inform young people about opportunities in public health careers. The community should also explore new methods for recruitment and retention of public health workers.

The United States and Nebraska must confront the challenges related to an aging public health workforce, a significant number of whom will retire in the next five years. In Nebraska, approximately 52 percent of state level public health workers are age 50 and above, which indicates that the state will lose a large number of experienced workers in the next five to ten years.[33] As a result, it is necessary to begin to prepare replacements for these workers now.

Public Health Competencies

The Healthy People 2010 objectives for public health infrastructure include objectives for the public health workforce. The first objective related to workforce is to increase the proportion of federal, tribal, state, and local agencies that incorporate specific competencies in the essential public health services into personnel systems. The second is to increase the proportion of schools for public health workers that integrate into their curricula specific content to develop competencies in the essential public health services. The final objective related to workforce is to increase the proportion of federal, tribal, state, and local public health agencies that provide continuing education to develop competency in essential public health services for their employees.

In the IOM report, "The Future of the Public's Health in the 21st Century," it is recommended that the public health workforce have appropriate education and training to perform its role, which directly connects to the Healthy People 2010 objectives for

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[32]Perlino, C.M. (2006). *The public health workforce shortage: Left unchecked, will we be protected?* American Public Health Association, Washington, DC. Retrieved October 24, 2006, from http://www.apha.org/about/news/pressreleases/2006/06crisis.htm.

[33]Nebraska Department of Health and Human Services (January 3, 2007). *Employee age and ethnic profile for regulation and licensure*. Lincoln, NE.

workforce development and maintenance.[34] The current public health workforce has a wide variety of educational degrees, training, and experience, but little formal training in public health. This is true in Nebraska as well as nationwide. Currently, public health professionals are engaging in nationwide dialogue about developing a list of public health competencies, and even establishing a credentialing program for public health workers. The Council on Linkages between Academia and Practice (see Appendix A) has developed a list of core competencies for public health professionals.[35,36] These competencies can be used to help (a) those who provide training to develop and evaluate the content of their curricula, (b) public health workers assess and meet their training needs, and (c) employers assess knowledge and skill gaps of their employees or of their organizations. The use of competencies to evaluate the public health workforce should be used to develop a continuing education and training agenda, as well as the establishment of performance guidelines.

Establishing formal credentials for public health professions remains a controversy. The nature of the public health workforce (i.e., multidisciplinary) makes it challenging to create a credentialing system. Credentialing public health workers would have several benefits including: improving levels of competency, helping to maintain a qualified workforce, and assuring consumers and service providers that workers have met certain competencies. Those who support the credentialing effort claim that there is a need for qualified, trained public health professionals, and that the general public experiences difficulty judging the competency of public health workers. Those who oppose the effort assert that credentialing workers would lead to increased salary demands, which would increase the problem of financing the public health infrastructure. Organizations such as the National Association of City and County Health Officials (NACCHO) have voiced their concerns about the details of national credentialing such as "… (the) negative impacts on funding of local agencies and conflicts with local hiring processes, pay scales, and budget integrity; and maximize use of existing resources, processes and budgets…"[37] In all likelihood, it would also be difficult for many small rural health departments to recruit and retain credentialed public health workers, especially in the early years of the process.

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[34]Institute of Medicine (2003). *The future of the public's health in the 21st century*. Washington, DC: The National Academies Press.

[35]Tilson, H. & Berkowitz, B. (2006). The public health enterprise: Examining our twenty-first century policy challenges. *Health Affairs*, *25*(4), 900-910.

[36]Council on Linkages between Academia and Practice (2006, October 20). *Core competencies for public health professionals*. Retrieved May 18, 2007, from http://www.phf.org/competencies.htm

[37]National Association of County and City Health Officials (July 2004). *Resolution on workforce certification and credentialing*. Retrieved November 15, 2007, from http://www.naccho.org/advocacy/Resolutions/documents/04-07.pdf

Lack of Diversity in Public Health

Lack of diversity in the public health workforce is a major concern. For example, approximately 25 percent of the U.S. population is composed of minority groups, yet they only represent 10 percent of the health professions.[38] Increasing the number of racial and ethnic minority workers in the health professions may help reduce or eliminate health disparities and improve health promotion efforts by being better able to respond to the needs of underserved populations. The public health community needs to increase their efforts to recruit racial and ethnic minorities to public health.

Recommendations

1. Public health partners led by the Nebraska Educational Alliance for Public Health Impact (NEAPHI) should define the public health workforce and work with public health professionals to assure agreement and the general understanding of what public health is and what the qualifications of the public health workforce should be.

    a. PHAN, local, and state health departments should provide more consistent training for local and state boards of health. They should also provide boards with more opportunities to learn about public health in general and about current issues in public health. There should be an opportunity for the local and state boards of health to network.

    b. Local boards of health should complete the National Public Health Performance Standards governance assessment approximately every five years to identify the strengths and weaknesses of their boards. Board of health members should be encouraged to join the National Association of Local Boards of Health (NALBOH) and to participate in their governance and their conferences.

2. Public health partners including PHAN, DHHS, NEAPHI, the UNMC College of Public Health, federally qualified health centers, community health centers, and local health departments should complete a comprehensive public health workforce assessment to determine the composition and experience of the current workforce, and identify their training needs at least every three years.

    a. The partners should also monitor the progress of the CDC, the National Association of County and City Health Officials (NACCHO), NALBOH, ASTHO, and ASPH (Association of Schools of Public Health) on establishing public health competencies. Once recommendations are made, the partners should create a method of evaluating Nebraska's public health workforce based on the competencies.

[38]Institute of Medicine (2004). *In the nation's compelling interest: Ensuring diversity in the health care workforce*. Washington, DC: The National Academies Press.

b. Prior to the establishment of CDC recommended public health competencies, Nebraska's public health partners should examine current competency assessment tools and assess the current competencies of the public health workforce. The assessments should examine individual, staff, and department competencies.

3. The College of Public Health should continue to integrate a shared curriculum with other colleges at UNMC such as the MD-MPH degree and the College of Nursing community/public health nursing master's program. Health professions students should receive public health training in the form of at least one "fundamentals of public health" class.

    a. The College of Public Health, NEAPHI, and other partners should establish a non-credit and a credit certificate of competency in public health. The certificate should have a requirement of 100 hours of training with a minimum of 30 hours in each core function of public health. The training should relate to the core functions, the ten essential public health services, and the public health performance standards. It should be accessible by distance learning methods whenever possible.

    b. Nebraska colleges should explore the establishment of additional undergraduate courses in public health to increase the exposure of undergraduates to opportunities in public health. Currently there are courses in public health education at the University of Nebraska at Omaha, the University of Nebraska at Kearney, and Chadron State College, but there is a need for undergraduate courses in population health in other public health disciplines.

4. Area Health Education Centers (AHEC) and other entities that provide continuing education should provide more opportunities to health providers and allied health professionals to receive continuing education credits that are related to public health.

    a. The public health community should partner more with AHECs to recruit, educate, and mentor young people about public health careers. The groups should develop more awareness of public health workforce options.

5. Public health partners should create public health training programs to reach all health professionals including statisticians, boards of health, and nurses. The trainings should have a number of formats including a seminar or webinar in public health, or a half day orientation.

    a. Nebraska local health departments should regularly evaluate their entire organization based on public health competencies. This will help identify gaps in

capacity to address the core functions of public health and help focus public health training needs statewide.

b. Public health partners should establish a governing body such as NEAPHI to ensure that public health trainings are consistent, the learning objectives met, and that training is rigorous. This would also help regulate the number of public health trainings offered to health department employees, ensuring they get the most critical and timely trainings. It would help to avoid duplication and eliminate major gaps as well.

c. Public health partners should explore the possibility of implementing a statewide voluntary accreditation program for local health departments to ensure credibility and standardization. This program should link to public health trainings and future credentialing efforts.

6. Public health partners should provide more opportunities for health professions students to obtain public health experience. Partnerships should be established between AHECs, Student/Resident Experiences and Rotations in Community Health (SEARCH), and local health departments to design meaningful projects for students. Opportunities should also be offered at the state level.

7. Partnerships between PHAN, the NMA, the NHA, the Nebraska Nurses Association, the Nebraska Pharmacists Association, Nebraska Veterinary Medical Association and others should be strengthened and should be used to help promote public health among other health professionals.

8. Public health partners should work to increase the number of racial and ethnic minorities in health professions. One strategy is to include public health students in the rural health loan repayment programs and recruit minority students to these programs. Additionally, when students are recruited to the College of Public Health, a certain portion of the available scholarships should be awarded to under-represented racial and ethnic groups. The public health community could also target youth programs such as Upward Bound to educate young people about public health professions.

   a. Public health partners such as the Nebraska Minority Public Health Association should also help the current workforce understand diversity through cultural competency and health disparity training.

9. School health educators in Nebraska should be required to have a certification in health education. The College of Public Health and other partners should join with current university and college programs that certify school health educators to promote the hiring of certified school health educators and to discourage the teaching of health by non-certified teachers.

a. Schools should establish School Health Advisory Councils, as are required by law in some states, to give advice on issues related to school health, including curriculum, workforce training and development and other school health programs.[39] School administrators should be required to take at least one course in health education programs to better enable them to respond to the health needs of their students through the establishment of organizational policies.

b. There is currently a movement to require all undergraduate students in American colleges and universities to take one course in public health. "The new movement is rooted in a 2003 Institute of Medicine report, 'Who Will Keep the Public Healthy?' which recommended that all undergraduate students should have access to education in public health."[40] Nebraska institutions of higher education may wish to investigate joining this movement.

10. Public health agencies, especially state and local government, should establish an organized set of strategies to improve recruitment, retention, and advancement of public health workers. The public health workforce needs to receive competitive compensation and should have the opportunity to advance their careers through the establishment of career ladders.

11. To improve the recruitment and retention of the public health workforce, public health officials and their partners should work to develop and enact the passage of federal public health workforce legislation.

[39]NC Healthy Schools (October 2003). *Effective school health advisory councils: Moving from policy to action*. Retrieved November 19, 2007, from http://www.nchealthyschools.org/docs/advisorycouncilmanual.pdf

[40]New initiative to bring public health education to undergrads: Every student can learn from public health. (2007, November). *The Nation's Health*, p. 15.

Strategy II: Enhance the Credibility and Visibility of Public Health by Demonstrating the Value of Public Health to Policymakers and the General Public

Local and state public health departments are responsible for improving the health of the population by providing the three core functions and the ten essential services. Although the activities and programs provided by these departments have helped thousands of people live healthier lives, it is difficult to measure the full impact of them. As a result, national, state, and local health officials have been experimenting with different models to assess the performance of state and local health departments in providing the ten essential services. In addition to documenting the effectiveness of health departments, performance measures can also be used to educate the general public about what health departments should be doing and how well they are doing. This information should also help local and state policymakers determine the value of health departments and make better policy and resources decisions.

Lack of Uniform Standards

In the 1990s, a few states began developing performance standards to assess the effectiveness of local health departments. In 2002, the CDC and six other national public health organizations developed the National Public Health Performance Standards Program with standards that can be applied to the state health agencies, local public health departments, and local boards of health.

> The program consists of three assessment tools: (1) the State Public Health System Assessment, (2) the Local Public Health System Assessment, and (3) the Local Public Health Governance Assessment for local governing bodies. Based on the ten essential services of public health, the instruments question participants on their combined ability to provide pubic health services.[41] Responses are sent to the CDC which provides a report with performance scores and tips for using the assessment results to make improvements in the public health system. "More than 20 states, 800 local health systems and hundreds of local boards of health have conducted assessments using the standards program, leading to strengthened partnerships, new lines of communication, and most importantly, health improvements."[42] In Nebraska, DHHS has used the state instrument and as many as thirteen local health departments have applied the local instrument. At least five of the boards of health in Nebraska have fully used the governance instrument.

[41]New, improved tools to aid assessments of health systems. (2007, October). *The Nation's Health*, p. 5.
[42]Ibid.

In order to reach a consensus on an assessment model and the issue of accreditation, two projects were initiated in 2005. One project that was funded by the Robert Wood Johnson Foundation focused on establishing a Multistate Learning Collaborative of five states that are implementing innovative public health agency performance assessments or accreditation programs. One of the key objectives of the project was to synthesize and disseminate information to local and state public health agencies and other key partners in developing systematic public health agency performance assessment or accreditation programs. The ten states involved in this project are: Florida, Illinois, Kansas, Michigan, Minnesota, Missouri, New Hampshire, North Carolina, Ohio, and Washington.[43] Results showed that participating in the project provided the means for the states to share and learn information, and solve problems together.[44] Participants advise other states interested in accreditation to engage a stakeholder group from the beginning and to understand that accreditation is an ongoing process.

A second related project was known as the Exploring Accreditation Project. This project was funded by the CDC and the Robert Wood Johnson Foundation and was jointly staffed by the National Association of County and City Health Officials (NACCHO) and the Association of State and Territorial Health Officials (ASTHO). The purpose of this project was to explore the implications and feasibility of a voluntary national public health accreditation system. At this point, a model framework has been developed. The model program is designed to:

- Clarify the public's expectations of health departments
- Recognize high performers that meet nationally accepted standards of quality and improvement, and
- Increase the visibility and public awareness of governmental public health, leading to a greater public trust, increase health department credibility, and ultimately a stronger constituency

The goal of a voluntary national accreditation project is to improve and protect the health of the public by enhancing the quality and performance of state and local health departments.[45] "The board's ultimate goal is to accredit all of the nation's public health agencies, including state and territorial health departments, tribal health agencies as well as the country's 3,000 local health departments."[46]

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[43]Beitsch, L.M., Thielen, L., Mays, G., Brewer, R.A., Kimbrell, J., Chang, C. *et al.* (2006). The multistate learning collaborative, states as laboratories: Informing the national public health accreditation dialogue. *Journal of Public Health Management and Practice*, *12*(3), 218-231

[44]Brewer, R.A., Joly, B., Mason, M., Tews, D., & Thielen, L. (2007). Lessons learned from the Multistate Learning Collaborative. *Journal of Public Health Management and Practice*, *13*(4), 388-394.

[45]APHA, ASTHO, NALBOH, NACCHO (Winter 2006-2007). *Final recommendations for a voluntary national accreditation program for state and local public health departments*. Retrieved March 2007, from http://www.rwjf.org/pr/product.jsp?id=1859

[46]Work on accreditation of health departments moving forward. (2007, October). *The Nation's Health*, p. 5.

At this point, it appears that the performance standards and the appropriate measures to determine if the standards have been met will focus on the outcomes that can reasonably be influenced by local and state health departments. It appears that NACCHO's operational definition of a functional local health department will serve as the foundation for the local health department standards (see Appendix B for a list of the standards). However, state standards and the associated measures to determine whether a standard has been met have not yet been developed for either local or state health departments.[47]

In summary, there is considerable interest among local, state, and national public health officials to move toward a voluntary national accreditation program. Although it is difficult to predict the timing, it appears that national standards and measures will be adopted within the next two or three years.

Current Status in Nebraska

Currently, there is interest in Nebraska among local and state health officials in assessing the performance of local and state health departments. For example, PHAN is interested in coordinating the development of operating standards for local health departments. As previously mentioned, the state agency and several local health departments have already applied the National Public Health Performance Standards.

As Nebraska considers its options, the following key questions should be addressed:

1. Should Nebraska develop its own standards or wait for national standards and measures to be developed?
2. If state standards are developed, what assurances do we have that they will blend into the national standards?
3. How long will it take to reach a consensus on the national standards and measures?
4. If Nebraska develops its own standards and measures, what process will be used to select them? Is a new independent organizational entity needed to oversee the application of the process?
5. Will the application of the state standards be voluntary or mandatory?
6. Will the state standards focus on the areas local and state health departments can reasonably influence or the public health system as a whole?
7. Will the standards be the same for large and small local health departments?
8. Should a state model focus on agency performance and capacity assessment or accreditation?

[47]APHA, ASTHO, NALBOH, NACCHO (Winter 2006-2007). *Final recommendations for a voluntary national accreditation program for state and local public health departments*. Retrieved March 2007, from http://www.rwjf.org/pr/product.jsp?id=1859.

Although these and other questions need to be addressed, it seems very clear that public health officials in Nebraska must begin to assess the possible options and begin to move forward in a more systematic fashion. To this end, a task force on public health standards and accreditation should be established to help chart the future of public health in Nebraska.

Improving the Visibility of Public Health

The application of public health performance standards provides a mechanism to improve the understanding and visibility of public health. By sharing the results of performance measures, both policymakers and the general public can understand more clearly the major activities and functions of local and state health departments. The results can also provide essential information for policymakers about which programs and activities should receive additional support.

There are major challenges to increasing the visibility of public health because the work of public health professionals is too often unknown and invisible. As a result, public health activities are largely unappreciated and often taken for granted. Public health professionals tend to play the roles of stagehand, scriptwriter, lighting crew, and director without whom the show would fail rather than taking center stage as the main actors. Many activities are fundamental to securing everyone's overall well being. However, public health functions often lack the dramatic immediacy and intensity of medical interventions. The life and death concerns of public health focus more on monitoring significant long-term trends rather than responding to the sudden threat of disease to an individual. With the exception of the response to outbreaks of infectious diseases, public health is rarely in the news or on people's minds.

And yet it is the ongoing accumulation of public health epidemiological information that contributes inevitably to changes that save many, many lives and prevent much suffering. It is the persistent vigilance and care of public health inspectors who organize and oversee immunization programs, ensure the safety of the foods we eat, the air we breathe, and the water we drink. It is the outreach of public health professionals addressing the unmet needs of vulnerable communities that ultimately benefits society as a whole. It is our health education messages that save health dollars by promoting healthy behaviors and increasing the use of early screening for preventable life threatening conditions like hypertension, breast cancer, and cholesterol. It is the continual dialogue between communities and public health professionals that mobilizes concerned action and creates lasting changes.

Another major challenge to public recognition of the field's contribution to everyone's health is that public health interventions tend to be difficult to do. For instance, many health education messages call for lifestyle changes (e.g., smoking cessation, dieting, regular physical activity, and abstinence from drugs) that require the hard work of breaking familiar habits and stepping away from comfortable patterns of activity and

relationships. The results of these changes are rarely instant nor do they carry a certain guarantee of protection from eventual injury, illness, or death. Moreover, the impact of health education messages is often muted because the recommended changes in individual habits are linked to the need for social changes (e.g., eradicating poverty, eliminating racism; increasing education; combating the well funded advertising initiatives of tobacco, alcohol and high sugar and fatty foods; improving literacy levels; enhancing access to health care; and improving environmental health conditions). Far-reaching impact on health will require addressing the social and environmental conditions that give rise to and sustain disease or risk-behaviors.

Recommendations

1. Based on a review of performance standards that have already been developed in other states and at the national level, state and local health officials as well as representatives from the UNMC College of Public Health and other parties in Nebraska should identify appropriate standards and measures that can be applied to local health departments and the state health agency. These standards should be developed by March of 2009 and applied by March of 2010.

2. State and local health officials should work with the media and various constituencies and stakeholders to improve the visibility of public health. These strategies should include:

    a. Tailor the content of public health messages so that they are relevant to the concerns of specific audiences. The most effective messages are those that fit with and build upon audiences' priorities and goals. Messages must communicate to specific audiences how public health activities respond to their concerns; meet a perceived need(s); support what they also want to see happen; and demonstrably bring about some meaningful advantage they value.

    > *Example: In North Omaha, there have been concerns about the high lead levels found in many children. Public health personnel from the Douglas County Health Department have worked with other concerned citizens and agency representatives to provide the community with information about lead poisoning and its prevention, assistance in interpreting test results, and provision of referrals for follow-through and monitoring services. Their response, in cooperation with the EPA Superfund site initiative, was timely and the informational messages matched many of the needs of the community.*

    b. Match the style and tone of public health messages with what specific audiences find appropriate. It is often most effective to mix quantitative data with qualitative stories. Either way, there needs to be some degree of emotional pull to the message in order for someone to be motivated to listen to its content.

Example: Some people in an audience will be moved when they identify personally with a descriptive portrait of someone, a personal testimonial, a life story, or dramatic replay of a public health intervention (e.g., the story of a teenager who has died in an alcohol related car crash with the information that so-called "accidents" are often predictable and preventable). Other people are more influenced by numbers that describe the parameters, nature, and extent of an issue. For this audience, public health professionals need to document a problem with measures that highlight the statistical impact of public health interventions.

c. Involve members of the audiences that we are trying to reach in planning and developing public health messages. There is a saying in public health that is appropriate here: "Nothing about us, without us." The people who are targeted or who are at-risk should always have a say about the types of programs they want and need.

d. Provide community groups with the skills to collect and communicate their own story in their own words as opposed to centralizing all media messages. Efforts that engage community residents and organizations in public health campaigns can make a substantial difference in a community's ability to recognize and solve problems, as well as strengthen the individual's sense of community. It is important, however, to be sure that a consistent message is conveyed.

e. Ensure that all public health messages recognize and are sensitive to the cultural differences of diverse audiences. Because each racial and ethnic minority group has a unique set of health characteristics and issues, it is critical to involve minority consumers and providers in planning and developing the message. But diversity is more than racial and ethnic diversity. It also includes rural, suburban and urban diversity, economic diversity and age and gender diversity.

f. Piggyback on national stories and promotional campaigns. By building on national stories and applying them to a state or local story, it is possible to generate interest and present a strong message to the public.

Example 1: When mercury became a national issue due to its toxicity, the state and local agencies organized "mercury roundups" throughout the state.

Example 2: Mobilize appropriate partnerships for promoting National Public Health Week (the first full week in April).

g. Establish working relationships with media professionals to set the agenda (i.e., shaping the story to get the attention of journalists), shaping the debate (i.e., telling the story the way you want it told), and advancing the policy. In shaping the debate, it is important to translate what are commonly seen as individual problems (e.g., alcoholism) to social or public policy issues (e.g., promotion and

availability of alcohol). In this way, the focus shifts from an individual problem to the environment through which alcohol is made available.

> *Example 1: The Orchard Hill Neighborhood Association in Omaha, with the support of some health coalitions, was concerned about the crime associated with a store in their neighborhood. When the owners of the store applied for a license to sell package liquor at a nearby store that they owned, the community was outraged. Despite the concerns of the community, the Nebraska Liquor Control Commission (LCC) approved the license. The Association filed a lawsuit against the LCC and won. This set a new precedent for valuing the concerns the community regarding local health and safety concerns.*
>
> *Example 2: Project Extra Mile and other coalitions worked together to help pass a law that took effect in January 2008. This law makes parents and other hosts financially responsible for the death and destruction resulting from underage drinking that took place at their home or on their property, including damage caused by their children's friends or acquaintances who were drinking in their home or on their property. Bars and liquor stores that serve alcohol to minors, as well as adults who provide alcohol to minors, may also be held financially responsible for damages caused by underage drinking.*

3. Strengthen the capacity and commitment of PHAN, DHHS, and local health departments to continue their efforts to build strong bases of mutual support among community members, professional colleagues and associations, businesses, nonprofit agencies, and government.

> *Example: Resources are needed to offer conference workshops and sponsor continuing education opportunities for public health professionals in skill-building on media relations, coalition building, and community organizing. Specific personnel trained in public relations, social marketing and policy advocacy are needed to forward public health perspectives, program initiatives, and policy changes.*

   a. Work with existing coalitions to articulate clearly the contribution from public health via a shared agenda for action.

> *Example: In the past few years, the tobacco control coalitions in Nebraska have been extremely effective in creating a shift in public opinion and mobilizing the necessary resources and forces to change public policies. One result has been the implementation of smoking bans in Lincoln, Omaha, and Ralston.*

   b. Build new coalitions within and between local communities, regions, and the state to generate more widespread support for public health activities. Public health professionals can assist with the identification of shared concerns and facilitate communication among partners. These coalitions should include people and institutions that can increase the likelihood of accomplishing the goals of the

coalition, lend credibility and legitimacy to the coalition, and recruit new coalition members to expand the coalition's influence.

c. Coalitions should establish long- and short-term goals. Once their goals are established, it is important for coalitions to identify the objectives and activities that need to be completed to accomplish the goals.

> *Example: Long-term goals might include ensuring the sustainability of the aquifer, reducing pesticide exposure and nitrogen run off from agriculture, reducing infant mortality, reducing motor vehicle crashes, reducing alcohol consumption, and improving vaccination rates. Short-term goals could include such things as the introduction and eventual passage of public health legislation, planning and holding a health fair, conducting a health education media campaign, and/or completing a community-based needs assessment.*

d. Coalitions should focus on positive actions and visible, realistic accomplishments. Coalitions are perpetuated when they have an ongoing sense that they are accomplishing something meaningful. With the combined efforts of the coalition, it should be possible to achieve positive results within a specified and relatively short-term time frame. Small victories lead to bigger ones. For coalition members to feel a sense of commitment to the coalition's goal(s), they will need to perceive some gain from its accomplishment. Also, the task(s) each member takes on to accomplish the overall goal(s) should be relatively equal to those of others who are in the coalition. And each member should feel that his/her expertise is matched with the particular task they are doing. There should be adequate institutional support for the individual work and meeting times that are needed to complete the goal(s). Meetings should be focused, organized, yet flexible, and allow for some socializing and fun. The completion of the coalition's activity(ies) should be publicly celebrated and each member should feel acknowledged and appreciated for their contribution. By definition, the successes of coalitions are group goals and accomplishments, not individual goals and accomplishments.

e. Identify potential centers of resistance to public health activities and begin to build bridges where possible. At best this can lead eventually to closer working relationships. At the very least, coalitions will know better how to address the arguments, restraints, or obstacles that may be present when it comes time to secure support for public health activities.

Example: Such resistance may come from people and institutions who perceive that public health activities threaten their livelihoods, basis of expertise and influence, status and prestige, or traditional beliefs and practices. In addition, some may have felt betrayed or disappointed by public health professionals and thus, distrust the dependability of our field to address their concerns in an honest, effective, and timely manner. For many years, the restaurant associations and the Keno industry in Nebraska were against smoking bans. Through open dialogues and the presentation of solid data, these entities now support smoking bans.

4. Public health professionals need to be firmly aware of and be able to articulate the philosophical, ethical, and practical rationales for the public health field. To do so will help to underscore the basis of commitment to public service and help shape public health priorities. Furthermore, such knowledge will be helpful in countering arguments from those who do not support public health activities. Some areas for consideration might include:

    - Justifications for population-based health interventions including the principles of:
        - *Enlightened self-interest*: a philosophy in ethics which states that persons who act to further the interests of others (or the interests of groups to which they belong), ultimately serve their own self interest
        - *Distributive justice*: concerns what is just or right with respect to the allocation of goods in society
    - Justifications for and impediments to addressing the determinants of health (social, economic, and environmental)
    - Constitutional and practical reasons for governmental oversight and involvement in public health activities
    - Opportunities and limitations for health interventions based on concepts of personal and shared responsibility for health risks and outcomes
    - The value of planned development
    - Justifications for and the drawbacks of prioritizing the health needs of vulnerable and underserved groups
    - The significance and limitations of confidentiality in public health interventions

5. Organize a Public Health Promotion Task Force

    a. The Public Health Promotion Task Force should be a coordinating body made up of a highly diverse group of representatives from DHHS and local public health departments, community action agencies, hospitals, regionally diverse communities, the media, and any appropriate health-related group. Ideally, it would have representation from the State Legislature, the Governor's Office, and the Nebraska Association of County Officials.

b. The task force would be staffed by an expert in public relations, community outreach, and policymaking. The task force, staff person, and budget could be located within the Office of Community Health Development or PHAN.

c. The purpose of the task force would be to support public health constituencies to build their promotional capacity. The task force would be charged with accomplishing the following activities:

- Develop and enhance communication channels between public health professionals and community members, policymakers, media professionals, and other health care professionals.
- Coordinate information flow among constituencies for support for public health.
- Encourage joint activities and resource-sharing among public health coalitions to influence the passage of public health policy changes and/or increase the effectiveness of their promotional and outreach initiatives.
- Coordinate the formulation, dissemination, and implementation of long-range public health goals and priorities for the state.
- Assist local public health coalitions, when requested, with establishing and implementing localized long-range goals and priorities and short-term activities.
- Provide training, technical assistance, and expertise to public health coalitions, when requested, on how to increase the visibility and impact of their initiatives.
- Sponsor a yearly, statewide public health promotional campaign through the media such as the themes for National Public Health Week.
- Link public health coalitions with national resources (technical assistance, data, media campaigns, policy trends, and funding opportunities).
- Publish and update a statewide directory of public health agencies, professional groups, coalitions, supporters, and resources.
- Develop a web page to enhance communication and resource sharing among public health coalitions.
- Coordinate and facilitate the completion of policy-relevant research.

Strategy III: Strengthen the Capacity of the Public Health System to Address the Impact of Environmental Issues

The good life in Nebraska is faced with environmental challenges for the 21st century. Environmental health (EH) encompasses a broad array of determinants that affect health and illness. The practice of environmental health uses prevention as well as risk management as they are applied to environmental problems. The inescapable truth is that because everything is connected, everyone is affected in some way by exposures to environmental hazards associated with daily living.

According to the World Health Organization:

> Environmental health comprises those aspects of human health, including quality of life, that are determined by physical, chemical, biological, social, and psychosocial factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations.

Environmental health topics relevant to Nebraskans include efficient use of energy, water, and other materials, expansion of conservation and recycling, environmental protection, hazardous waste, land use, pesticides and herbicides, pollution, solid waste, water resources, wetlands, and environmental justice. Nebraska is well positioned to benefit from the use of alternative fuels. New ethanol plants are being built across the state, but the future of ethanol production is uncertain because of the amount of irrigation water, pesticides and energy needed to grow corn. Water rights and usage will continue to be high priorities for our state. Another aspect of environmental health is energy use and conservation, sustainability and community planning. One concept is known as Smart Growth where time, attention, and resources are invested in restoring community and vitality to city centers and old suburbs, instead of creating urban sprawl. Even if communities are not growing they can apply the principles of Smart Growth (www.smartgrowth.org).

All individuals have the responsibility to become informed and active participants in the stewardship of the earth if we want to continue to live, play, and work in a safe and healthy environment. Meeting the essential environmental health services to inform, educate, and empower Nebraskans about environmental health will become even more important as local health departments mobilize community partnerships and work with state and federal agencies to identify and solve environmental health problems.

There are those who believe that if we as a society do not change some of our practices and behaviors, that within a few decades the world will be unable to sustain life as it is today. Nebraskans need to examine their vision of what constitutes truly

healthy, livable, sustainable, and vital communities. Part of that vision is to identify environmental responsibilities for the judicious use of finite resources for our communities and our neighboring states.

Need for Environmental Health Action in Nebraska

Since 2003, local public health departments have covered every county in Nebraska. The 16 newly formed, multicounty health departments are expected to perform the core functions of assessment, policy development, and assurance by building partnerships that would collectively address community health problems. All health departments, local and state agencies, and their partners such as the Department of Environmental Quality (DEQ), the Environmental Protection Agency (EPA), and the Department of Agriculture, are committed to maintaining and improving environmental quality in an effort to meet the official goal of the U.S. government as stated in Healthy People 2010 –"Promotes health for all through a healthy environment." In addition, local health departments are working in partnership with state agencies to address Nebraska Healthy People 2010 objectives related to environmental health including: air and water quality; contaminants in our soil; healthy homes and schools; and accidents and injuries. Some of the new health departments, however, have inadequate capacity to address EH issues.

In 2006, the environmental health capacity in Nebraska's 16 new health departments was assessed as part of an Environmental Health Leadership Project. Ten of 16 health directors responded to an electronic survey about EH capacity in their health departments. The EH areas most cited as needing to be addressed by the new health departments were: animals; air; water; and litter, junked cars, and roadside debris. Health directors indicated that the EH complaints were primarily handled by the departments with five directors indicating they had used state agencies as well. The number of EH issues each department had addressed since 2005 ranged from five to 2,000. The number of employees and their job titles around EH listed in total for the 10 new health departments included; two public health nurses, two wellness coordinators, one EH specialist, one EH coordinator, one laboratory scientist, one epidemiologist, two emergency response coordinators and one assistant executive director for a total of 11 personnel, excluding the directors, who serve in 10 multicounty health departments. The needs identified for EH in the new departments were in the areas of training, personnel, and funding.[48]

Telephone interviews with key personnel in state agencies involved in EH indicated that state agencies had little contact with the new health departments and the state agencies were quite limited in what they could offer in terms of resources. One

[48]Wilken, M. (2007). *Building environmental health capacity in new health departments*. Final project report completed for requirements for the Environmental Public Health Leadership Institute Project. Retrieved from http://www.heartlandcenters.slu.edu/ephli/finalProjects.htm

individual stated that “the inspection and regulatory side of EH and public health was not included in the discussion when the new health departments were formed.” Another indicated that the state has no regulatory responsibility to local health departments, with most state authority delegated to county attorneys.[49]

EH action needs include: local rules and ordinances to address environmental issues; trained environmental health professionals; educated board of health members with regard to their roles and responsibilities in environmental health; state involvement and partnerships; and resources in general.[50]

Current Resources

Organizers at an Institute of Medicine (IOM) workshop posited that only by thinking about environmental health on multiple levels will it be possible to merge various strategies to protect both our environment and our health. An expanded and enhanced vision of Nebraska’s EH depends upon the responsible leadership of policymakers, health professionals, members of industry, business and agriculture, and the general public.[51] The CDC has published various strategies to revitalize EH services which include building environmental health capacity, supporting research, fostering leadership, improving communication and marketing, developing the workforce, and creating strategic partnerships. State and local health departments need to continue collaborative efforts that encompass a variety of strategies to engage community members at the local level. Engagement of the community will strengthen their awareness of environmental issues and help build a stronger constituent base for the planning and implementation of policies and programs that address EH services and issues.

In 2006, four planning sessions were held between the Division of Public Health and local health directors. During the sessions, the group discussed issues related to training needs, of sharing staff (including EH professionals), and the difficulty health directors were having in accessing legal advice or consultations from county attorneys who were unwilling to help them. At the final session, a work team was formed to work on transferring some responsibility for environmental assurance from the state agency to local health departments. This collaboration has continued with state agencies and local health departments addressing problem solving together.

The PHAN website has posted a “template” resolution for nuisance regulation which could address many public health threats from falling limbs to loose dogs to uncovered garbage and odors. Unfortunately, in most of the rural communities, the county

[49]Ibid.
[50]Ibid.
[51]Lee, C. (2002). Environmental justice: Building a unified vision of health and the environment. *Environmental Health Perspectives*, *110*(S2), 141-144

commissioners/supervisors are reluctant to pass such an ordinance/resolution primarily because there is no one and no funding to support it. The PHAN strategic plan for 2007-2009 included community engagement, stakeholder identification, and educational resources for public health and environmental health as one of three priorities over the next two years. Educational resources, in addition to the new College of Public Health, include community, state and tribal colleges, AHECs, and high schools.

Challenges and Barriers

Efforts to expand environmental health capacity throughout the state must be holistic, bottom-up, community-based, multiuse, crosscutting, interdependent, integrative, and unifying.[52] The PEW Environmental Health Commission Report identified many of the same gaps that our health departments are facing.[53] The report indicated a need for a skilled public health workforce. Nebraska's new College of Public Health is a strong start towards building the workforce, but strategies and incentives need to be in place so that EH graduates will stay and work in our health departments. In the meantime, the state and local health departments need to continue to explore strategies for sharing environmental health professional services among health departments so that the essential service to diagnose and investigate environmental health problems and health hazards in the community can be addressed.

The essential service of enforcement of laws and regulations is basic to protecting the public's health and gaining their trust. More resources are needed so that the new health departments can provide this essential service. One resource that is available is the PHAN website. In addition, local boards of health, which include county commissioners/supervisors as members, need education on their roles and responsibilities related to environmental health. Work continues in this area with the PHAN section of the State Association of Local Boards of Heath.[54] Along with enforcement, communities expect public health agencies to gather information in a way that protects citizen's privacy while respecting the public's right to know about hazards, exposure levels, and health outcomes in their communities. The Pew Commission established a set of principles for Protecting Privacy and Confidentiality and Our Environmental Health Right-to-Know. This document can serve to as a guide for policy development and assurance.

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[52]Ibid.

[53]The Pew Environmental Health Commission (2002). *America's environmental health gap: Why the country needs a nationwide health tracking network*. Retrieved March 5, 2007, from http://healthyamericans.org/reports/pew/.

[54]Wilken, M. (2007). *Building environmental health capacity in new health departments*. Final project report completed for requirements for the Environmental Public Health Leadership Institute Project. Retrieved from http://www.heartlandcenters.slu.edu/ephli/finalProjects.htm

A comprehensive and systematic approach that includes EH tracking should be used to provide information about community health status and environmental exposure. Environmental public health surveillance is crucial for policymakers and public health practitioners to establish sound environmental health priorities. Data systems require trained health professionals to collect and interpret the data at the local and state levels and to respond to concerns. Information and data systems need to work together to track what and where the EH hazards are in the environment, whether people are at risk from exposure to these hazards, and the health of the community. Three types of health tracking for adverse environmental health threats include hazard, exposure, and outcome. Hazard tracking identifies potential hazards and examines their distribution and trends. Exposure tracking addresses whether harmful levels of pollutants exist in the community and ideally helps to evaluate effectiveness of public health policies. Resources that are available to track exposures include: the Behavioral Risk Factor Surveillance System (BRFSS), the Cancer Registry, Nebraska Department of Roads, Nebraska Hospital Information System (NHIS), and the Nebraska DEQ. These resources, in addition to many others, can be used for health outcome tracking to examine environmental and population exposures associated with hazards, disease, and injury.

In addition, the PEW Environmental Health Commission Report offers other recommendations which include: public health investigative response and tracking links to communities and research; an environmental health investigator in every state; working with NACCHO to develop leadership capacity at the local level; using an environmental health report card developed by the CDC and EPA; and developing minimum standards for environmental tracking. The state must continue to work on these areas if we are to meet the essential environmental health services of assuring a competent workforce and evaluating the effectiveness, accessibility, and quality of personal and population based environmental health services.

Conclusion

A fitting summary of what needs to be considered in Nebraska's environmental health strategic plan is provided from excerpts in two different keynote presentations by Larry Gordon, a nationally recognized environmental health expert.[55,56] He wrote:

> Environmental health is a profoundly complex, multifaceted, multidisciplinary and interdisciplinary field of practice engaged in by a wide spectrum of disciplines

[55]Gordon, L. (2001, August 2). *A vision for environmental health*. Keynote presentation given at the Association of Schools of Public Health Conference, Sustaining the Environmental Health, Washington, DC. Retrieved March 5, 2007, from http://www.ncleha.org/larrygordon/default.asp
[56]Gordon, L. (2003). *Blessed are those who expect little, for they shall not be disappointed*. Keynote presentation given at the Oregon Environmental Health Association. Retrieved March 5, 2007, from http://www.ncleha.org/larrygordon/default.asp

and professions within a wide variety of public and private organizations. Environmental health professionals need to envision communities in which environmental health:

- services contribute substantially to preventing disease and disability as well as reducing health care costs;
- is considered an important entitlement for the common good;
- problems are measured and defined **prior** to designing and implementing control measures;
- efforts are based on sound risk assessment and epidemiology, as well as the primacy of prevention;
- ecological considerations are understood to be components of environmental health;
- citizens understand that a quality environment is an important factor in economic vitality and productivity;
- outcomes contribute to minimizing social problems.

Recommendations

The following recommendations provide a broad range of strategic interventions to improve and support environmental public health services at the state and local levels. Enhancing environmental public health services will require strong working relationships with policymaking groups, boards of health, land use planning groups, Natural Resource Districts (NRD), the media, schools, institutions of higher education and other state and local environmental organizations.

The Nebraska Department of Health and Human Services, state partners, and local health departments should work together to strengthen their environmental health infrastructure by implementing the following recommendations:

1. The partners should develop environmental health education programs to promote a competent and effective environmental public health workforce. The College of Public Health, DHHS, local universities and colleges, and other partners should work together to develop programs and suitable field experiences, including online Public Health Foundation courses (www.phf.org/phworkforce.htm).

2. The DHHS Drinking Water Program should continue to make community-specific drinking water monitoring data available on the DHHS website.

3. In cooperation with the University of Nebraska Cooperative Extension Offices and the NRDs, private well testing must continue to be encouraged. Local health departments should be responsible for spreading the message about the importance of periodically testing private well water and promote and clarify how community members can access this service.

4. The DHHS should coordinate with local health departments and other stakeholders to develop technical expertise to educate people about emerging issues, and to inform the public about how adverse risks may affect individual communities and what potential prevention and intervention measures are appropriate. The partners should use available data to develop educational workshops focusing on health hazards in the following categories: air contaminants, water pollution, food safety, sustainability, environmental planning, and soil quality/waste management.

5. The DHHS and local health departments should conduct periodic environmental health assessments to learn what their primary challenges are and to understand the primary health concerns of citizens in their communities. There should be a statewide standard for collecting data so comparisons can be made locally, regionally, or by the State as a whole. An assessment tool such as the Protocol for Assessing Community Excellence in Environmental Health (PACE EH) or Mobilizing for Action through Planning and Partnerships (MAPP) is recommended.

    a. The Department of Education should encourage schools to consult Healthy School Environment Publications to assess school environments, and make any necessary changes where children's health might be compromised (http://yosemite.epa.gov/ochp/ochpweb.nsf/content/hsepubs.htm).

    b. The state partners and local health departments should set environmental health goals and best practice guidelines that are based on reliable sources of data and research. An evaluation of best practices and gaps related to laws, ordinances, and regulations should be a part of the goal setting process.

6. The DHHS, DEQ, the Department of Agriculture, and local health departments should coordinate their programs and activities to assure that environmental public health programs are available statewide, including programs that affect children and vulnerable populations. The capacity and capability of local health departments should be strengthened so that as many programs as possible can be provided at the local level.

    a. The Nebraska DEQ and the Department of Agriculture should develop collaborative efforts, which may include sharing and delegating appropriate program responsibilities such as food safety and onsite waste water, with the local health departments.

    b. The state partners and local health departments should develop requirements for obtaining food handler's permits for local food projects (e.g., soup suppers and pancake feeds). There should be a consistent standard across the state.

7. Environmental public health issues should be an important component of all land use planning. For example, differences in neighborhood physical environment are

related to levels of physical activity. In neighborhoods with more places and safety measures for physical activity, such as parks, good sidewalks, and crosswalks, people are more than twice as likely to be active.

The Nebraska local health departments should develop their capacity to address environmental concerns by focusing on the following recommendations:

8. Local health departments should collaborate with appropriate partners to protect and promote health and safety where people live, work, learn and play, especially for those at greater risk of health disparities.

9. Local health departments should collaborate with appropriate partners to reduce public health risks due to environmental hazards such as mold and vector borne illness.

10. Local health departments should develop the capacity to address natural and man-made emergencies by keeping their plans updated, conducting periodic tabletop exercises, and building relationships with other community responders.

11. Local health departments should have the capacity to address environmental health issues by having access to environmental health consultants or their own credentialed environmental specialist.

12. Local health department environmental health staff should have a broad understanding of air quality in order to respond to issues like harmful pollutants, alternative modes of transportation, cleaner alternative fuels, and airborne toxins.

    a. Each local health department should identify and address both indoor and outdoor air quality issues, including environmental tobacco smoke and feedlot odors and runoff, and monitor potential health impacts.

    b. Local health departments should work with schools to encourage the use of the Tools for Schools kit, which is intended to prevent indoor air quality incidents by managing the indoor air environment more effectively. Schools and local health departments should strengthen collaboration with the Nebraska Department of Education.

13. Each local health department should identify and address water quality issues, such as contamination from nitrates, animal waste, sewage, or pesticides, and monitor potential health impacts.

    a. Local health departments and partners should post recreational water exposures and fish consumption advisories in local newspapers, on health department websites, or in other local media.

b. Local health departments should have the capacity to interpret water data and participate in land use planning discussions.

14. Each local health department should collaborate with their partners to identify soil quality and waste management issues (e.g., mercury thermometers and hazardous materials) and monitor potential health impacts.

15. Local health departments should inform, educate and empower people about food safety. They can do this by providing information about handling food properly, temperature guidelines, contaminants, and food-borne illness threats.

    a. Where appropriate and reasonable, local health departments should collaborate with the Department of Agriculture on food safety inspections and investigations as well as the promotion of local farmer's markets and the use of other local food products.

The public health community should facilitate awareness of environmental health issues by carrying out the following recommendations:

16. Public information and social marketing are essential components of all environmental public health programs. In cooperation with the state, local health departments, and other partners, information should be communicated to the public so people can make decisions to protect their health and the environment.

    a. Local health departments should work with schools to encourage their use of the Fit, Health, and Ready to Learn: A School Health Policy Guide Part III produced by the National Association of State Boards of Education.

17. The built environment should encourage safe and accessible areas for exercise and commuting as well as encourage mass transportation and/or carpooling or other energy saving practices.

Strategy IV: Expand Local, Regional, and State Systems to Develop and Deliver Innovative Health Promotion and Disease Prevention Programs

Expanding local, regional, and state capacity for health promotion and disease prevention is necessary to keep Nebraska's public health system moving forward. Health promotion is "the combination of educational and ecological supports for action and conditions of living conducive to health."[57] In health promotion, it is necessary to match the multiple determinants of health with a variety of interventions to affect change. Learning experiences designed to produce voluntary individual or community actions improve health. Health promotion also considers how social, political, economic, organizational, policy, and other environmental conditions interact with behavior to affect health. The purpose of health promotion is to enable people as individuals and as communities to gain greater control over their own health.

A Framework for Health Promotion and Disease Prevention

The social ecological model is a framework that can be used to guide health promotion and disease prevention interventions.[58] In this model, behavior is viewed as affecting and being affected by multiple levels of influence. There are five levels of influence for health-related behaviors and conditions: (1) intrapersonal or individual factors; (2) interpersonal factors; (3) institutional or organizational factors; (4) community factors; and (5) public policy factors. Additionally, the model incorporates the principle of reciprocal causation between individuals and their environments (i.e., behavior influences and is influenced by the environment). To promote health, ecosystems or environments must provide economic and social conditions that make good health and healthful lifestyles possible. Individuals must have access to information and life skills so they can make decisions to engage in healthful behavior. The ecosystem must also make healthful goods and services available.

To create effective interventions and to measure their successes, health professionals need to understand the role of individuals in health behavior. The intrapersonal level focuses on an individual's beliefs, attitudes, skills, knowledge, and other personal factors and how those affect behavior. Interpersonal interactions with family, friends, and social networks are some of the most powerful sources of influence on health-related behaviors. Humans are social creatures and learn from observing others, receiving rewards or punishments, being part of a social network, and the presence or lack of social support. Organizational or institutional change is an important level of influence to consider for the following reasons: (1) new health promotion programs and

[57]Green, L.W. & Kreuter, M.W. (1961). *Health promotion planning: An educational and ecological approach* (3rd ed.). Boston, MA: McGraw-Hill.
[58]Glanz, K., Rimer, B.K., & Lewis, F.M. (Eds.) (2002). *Health behavior and health education: Theory, research, and practice* (3rd ed.). San Francisco, CA: Jossey-Bass.

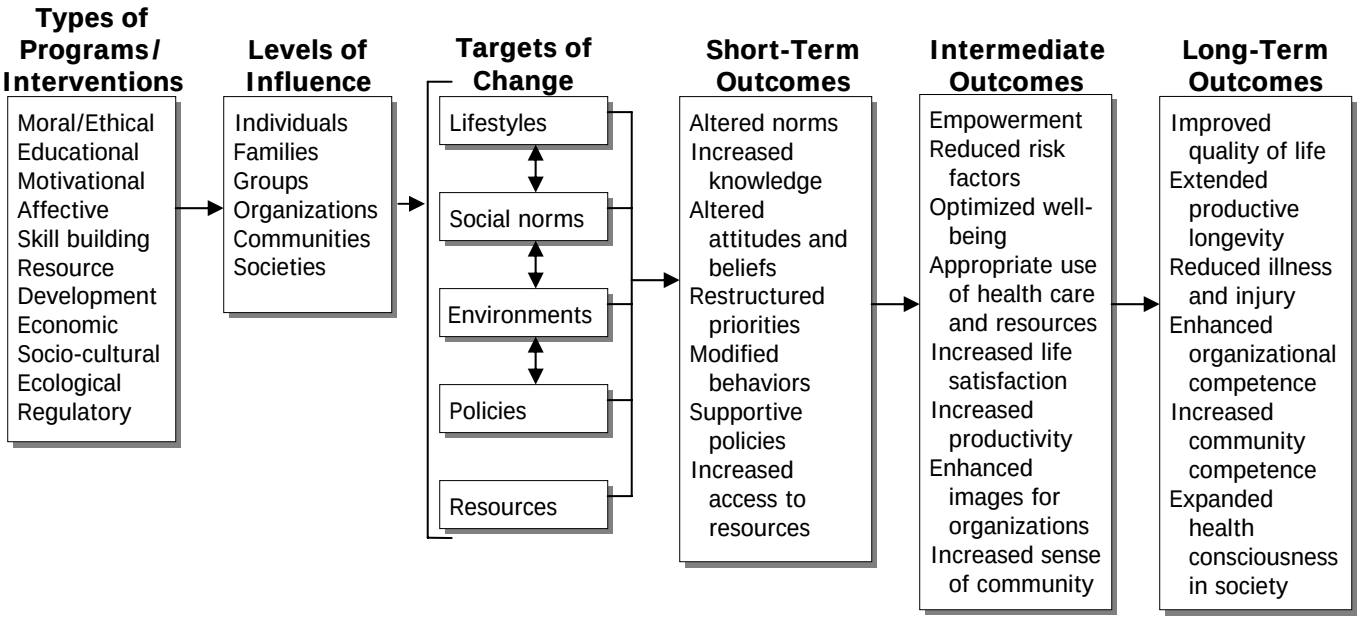
policies are often developed within organizations; (2) health promotion practitioners usually work within an organization that must first change or adapt for the practitioner to create new programs, services, or policies; and (3) health promotion organizations are increasingly collaborating to accomplish goals no single organization can reach alone. Additionally, an individual's working conditions (e.g., employment status, socioeconomic status, presence of health benefits) greatly influence health.

Public health focuses on a population level, so working with communities and policies, and reaching a larger audience with health interventions is vital to health improvement. At these levels, it is important to examine structures and policies that support healthy lifestyles, such as well planned walking trails and seatbelt laws, and try to reduce health hazards and barriers in social and physical environments. It is also critical to bring organizations and community stakeholders together to work in coalitions or collaborations to identify and create broad population change (i.e., community organizing and social action). Work at the policy, community, and organizational levels is not intended to ignore the individuals who make up those organizations and communities. In addition, the focus should not solely lie on individual and interpersonal interventions without considering the upper levels of influence. Health promotion is most effective when all levels are considered when planning an intervention.

Figure 3-1 incorporates the social ecological framework and shows the relationship among types of health promotion interventions, levels of influence, targets of change, and outcomes.

FIGURE 3-1

The Relationships among Health Promotion Interventions, Levels of Influence, and Outcomes

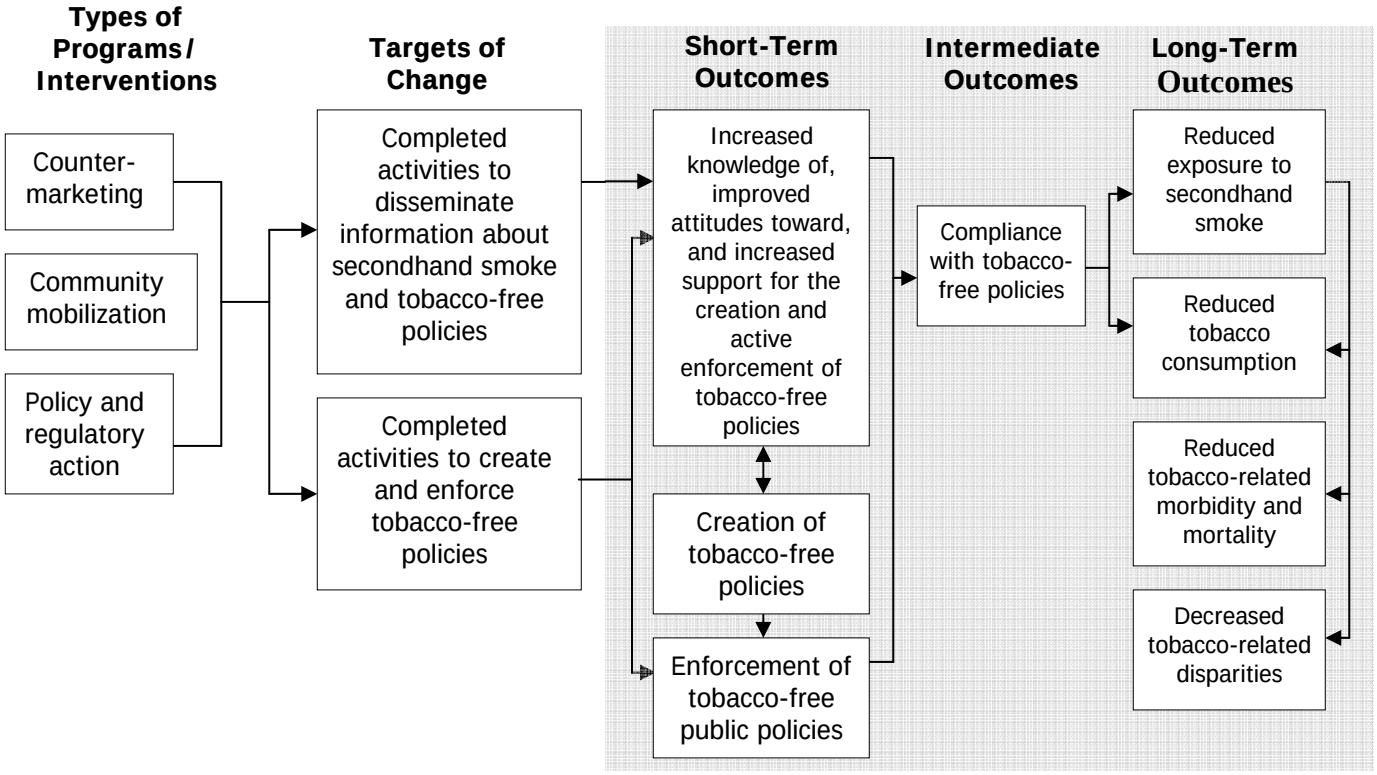


Souce: From "The Health Promotion Research Agenda Revisited," by L. W. Green, *American Journal of Health Promotion* Volume No. 6, pages 411 – 413. Copyright 1992 by *American Journal of Health Promotion*.

Figure 3-2 shows how the strategies of the Tobacco Free Nebraska Program to eliminate nonsmokers' exposure to secondhand smoke fit into this model. Similar models could be created to reflect Tobacco Free Nebraska's work to prevent initiation of tobacco use among young people and to promote tobacco cessation. Tobacco Free Nebraska uses a comprehensive approach with different types of interventions, all levels of influence, and targets of change to achieve their outcomes. Counter-marketing, to counter the advertisements from the tobacco industry, is an educational and motivational activity that influences individuals, families, and communities. Community mobilization is a community intervention, and policy and regulatory action falls under regulatory interventions, and both influence communities. Disseminating information about secondhand smoke and tobacco-free policies aims to change social norms, environments, and lifestyles. Creating and enforcing tobacco-free policies and laws targets policies.

FIGURE 3-2

The Relationships among Strategies used by Tobacco Free Nebraska to Eliminate Nonsmokers' Exposure to Secondhand Smoke and their Outcomes



Source: Starr G, Rogers T, Schooley M, Porter S, Wiesen E, Jamison N. Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs. Atlanta, GA: Centers for Disease Control and Prevention; 2005.

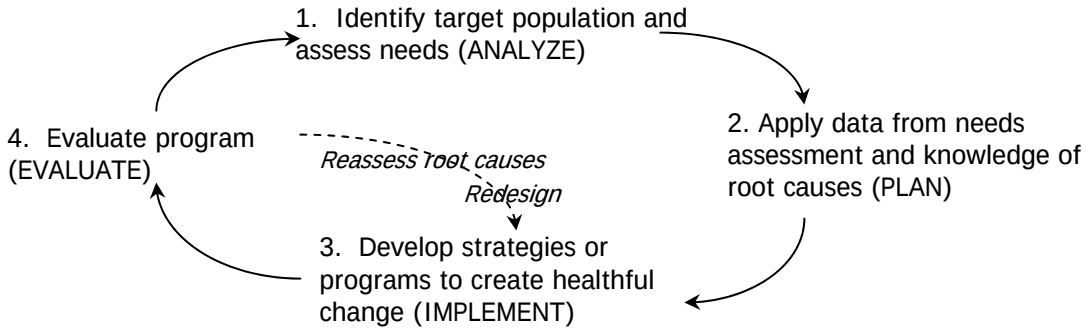
Health Promotion Planning

Health promotion is the science of changing behavior; it is the tool we use to guide interventions. When planning an intervention, the first step is to identify the target population (e.g., males age 14 to 24 or school age children) as shown in Figure 3-3. The second step is to complete a needs assessment to determine health needs of the target population and the determinants of health (i.e., personal, social, economic, and environmental factors that determine the health of individuals or populations) for the target population. The next step is to examine the data from the needs assessment along with knowledge about the root causes, which then leads to the development of strategies or programs designed to influence change, thereby improving health outcomes. The final step is evaluation of the program or procedures that were implemented to determine their effectiveness and to improve the quality of life of the target population. Various health promotion planning processes exist to guide public

health professionals. For example, local health departments across Nebraska are using the Mobilizing for Action through Planning and Partnerships (MAPP) process for their work.

FIGURE 3-3

The Health Promotion Planning Cycle



Source: Green, L. W. & Kreuter, M. W. (1999, 1961). *Health promotion planning: an educational and ecological approach* (3rd ed.). Boston, MA: McGraw-Hill.

Current Situation in Nebraska

The Turning Point Work Group identified "expanding local, regional, and state systems for disease prevention and health promotion" as a strategic initiative to move public health forward in Nebraska in the next five to ten years. Interviews were conducted with several public health professionals to gather input on the current situation of health promotion and disease prevention in Nebraska. A number of recommendations were suggested by the interviewees and the Turning Point Work Group. The recommendations are described below and are organized according to: (1) the Division of Public Health; (2) DHHS, other state partners, and local health departments; and (3) the greater public health community.

Division of Public Health

The Nebraska DHHS Health Promotion Unit has several programs that address a variety of health topics ranging from cancer control to injury prevention. Each of these programs develops its own strategic plan. The programs also work with the same or similar community groups and organizations across the state, often requesting them to form coalitions or to conduct health surveys. The system could strengthen its current health promotion and disease prevention infrastructure by developing a strategic plan for all programs in the Health Promotion Unit to assure coordination. Additionally, other units (Environmental Health, Lifespan Health Services, Community Health Planning and

Protection, and Public Health Support) should coordinate their plans as much as possible to identify the top health priorities for the entire system. This would help improve overall internal communication. Instead of asking the same groups to focus on many different issues, they could target different groups with different issues and use resources more effectively.

In addition to separate strategic plans, the programs and offices hold separate annual conferences. The conferences play a key role in keeping public health practitioners, health professionals, and others informed about public health issues. While the conferences play an important role, the number of conferences, overlapping dates, and similar target audiences makes it difficult, both financially and in terms of time, to attend them. A possible solution is to create a cooperative biannual "what really works" conference in addition to annual conferences where health promotion and disease prevention programs have the opportunity to share best practices in their field.

DHHS, Other State Partners, and Local Health Departments

The State of Nebraska lacks a strategic statewide health promotion and disease prevention plan that includes innovative intervention strategies and priorities. This plan could serve as a guide for health promotion and disease prevention efforts across public health organizations. A diverse statewide planning committee with representatives from the DHHS, local health departments, the College of Public Health, the Nebraska Minority Public Health Association, the Minority Health Advisory Committee, and the Public Health Association of Nebraska and other community-based organizations could convene to create a strategic plan that would be updated regularly. Complementing the plan should be an effort to establish evidence-based specific health promotion and disease prevention intervention strategies in each local health department. The local health departments should complete a health promotion planning process, such as MAPP, to identify local needs and priorities. The Nebraska DHHS should continue to provide topic specific data reports to local health departments to support their efforts to identify local as well as statewide or regional health needs. The DHHS should work with local health departments to target technical assistance efforts, especially as they establish evidence-based health promotion intervention strategies. Additionally, the DHHS should consider reassigning its staff or hiring additional health educators who could work specifically with local health departments on program planning.

Health promotion and disease prevention strategies focus on the population level; however, some population subgroups, such as older adults, would greatly benefit from specific planning. The DHHS, local health departments, and others should develop a comprehensive approach to health promotion and disease prevention for older adults with health departments and local Area Agencies on Aging partnering to lead the effort. In addition, few Nebraska schools have health advisory councils that develop policies, coordinate activities, and seek student/family involvement in programs that address health. Nebraska schools also lack certified health educators to provide health

education. It is important to improve health education in elementary, middle, and high schools by increasing the number of school health advisory councils and the number of certified health educators. Finally, partners should develop multifaceted health promotion campaigns directed at racial and ethnic minorities that provide awareness of health risks and encourage behavior change in a culturally-sensitive and linguistically relevant manner.

Public Health Community

The public health community should be involved in the development of health promotion and disease prevention strategies. For example, they could help health promotion coalitions develop a broader focus. In addition, they can assist existing coalitions to work together to deliver health promotion messages and share the costs of implementing responses. The public health community could also seek funding for social marketing of health promotion and disease prevention issues, and promote a comprehensive approach and common framework (i.e., social ecological model) to implement programs and policies. In addition, they could encourage and assist the College of Public Health in developing a research agenda whose results would aid in developing health promotion strategies in local communities. The public health community can also serve as advocates for health assessments such as the Youth Risk Behavior Survey (YRBS). Finally, the public health community could also promote workplace wellness as an evidence-based strategy that works, as it has the potential to benefit all employees in an organization.

Recommendations

The DHHS should strengthen its current health promotion and disease prevention infrastructure by:

1. Developing a single strategic plan for the DHHS Health Promotion Unit to assure coordination across all programs and other DHHS programs. Internally, the Health Promotion Unit, Community Health Planning and Protection Unit, and Lifespan Health Services Unit should coordinate their plans and identify the highest priorities for the system.

2. Improving internal communication among DHHS programs. These programs are working with many of the same groups of people (e.g., local health departments) and could potentially share their workload by better communication. They could also cooperate on public health surveys which include the Behavioral Risk Factor Survey (BRFS), Minority Behavioral Risk Factor Survey (MBRFS), and the Youth Risk Behavior Survey (YRBS). The programs could share campaign ideas, educational strategies, and other materials.

3. Initiating a biannual “what really works” conference where each public health program has the opportunity to share best practices in their field. Additionally, a calendar of annual conferences should be added to the intranet so DHHS employees could access conference dates and overlapping conferences could be avoided.

4. Helping to identify funding for a faith-based coordinator who could increase communication among parish nurses and other faith-based public health professionals. The coordinator would also identify best practices in the area of faith-based public health.

5. Identifying funding for a worksite wellness coordinator to assist businesses in establishing worksite wellness plans. The DHHS should provide funding assistance to supplement pre-existing efforts.

6. Working with PHAN and NEAPHI to increase the availability of training opportunities, including distance education options, for the public health workforce, specifically in health promotion and disease prevention.

The NDHHS, Local Health Departments, and other partners should develop their capacity to address health promotion and disease prevention by:

7. Organizing a diverse statewide planning committee consisting of representatives from DHHS, local health departments, the College of Public Health, the Public Health Association of Nebraska, the Nebraska Minority Public Health Association, the Minority Health Council, and other community based organizations to create strategic statewide health promotion and disease prevention priorities.

8. Establishing evidence-based specific health promotion and disease prevention intervention strategies in each local health department, such as a tobacco prevention focus. The strategies can be based on priorities established through the MAPP process completed by approximately 18 local health departments. After local health departments identify priorities, they should coordinate their efforts with regional partners.

9. Continuing to provide topic specific data reports (e.g., injury) to local health departments and increase the amount of data provided on racial and ethnic minorities. These reports provide current data which can be used to identify health needs and can be used to prepare grant applications, health assessments, and planning processes.

10. Strategizing how to better provide technical assistance and combined funding to local health departments, community coalitions, and others engaging in health promotion work. Local health department directors, DHHS program staff, College of Public Health representatives, and other public health professionals could meet to

discuss what types of technical assistance are needed, what can be provided, and where gaps exist. This group could also hold biannual meetings to continue to enhance their collaborative partnership.

11. Hiring health educators (e.g., certified bilingual health education specialists) who could work with a defined number of health departments. The health educators could work with local health departments to identify common problems in a broader region. The health educators could provide technical assistance to health departments as they plan health promotion and disease prevention programs.

12. Developing a comprehensive approach to health promotion and disease prevention for older adults. Local health departments should lead the effort working with the State Unit on Aging, Area Agencies on Aging and other community organizations.

13. Developing a coordinated and comprehensive approach to promote student health and well-being. The Nebraska Department of Education (NDE) should adopt the Coordinated School Health Program (CSHP) model and incorporate it into the State Board of Education policy document titled *Providing Equitable Opportunities For An Essential Education For All Students in Nebraska Public School Districts.* The eight component model is based on the premise that the health of school-age youth is dependent upon a system that addresses program, policy, services, and environment issues (Appendix C). In addition, the NDE should provide assistance and support to local school districts and schools to implement effective Coordinated School Health Programs by: (a) modeling collaboration with other health agencies/organizations; (b) developing program guidelines, sample policies and position descriptions, resource lists, state and local student health data, and other useful information for program planning and improvement; (c) providing professional development opportunities on CSHPs; (d) providing professional development for School Health Council members, School Health Program Coordinators, and School Health Team members; (e) incorporating CSHPs into school improvement plans; and (f) providing direct technical assistance in implementing Coordinated School Health Programs.

14. Improving health education in Nebraska schools. School districts/buildings, with assistance from NDE, local health departments and the DHHS should work to establish School Health Councils and School Health Teams. The School Health Council focuses on district level policies and programs and the School Health Team focuses on building level implementation. Each Council/Team should include a diverse representation of school staff, families, students, and members of the community to oversee and evaluate the CSHP and make recommendations to the school board. Each school building and district should designate a School Health Program Coordinator to assist with the implementation and evaluation of the CSHP. All partners should work to improve the quality of health education provided in schools, encouraging certification of the health education teachers.

15. Developing multifaceted health promotion and disease prevention campaigns developed with racial and ethnic minorities that provide awareness of health risks and encourage behavior change in a culturally-sensitive and linguistically relevant manner. Local health departments conducting program planning processes, such as MAPP, should ensure that racial and ethnic minorities participate and are represented especially in data and community themes assessments.

The public health community should develop health promotion and disease prevention by:

16. Examining what could be done best at a statewide, regional, or local level and delegate activities as such. Funding should be obtained and designated at all levels to fund the activities. Additionally, health promotion coalitions could be created more broadly in addition to creating specific coalitions (e.g., tobacco). Existing coalitions should work together and collaborate to deliver health promotion messages and share the costs of implementing responses. Local health departments could help their regional coalitions to see possibilities of how they might fit into the public health community. School districts/buildings, with assistance from NDE and DHHS, should adopt a coordinated school health program model encompassing the eight components of coordinated school health.

17. Promoting a comprehensive approach and a common framework to implement health promotion and disease prevention interventions and policies. This framework should be based on the social ecological model that emphasizes a multilevel approach (i.e., individual, interpersonal, community, organization, policy, and environment) as mentioned previously. Interventions should focus on the higher levels of the framework, especially policies.

18. Encouraging the College of Public Health and its partners to develop a research agenda which will value and reward faculty for engaging in research projects with local communities and health departments.

19. Promoting workplace wellness as an evidence-based strategy that works through existing worksite wellness entities (WorkWell and Wellness Council of the Midlands) as well as through emerging worksite wellness entities. It may be easier to convince worksites that a comprehensive wellness program is necessary as opposed to topic specific programs such as tobacco cessation. Wellness programs have the potential to benefit all employees.

20. Encouraging policy changes, (i.e., primary seatbelt law, self-extinguishing cigarette law, tobacco and alcohol tax increases) which are proven methods for changing behaviors, decreasing health risks, and providing funding for public health initiatives.

Strategy V: Improve Access to High Quality, Affordable Health Care Services by Strengthening the Health Care Safety Net, Expanding the Supply of Health Professionals and Services in Underserved Areas, and Providing Culturally Competent Care

Many people in both rural and urban areas of Nebraska are unable to gain access to timely and effective preventive health and medical care services. These access barriers include financial (lack of health insurance coverage), the availability of health care providers, language and cultural barriers, and transportation barriers. These barriers have a significant impact on the health of people living in Nebraska. They negatively affect the productivity of the workforce, and they result in increasing health care costs. For example, individuals and families who do not have access to a regular physician usually do not receive timely clinical preventive services such as immunizations, prenatal care, and cancer screenings. They also tend to delay seeking treatment until their condition is more serious, which may lead to higher costs and worse health outcomes. For example, if a person delays treatment until a health condition is dire, he or she is more likely to go to an emergency room for treatment. Not only is this one of the most expensive methods of treatment, but delays in seeking treatment may prove to be too late to employ preventive or lifesaving measures.

Financial Barriers – Lack of Insurance Coverage

Although the percentage of uninsured in Nebraska is still well below the national average, the number of uninsured is steadily increasing according to the Census of Population Surveys that are conducted every year by the Census Bureau. According to this survey, there were 11.1 percent without health insurance coverage in Nebraska in 2006.[59] Many others have insurance coverage, but they are considered underinsured because high deductibles and coinsurance provisions prevent them from obtaining needed medical services.

The characteristics of the uninsured are well documented. For example, the majority of the uninsured have incomes below 200 percent of the federal poverty level and they tend to be in younger age groups (e.g., ages 19-34). They also have less education and work for small employers.[60] A 2004 survey by the Nebraska Department of Labor found that fewer than half of very small employers (three or fewer employees) offer their

[59]U.S. Census Bureau (August 2007). *Income, poverty, and health insurance coverage in the United States: 2006.* Retrieved November 5, 2007 from http://www.census.gov/hhes/www/hlthins/hlthin06.html (Other surveys, such as the Behavioral Risk Factor Surveillance Survey, have estimated that the number of uninsured is closer to 250,000 whereas a 2004 survey conducted by the Nebraska Center for Rural Health Research estimated the number of uninsured at about 150,000.)

[60]Nebraska Health Insurance Policy Coalition (August 2005). *State coverage options for expanding health insurance coverage and strengthening the health care safety net*.

employees health insurance coverage while about 98 percent of large employers (100 or more employees) offer health insurance coverage.[61] The primary reason why small employers have dropped coverage is the high cost of insurance premiums. Since 2000, health insurance costs for all employers nationally have increased by an average of 87 percent.[62]

Availability Barriers – Lack of Health Professionals

Many rural areas face unique challenges that include a shortage of health professionals, financially distressed hospitals, longer travel distances, and the lack of public transportation systems. Rural areas also have a relatively large elderly population and high poverty rates in some areas. It should be emphasized that some of these problems also occur in some parts of large cities such as Omaha and Lincoln where there are documented disparities related to race, ethnicity and/or lower socioeconomic status in some areas of the city.

In many rural areas, there is an inadequate supply of primary care physicians. Currently, 1,646 counties are designated as health professional shortage areas (HPSAs) by the federal government. Although the number of full or partial counties designated as primary care HPSAs in Nebraska has declined from 50 in 1997 to 38 in 2007, it still represents almost half of all of the nonmetropolitan counties without a regional hospital. It is estimated that Nebraska would need an additional 35 physicians to achieve a physician to population ratio of 2000 to 1 in the HPSAs.[63]

Unfortunately, the number of physician shortage areas may rise because fewer medical students are selecting family practice and other primary care specialties. For example, the National Resident Matching Program recently announced that the number of medical students choosing family practice continued to decline from 8.1 percent in 2006 to 7.8 percent in 2007.[64] Between 1997 and 2007, there was a 24 percent decline in family practice residency slots in the U.S. (3,262 to 2,621). There was a significant decrease in these slots being filled by U.S. medical students, 72 percent versus 42 percent. A similar trend is occurring in internal medicine where the percentage of U.S. trained third year residents decreased sharply from 54 percent in 1998 to 20 percent in 2005.[65]

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[61]Ibid.

[62]PricewaterhouseCoopers' Health Research Institute (2007, August 30). Behind the numbers: Healthcare cost trends for 2008. *Medical benefits newsletter*, *24* (16).

[63]Health Services and Resources Administration (2005, December 31). Selected statistics on health professional shortage areas. Shortage Area Designation Branch.

[64]Nebraska Rural Health Association (April 2006). Fewer medical students choose primary care: Patients may suffer. *E-news newsletter*.

[65]Seward, Z. (2007, July 25). Doctor shortage hurts a coverage-for-all plan. *Wall Street Journal*, p. B1.

This problem is magnified by a decline in the number of foreign physicians in training with J-1 visa waivers.* Between the 1996-1997 and 2004-2005 academic years, the number of physicians in the J-1 visa program fell from 11,600 to 6,200.[66] Currently, Nebraska has 10 obligated J-1 physicians practicing in rural underserved areas.

***Definition of J-1 Visa Waivers**

The J-1 Visa Program is for foreign medical graduates who wish to pursue graduate medical training in the United States. J-1 Physicians, also known as Foreign Medical Graduates or International Medical Graduates, are physicians from other countries who have sought and received a J-1 exchange visitor visa. The visa allows holders to remain in the U.S. until their studies are completed. At the completion of their studies they are expected to return to their home countries for two years before applying for a permanent visa in the United States. A J-1 Visa Waiver waives the two year home residency requirement and allows a physician to stay in the country to practice in a federally designated Health Professional Shortage Area (HPSA) or Medically Underserved Area (MUA) if sponsored by an interested U.S. government agency.

Source: Rural Assistance Center (http://www.raconline.org/info_guides/hc_providers/j1visa.php)

Another factor contributing to this looming crisis is the decrease in the number of hours worked by primary care physicians. For example, the average hours worked on all medically related activities fell from almost 54 hours per week to slightly more than 51 hours per week. Although women tend to work fewer hours than men, their average work hours have held steady over time while men's hours have declined.[67]

The net result of these trends is that it will be more difficult to recruit primary care physicians into both rural and urban shortage areas. Because of the programs that are currently in place at the University of Nebraska Medical Center, including the Rural Health Opportunities Program (RHOP) and the Rural Health Education Network (RHEN) as well as the state and federal scholarship and loan repayment programs, Nebraska is in a better position to meet this challenge. Nevertheless, it appears that other programs and policies may be needed to assure an adequate supply of primary care physicians in Nebraska.

In addition to a shortage of primary care physicians, the supply of dentists is becoming a major concern in Nebraska and across the country. In Nebraska, there are 28 percent more dentists practicing in metropolitan areas than rural areas, and the majority of the 221 dentists that are expected to retire in the next five years are in urban areas. Furthermore, the number of dentists graduating from Nebraska dental colleges has

[66]Coopey, J. (July 2007). Rural inner-city U.S. residents most affected by nationwide physician shortages. Personal Communication.

[67]Center for Tracking Health System Change (2007, July 9). *Women shore up the primary care workforce*. Retrieved from http://www.hschange.org/CONTENT/934/#ib2

decreased sharply from 66 slots to 45.[68] The potential large number of vacancies in metropolitan areas coupled with the declining number of graduates will make it very challenging to meet the dental health needs in rural Nebraska in the coming years. There are promising outreach programs at both Creighton University and the University of Nebraska campuses that help people in underserved communities (http://medicine.creighton.edu/news/11-10-2003_FactSheet.html). In response to the projected shortage of dentists, legislation was enacted to expand the scope of practice for dental hygienists in 2007. This legislation will allow dental hygienists to provide preventive measures such as the application of fluorides and sealants, the removal of sutures, and the assessment of preliminary charting, probing, and screening examinations.

Many small communities also lack an adequate supply of nurses. Unfortunately, this problem is likely to get worse in future years. Based on the results of a recent study conducted by the Center for Nursing in the Department of Health and Human Services, the expected demand for registered nurses (RN) and licensed practical nurses (LPN) will exceed the supply between 2006 and 2020. Using models from the National Center for Health Workforce Analysis (NCHWA), the demand will grow from about 16,000 full-time equivalent RNs in 2006 to over 20,000 in 2020. However, the supply is expected to expand from about 15,000 RNs in 2006 to only 16,500 by 2020. The report concludes that by the year 2020, there will be a shortage of about 3,800 RNs in Nebraska.[69] A similar model was also used to project the demand and supply of LPNs. The model projects an increase in demand from about 6,000 full-time equivalent LPNs in 2006 to 7,680 LPNs in 2020. The supply of LPNs is expected to increase from 5,506 LPNs in 2006 to 5,937 in 2020.[70]

There are several reasons for these growing imbalances between supply and demand. Some of these factors include an aging population, a small percentage of men and ethnic minorities who enter the profession (five and four percent respectively), and expanding demand in nontraditional health care settings (e.g., worksites and schools), and an inadequate number of faculty. According to the Center for Nursing, “hundreds of qualified applicants have been denied admission to nursing education programs because there is not enough faculty to teach them or enough clinical resources to accommodate their educational needs.”[71] It is hoped that the passage of the Nursing Faculty Student Loan Act in 2006 will provide a financial incentive to encourage more nurses to become nursing faculty. This Act provides for loan forgiveness in return for full-time teaching for two years for each year that a loan is received.

[68]Rauner, T. (2007, September 5). Personal Communication. Nebraska Office of Rural Health.
[69]Nebraska Department of Health and Human Services, Nebraska Center for Nursing (2006, September). *Annual Report* (p. 7). Lincoln, NE.
[70]Ibid.
[71]Ibid.

In addition to the decline in the number of primary care physicians, dentists, and nurses, many rural areas face a shortage of other health care providers, including mental health professionals, physical therapists, occupational therapists, radiological technologists, and nurses' aides. Most rural hospitals, physician clinics, and nursing homes are forced to pay a nationally competitive wage rate in order to attract these health professionals to their communities. However, the reimbursement rates allowed by Medicare and other third-party payers are based on local costs and may not be sufficient to pay these competitive rates.

Language and Cultural Barriers

Another factor that influences access to and the quality of health care is the cultural and linguistic competence of health professionals. These barriers as well as the lack of financial access often result in less than optimal care and worse outcomes for racial and ethnic minority populations. The 2006 National Healthcare Disparities Report clearly documented that Blacks, Asians, American Indians, and Hispanics received poorer quality of care than Whites based on 29 care measures. For example, in both 2000 and 2003, the proportion of adults 50 and over who had received recommended colorectal cancer screening was significantly lower among Blacks and Asians as compared with Whites; the same conclusion was reached among Hispanics as compared with non-Hispanic Whites.[72] Some studies have also found that African American patients are significantly less likely than White patients to receive certain revascularization procedures.[73]

According to the U.S. Department of Health and Human Services (DHHS), Office of Minority Health and Health Equity, cultural and linguistic competence is "a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations."[74] Culture can influence what an individual views as a health problem, how an individual interprets health information, and who should provide the treatment. An individual's experience with a health provider influences whether or not a patient understands and follows through with treatment or even returns for future care. As indicated in Chapter Two, Nebraska continues to become more diverse, which means that health professionals must increase their capacity to work effectively and be responsive to health beliefs and practices, and cultural and linguistic needs of diverse patient populations. In response to this national and statewide need, the U.S. DHHS created national standards on

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[72]Agency for Healthcare Research and Quality (December 2006). *2006 National healthcare disparities report* (AHRQ Publication No. 07-0012). Rockville, MD.

[73]Institute of Medicine (2003). *The future of the public's health in the 21st century*. Washington, DC: The National Academies Press.

[74]U.S. Department of Health and Human Services, Office of Minority Health (2007). *What is cultural competency?* Retrieved August 13, 2007, from http://www.omhrc.gov/templates/browse.aspx?lvl=1&lvlID=3

culturally and linguistically appropriate services (CLAS) [Appendix D].[75] The standards are one way to help organizations engage in a more consistent and comprehensive approach to health care for diverse patients.

Another factor that plays a key role in providing culturally competent care is the presence of minority health care providers in the workforce. In Nebraska, as in most of the country, there is a shortage of health care providers from racial and ethnic minority groups. For example, African Americans make up four percent of Nebraska's population, yet only 0.9 percent of the physicians in the state are African American.[76] Hispanics make up 5.5 percent of the population, yet only 1.2 percent of the physicians in the state are Hispanic. The numbers are similar for other minority and ethnic groups, and for other providers.

Transportation Barriers

Transportation is another major barrier for many rural and some inner city residents. Nationally, rural trips for medical care averaged 17.5 miles as compared to 8.3 miles for urban residents. However, rural residents were four times as likely to travel 30 miles or more for care (21.4 percent versus 4.5 percent).[77] Although Nebraska data are not available, the distances traveled in central and western Nebraska are likely to be even longer. If gas prices continue to remain at current levels or higher, the transportation barriers will become even more formidable. High gas prices also impact the most common methods of overcoming transportation barriers in rural areas. These methods include the use of mobile clinics and the provision of transportation for patients with low incomes.

Most areas of rural Nebraska lack public transportation services for nonemergency care. In addition, emergency medical services (EMS) are becoming less reliable in many areas because some communities have a shortage of appropriately trained volunteers that are able to respond when services are needed. The shortage is caused by an inability to leave a job at a moment's notice, as well as burnout, retirement, relocation to larger communities, and the costs of training and education. Consequently, it is becoming increasingly more difficult to sustain the volunteer EMS system. One option is to

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[75]U.S. Department of Health and Human Services, Office of Minority Health (2007). *National standards on culturally and linguistically appropriate services (CLAS)*. Retrieved August 13, 2007, from http://www.omhrc.gov/templates/browse.aspx?lvl=2&lvlID=15

[76]Nebraska Department of Health and Human Services, Office of Minority Health (October 2006). *Equalizing health outcomes and eliminating health disparities: Strategic plan of the Nebraska Office of Minority Health*. Retrieved August 16, 2007, from http://www.dhhs.ne.gov/minorityhealth

[77]Probst, J.C., Laditka, S.B., Wang, J., & Johnson, A.O. (May 2006). *Mode of travel and actual distance traveled for medical and dental care by rural and urban residents*. South Carolina Rural Health Research Center. Retrieved August, 2007, from http://www.ruralhealthresearch.org/projects/100001696/

develop more formal working relationships between large and small ambulance units. In this relationship, the larger ambulance service can assist the smaller unit if an emergency situation occurs. In addition to partnering with larger ambulance districts, some communities are considering forming ambulance districts or working with critical access hospitals to manage EMS services.

A few communities have replaced some volunteers with paid professionals (i.e., paramedics). The paramedics assist the nurses once the patient enters the hospital with an emergency condition. If there are no patients who need emergency treatment, the paramedics assist the nursing staff in taking the patient's blood pressure, inventorying equipment, and with many other duties.

Future Challenges and Developments

The dynamic nature of the health care environment continues to produce major challenges and offers some new opportunities to improve access to care. With health insurance premiums projected to rise at higher rates, a larger number of people in Nebraska are likely to become uninsured or underinsured. As a result, more individuals will be forced to rely on the state's fragile "safety net" system. The current safety net is more of a patchwork of "essential community providers" rather than a cohesive system that covers the entire state. Essential community providers are defined as those providers who traditionally serve Medicaid, uninsured, and other underserved or vulnerable populations.

There are several health care providers that serve Medicaid and uninsured patients. For example, Federally Qualified Health Centers (FQHCs) provide comprehensive primary care services, including mental health and dental services. FQHCs receive federal funding but must see all patients regardless of their ability to pay for services. FQHCs are located in Gering, Columbus, Lincoln, and there are two in Omaha. In 2007, the OneWorld Community Health Center in Omaha received funding to open a new clinic in Cass County, and Thurston and Dixon Counties received federal planning grants to determine the feasibility of developing a FQHC.

Many other essential community providers provide more selective types of services. Some of these providers include the Title X reproductive health clinics, migrant health clinics, sexually transmitted disease clinics, community mental health centers, regional mental health hospitals, and Head Start offices. In addition to these publicly funded providers, many physician-operated certified rural health clinics, other private physician clinics, and hospitals provide most of the uncompensated care in the state.

Positive Developments

There are several positive developments that have the potential to remove some of the financial and geographic access barriers. One area where considerable progress has

been made is in the recruitment and retention of health professionals. For example, the number of counties with a primary care federal health professional shortage area dropped from 50 in 1997 to 24.

One of the strategies that has been used by rural communities to enhance the recruitment and retention of primary care practitioners is to develop certified rural health clinics. Currently, there are 120 certified rural health clinics in Nebraska. These clinics receive reasonable cost-based reimbursement from Medicare and Medicaid if they are located in a federally designated medically underserved area or a health professional shortage area and if they use a physician assistant, nurse practitioner, or a nurse midwife at least 50 percent of the time.

A total of 65 rural hospitals have converted to critical access hospitals. Under this program, a hospital receives cost-based reimbursement from Medicare and Medicaid and more flexible staffing requirements. However, the length of stay is limited to an annual average of 96 hours and there can be no more than 25 acute care patients in the hospital at any given time. This program has kept many small rural facilities open, enhancing a community's ability to recruit and retain health professionals. With additional revenue, most rural hospitals have been able to offer many new services and several have renovated their facilities.

Another program that has improved access to care for children is Nebraska's State Children's Health Insurance Program called Kids Connection. This program provides health insurance to uninsured children with family incomes at or below 185 percent of the federal poverty level. For the month of December 2007, a reasonable average for the entire year, the Kids Connection program enrolled a total of 131,853 uninsured children (25,973 through CHIP and 105,880 through Medicaid). According to the U.S. Census Bureau, in Nebraska, there are an estimated 140,000 children at or below 185 percent of the federal poverty level. This indicates that the Nebraska Kids Connection Program is serving 93 percent of eligible children.

Telehealth

Another positive development for rural providers and facilities is the increased availability and quality of telecommunications and information technology to provide telehealth services. Telehealth can enhance the practice of health care delivery, diagnosis, consultation, treatment, and the transfer of medical data and education, especially to remote areas. Telehealth has been proven effective in the areas of radiology, pathology, cardiology, psychiatry, pharmacology, public health, and patient/medical education.

Telehealth has the potential to overcome many of the health problems experienced in rural areas. Perhaps the greatest advantage is that it can enhance the availability of medical care in isolated rural areas because rural patients now have greater access to

specialty consultation. From a patient's perspective, telemedicine can significantly reduce travel costs and allow the patient to receive more timely medical care services. Other advantages include:

- Reducing the isolation felt by many primary care physicians and other health care professionals in underserved areas;
- Enhancing the recruitment of physicians and health care workers to underserved areas;
- Increasing the financial viability of rural institutions and providers through patient retention and cost reductions;
- Facilitating the referral/consultation process between physicians; and
- Providing training and updated information to health professionals in rural areas.

Currently, many insurance carriers reimburse the consultation between the specialist and the primary care professional. However, most insurers do not reimburse for the cost of the equipment or transmission fees.

Rural Health Networks

Despite the success of these programs and the recruitment and retention efforts by small communities, many communities still do not have an adequate supply of primary care and mental health professionals, nurses, and some allied health professionals. Because of the large number of communities with small population bases, it will be difficult to totally close the gap. One of the strategies that communities can use is to form multicounty (community-based) rural health networks. These networks are able to combine their resources and expand their population base, which makes it easier to recruit health professionals. Networks also have the advantage of delivering services more efficiently and competing more effectively in a managed care environment. These networks will be in a better position to help shape the local health care delivery system, gain greater control over clinical decision making, collaborate with the local public health system, and retain a greater share of the health care dollars within their local communities.

Long-term success of networks hinges upon their ability to provide a broad array of cost-effective health care services in local communities. In order to accomplish this, both formal and informal linkages need to be developed with the safety net providers, local public health departments, and medical specialists in secondary and tertiary care centers. These linkages will be enhanced by the implementation of improved systems of emergency and nonemergency transportation, as well as telecommunication systems linking the communities. When these linkages are in place, the delivery of public health, mental health and substance abuse, and human services should be less fragmented and more readily available in many parts of the state. An integrated network also has more resources to develop more effective quality improvement and quality management programs.

Recommendations

1. DHHS should approve policies that will ensure access to comprehensive health services to all persons in Nebraska. In order to achieve this goal, the state should:

    a. Provide technical assistance to communities interested in developing community health centers.

    b. Create a coalition with a diverse membership to monitor and evaluate new federal and state initiatives to expand health insurance coverage.

    c. Explore the costs and benefits of the Kids Connection program to cover all children at 200 percent of the federal poverty level.

    d. Continue to aggressively promote the Kids Connection program and target outreach efforts to specific racial and ethnic minorities and other underserved population groups by building on successful models.

    e. Collaborate with the business community to explore options for increasing the availability of health insurance coverage. These options should include programs to promote greater self-sufficiency and enhance employability (e.g., job training and education) as well as tax subsidies.

    f. Continue full cost-based reimbursement under Medicaid for certified rural health clinics, community health centers, and critical access hospitals to help preserve these safety net providers.

    g. Create an insurance connection program to assist small employers and self-employed individuals in finding an appropriate plan.

    h. Collaborate with the insurance industry and health care providers to reimburse safety net providers such as well child clinics, public immunization clinics, community health centers, sexually transmitted disease clinics at 100 percent of cost for services provided to their clients.

2. In order to increase the supply of health professionals in health professional shortage areas, the state should:

    a. Continue to support and expand the state's incentive programs (scholarship and loan repayment).

    b. Continue to reimburse health care professionals for telehealth services under Medicaid.

c. Continue to support the recruitment and retention technical assistance efforts of the Office of Rural Health in rural communities.

d. Initiate training experience, and whenever appropriate, develop integrated and interdisciplinary health professional training experiences in rural areas for all health professional education programs. Integrated and interdisciplinary training opportunities could involve students in medicine, pharmacy, mental health, dentistry, nursing, and public health.

3. The DHHS, Office of Minority Health and Health Equity, should work with UNMC's continuing education program, Creighton University, and other appropriate training centers to develop a training program on cultural competence for all providers.

4. The State Office of Minority Health and Health Equity should provide technical assistance to assist health care organizations in establishing cultural competency standards based on CLAS. The Office should also work with medical education centers and other educational institutions to expand the number of interpreters and translators.

5. The DHHS should seek private foundation and federal funds to encourage the development of integrated rural health systems that include primary care and hospital services as well as public health, emergency medical services, and mental health and substance abuse services.

6. To improve rural emergency medical services (EMS), DHHS should consider:

   a. Forming a task force to explore new models for integrating EMS services with hospital networks under the critical access hospital program.

   b. Enhancing training opportunities for EMS volunteers using grant funds from the federal Medicare Rural Hospital Flexibility Program.

   c. Providing funds for implementing the trauma system plan.

   d. Promoting regional EMS networks that include community-based advisory committees.

7. To offset the projected shortage of dentists:

   a. DHHS, local health departments, and their partners should provide education about the benefits of fluoridation in those communities that do not have adequate fluoridation levels but exceed the population limits of LB 245.

b. DHHS should seek pilot funds for projects where the expanded scope of practice for dental hygienists as outlined in LB 247 can be fully demonstrated.

Strategy VI: Develop an Integrated System of Lifespan Primary and Preventive Care

In the past few years, several studies have demonstrated that the U.S. health care system is costly, inefficient, and uncoordinated. Because of these and other problems, many people fail to receive comprehensive primary care services that include appropriate preventive care. A recent report concluded that "there is significant underuse of effective preventive care in the United States, resulting in lost lives, unnecessary poor health, and inefficient use of health dollars".[78] For example, increasing the use of the following preventive services would save more than 100,000 lives in the United States:

- 45,000 additional lives would be saved each year if we increased to 90 percent the portion of adults who take aspirin daily to prevent heart disease. Today, fewer than half of American adults take aspirin preventively.

- 42,000 additional lives would be saved each year if we increased to 90 percent the portion of smokers who are advised by a health professional to quit and are offered medication or other assistance. Today, only 28 percent of smokers receive such services.

- 14,000 additional lives would be saved each year if we increased to 90 percent the portion of adults age 50 and older who are up-to-date with any recommended screening for colorectal cancer. Today, fewer than 50 percent of adults are up-to-date with screening.

- 12,000 additional lives would be saved each year if we increased to 90 percent the portion of adults age 50 and older who are immunized against influenza annually. Today, 37 percent of adults have had an annual flu vaccination.

- 3,700 additional lives would be saved each year if we increased to 90 percent the portion of women age 40 and older who have been screened for breast cancer in the past two years. Today, 67 percent of women have been screened in the past two years.

    - Breast and cervical cancer screening rates were lower in 2005 compared to five years earlier for every major racial and ethnic group: White, Hispanic, African American, and Asian women all experienced declines.

- 30,000 cases of pelvic inflammatory disease would be prevented annually if we increased to 90 percent the portion of sexually active young women who have

[78]National Commission on Prevention Priorities. (August 2007). *Preventive care: A national profile on use, disparities, and health benefits*. Washington, DC: Partnership for Prevention.

been screened in the past year for chlamydial infection. Today, 40 percent of young women are being screened annually.[79]

A recent study by the California Endowment found that there was significant annual savings from a five percent change in the incidence of selected illnesses, injuries, exposures, and behaviors.[80] The estimated savings are reflected in Table 3-1 below.

TABLE 3-1

Potential Annual Savings from a 5 Percent Change in Incidence of Selected Illnesses, Injuries, Exposures, and Behaviors

Heart disease	$974,078,000
Tobacco use	$386,650,000
Diabetes (Type II)	$ 79,102,320
Falls among the elderly	$ 60,798,775
Breastfeeding	$ 15,827,863
DUI fatalities and injuries	$ 93,414,256
Childhood asthma	$ 12,079,334
Gunshot wounds	$ 10,768,131
HIV	$ 7,056,605
Grand Total	**$1,639,775,284**

Source: Prevention Institute and The California Endowment.

Another report by the Milken Institute documents the economic burden of chronic disease.[81] This report concludes that the total economic impact of chronic disease on the economy is $1.3 trillion annually. In Figure 3-4, the total avoidable treatment costs and output losses are $1.1 trillion by 2023 if there are modest improvements in preventing and treating these diseases.

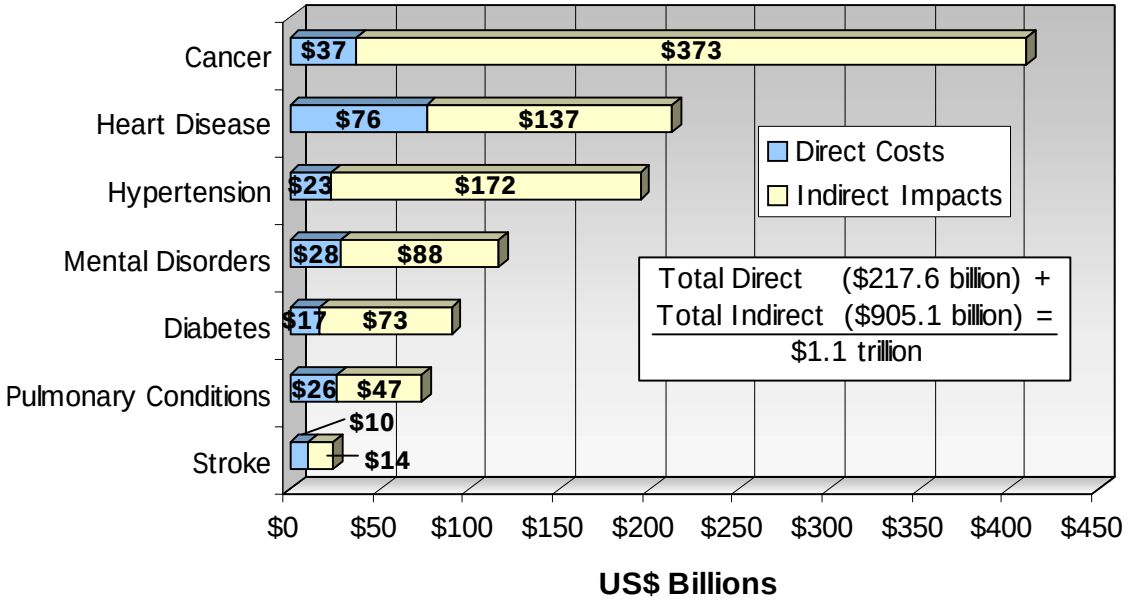
[79]Ibid., pp. 6-7

[80]Prevention Institute and The California Endowment (August 2007). *Reducing health care costs through prevention: Working document*. Retrieved February 2008 from http://www.preventioninstitute.org/documents/HE_HealthCareReformPolicyDraft_091507.pdf

[81]DeVol, R. & Bedroussian, A. (October 2007). *An unhealthy America: The economic burden of chronic disease*. Santa Monica, CA: Milken Institute.

FIGURE 3-4

Avoidable Treatment Costs and Output Losses, 2023



Source: Milken Institute
Note: Treatment expenditures for individuals in nursing homes, prisons, or under other institutional care are not included. Treatment expenditures for comorbidities and secondary effects of listed disease are also excluded.

The report concludes that investment in good health is an investment in economic growth.

The Nebraska Health System

In comparison with other states, the Nebraska health care system performs at a relatively high level although many system improvements are needed. Three major studies have attempted to compare states on overall health performance. The first study was conducted by the Agency for Healthcare Research and Quality in the U.S. Department of Health and Human Services.[82] This study compares measures that have been grouped into the following four categories:

- Types of care (preventive, acute, and chronic)
- Settings of care (hospitals, ambulatory care, nursing home, and home health)
- Five specific conditions (cancer, diabetes, heart disease, maternal and child health, and respiratory diseases care)
- Overall health care quality

[82]Agency for Healthcare Research and Quality. (2007, December 5). *2006 state snapshots*. Retrieved February 2008, from http://statesnapshots.ahrq.gov

Using selected indicators in each of these categories, the states were ranked accordingly. The strongest and weakest measures for Nebraska are shown below. The strongest measures are those in which the state performed above the all-state average and are strongest among their measures relative to all reporting states. The weakest measures are those in which the state performed below the all-state average and are weakest among their measures relative to other states.

Nebraska Strongest Measures

Measure Short Name	Measure Long Name
Nursing home short-stay residents – with pressure sores	Post acute care: Percent of short-stay nursing home residents with pressure sores
Nursing home residents – in bed	Chronic care: Percent of nursing home residents who spent most of their time in bed or in a chair
Nursing home residents – physically restrained	Chronic care: Percent of nursing home residents who were physically restrained
Always get appointment for care – Medicare, fee for service	Percent of adults age 18 and over on Medicare fee for service who reported that they can always get care for illness/injury as soon as they wanted
Easy planned appointments – Medicare, fee for service	Percent of adults age 18 and over on Medicare fee for service who reported that they can always get care for illness/injury as soon as they wanted

Nebraska Weakest Measures

Measure Short Name	Measure Long Name
Colorectal cancer diagnosed at advanced state	Colorectal cancer incidence rate per 100,000 for men and women age 50 and over diagnosed at advanced stage (regional and distant SEER summary stage)
Dialysis and good urea reduction – Medicare	Percent of Medicare hemodialysis patients with urea reduction ratio 65 percent or higher
Sigmoidoscopy or colonoscopy	Percent of men and women age 50 and over who report they ever received a flexible sigmoidoscopy or colonoscopy
Nursing home residents – with urinary catheter left in	Chronic care: Percent of nursing home residents who have/had a catheter inserted and left in the bladder
Avoidable hospitalizations – influenza	Immunization-preventable influenza admissions (excluding transfers from other institutions) per 100,000 population, age 65 years and older

Source: Agency for Healthcare Research and Quality
Note: States' specific performances on each of these measures are available in the All-State Data Table for All Measures page on the State Snapshots web site: http://statesnapshots.ahrq.gov

The Commonwealth Fund also developed state scorecards using 33 key indicators of performance under the following categories: (1) access, (2) quality, (3) avoidable hospital use and costs, and (4) healthy lives.[83] Overall, Nebraska ranked twelfth out of 50 states. Despite Nebraska's high ranking, the performance of the health care system could be improved. Table 3-2 compares Nebraska's ranking to the rates of the best performing state for 11 scorecard indicators.

TABLE 3-2

Nebraska: Estimated Impact of Improving State Performance

Indicator	If Nebraska's performance improved to the level of the best-performing state for this indicator, then:
Insured Adults	52,018: more adults (ages 18-64) would be covered by health insurance (public or private), and therefore would be more likely to receive health care when needed.
Insured Children	3,602: more children (ages 0-17) would be covered by health insurance (public or private), and therefore would be more likely to receive health care when needed.
Adult Preventive Care	64,261: more adults (age 50 and over) would receive recommended preventive care, such as colon cancer screenings, mammograms, pap smears, and flu shots at appropriate ages.
Diabetes Care	15,547: more adults (age 18 and older) with diabetes would receive three recommended services (eye exam, foot exam, and hemoglobin A1c test) to help prevent or delay disease complications.
Childhood Vaccinations	1,613: more children (ages 19-35 months) would be up-to-date on all recommended doses of five key vaccines.
Adults with a Usual Source of Care	78,863: more adults (age 18 and older) would have a usual source of care to help ensure that care is coordinated and accessible when needed.
Children with a Medical Home	52,540: more children (ages 0-17) would have a medical home to help ensure that care is coordinated and accessible when needed.
Preventable Hospital Admissions	5,062: fewer hospitalizations for ambulatory care sensitive conditions would occur among Medicare beneficiaries (age 65 and older) and $22,789,000 dollars would be saved from the reduction in hospitalizations
Hospital Readmissions	277: fewer hospital readmissions would occur among Medicare beneficiaries (age 65 and older) and $2,814,000 dollars would be saved from the reduction in readmissions.
Hospitalization of Nursing Home Residents	732: fewer long-stay nursing home residents would be hospitalized and $6,212,000 dollars would be saved from the reduction in hospitalizations.
Mortality Amendable to Health Care	251: fewer premature deaths (before age 75) might occur from causes that are potentially treatable or preventable with timely and appropriate health care.

Source: The Commonwealth Fund

[83]The Commonwealth Fund (2007, June 13). *Aiming higher: Results from a state scorecard on health system performance*. Retrieved February 2008, from http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=494551

Notes: Estimates of improvements in state performance were calculated as follows: for each indicator, the difference between the best-performing state's rate and the subject state's rate was multiplied by the applicable subpopulation of individuals in the subject state. (For the readmissions indicator), the difference in rates was multiplied by the applicable number of Medicare hospitalizations in the subject state.) Medicare cost-savings from reduced hospitalizations were calculated using the average cost of the applicable hospitalizations in the subject state. Calculations do not account for potentially interactive effects of indicators (e.g., insurance coverage increases the likelihood of having a usual source of care and receiving preventive care).

The study by the Milken Institute also analyzed the economic impact of seven chronic diseases at the state level. This study examined the number of cases of chronic illnesses for various types of cancers, diabetes, hypertension, stroke, heart disease, pulmonary conditions, and mental disorders as well as the estimated costs that could be avoided through more effective prevention and treatment. According to the results of the study, Nebraska ranked 17th from the top. The report found that the states with the highest avoidable costs generally had a higher rate of smoking, alcohol abuse, poor diet, and lack of physical activity.[84] The report concluded that good health is an investment in economic growth both at the state and national level. It is critical to have a well-educated and healthy workforce to remain competitive in the global marketplace. Although remarkable progress has been made in reducing death and disability from these chronic diseases, continued progress can result from more intensive prevention and early intervention efforts.[85]

Building a Cohesive Health Promotion and Disease Prevention System

Although there is overwhelming evidence that health promotion, disease prevention, and wellness programs and activities have a positive impact on both the length and quality of life, a major commitment is needed to fulfill the promise of prevention. Realizing this promise will require a combination of system changes (i.e., the integration of primary care and public health) and personal responsibility.

Until recently, prevention and wellness activities were often limited to federal, state, and local public health departments. In recent years, however, there is a realization that many entities must form collaborative partnerships to achieve the goal of maximizing the health and wellness of all persons in a community or state. For example, the steady decline in cardiovascular disease can be attributed to many factors, including: (1) improved treatments such as open heart surgery, (2) more timely screening and follow-up treatment (e.g., hypertension and cholesterol), and (3) changes in behavioral lifestyles (e.g., declining tobacco use, improved nutrition, and increased physical activity).

[84]DeVol, R. & Bedroussian, A. (October 2007). p.26.
[85]Ibid., p. 183.

The question becomes: how can Nebraska realign its health care system and reallocate its resources to improve the health and wellness of the population? Although this is a complex issue, Nebraska can begin by forming collaborative partnerships that involve representatives from the following sectors: primary care practitioners, hospitals, local and state health agencies, businesses, schools, colleges and universities, the faith community, senior centers, and employers and insurers (payers). These work groups/coalitions need to identify the most pressing risk factors and health issues (e.g., obesity and diabetes) and develop comprehensive solutions. The group also must identify the roles and responsibilities of the major players in the system. Some of the major questions that should be addressed include:

- What are the major risk factors and problems in the community?
- What are the highest ranking priority issues and is there sufficient political will to address them?
- Are there evidence-based policies, programs, and practices that can be implemented?
- What motivation, knowledge, skills, and resources do individuals need to change their behaviors?
- How can providers redesign their practices, including office-based systems to better address the prevention needs of patients?
- How can payers develop financial and nonfinancial incentives for employees to use preventive services and adopt healthy lifestyles?
- How can a population-based prevention and wellness approach best support the provision of clinical preventive services in primary care offices?
- What are the roles and responsibilities of the key players?

Roles and Responsibilities

Although it is difficult to specify the exact roles and responsibilities, some general areas can be identified between public health and primary care providers. It is generally agreed that primary care physicians and other primary care practitioners (e.g., physician assistants and nurse practitioners) should provide direct clinical services such as vaccinations, cholesterol and hypertension screening, and individual counseling (e.g., encourage patients to stop smoking and exercise regularly). They also need to modify or redesign their office and information systems to notify patients of essential prevention interventions and to collect relevant local data to determine if these interventions are cost-effective. Patients can do their part by following the guidelines outlined by the National Patient Safety Foundation.

In contrast to focusing on individual patients, public health agencies would follow a population-based approach or focus on the health of the entire community which would include social and environmental factors. More specifically, public health agencies would be responsible for organizing the community coalition, analyzing data and information to determine the health risks and other problems, obtaining input from members of the

community that are not represented on the community coalition, identify the best practices for prevention interventions, establish and implement an evaluation plan, and perhaps assist employers, faith-based organizations, schools, and senior centers in the implementation of specific policies and programs. They would also use social marketing techniques to tailor messages that would support the messages delivered by the providers to patients. In addition, public health agencies could also work with health care providers and employers to conduct health risk appraisals and define patient-specific risks. Finally, public health agencies are responsible for assuring that these multiple stakeholders are working together to achieve common goals. However, this role does not imply that the public health agency is **always** the lead agency.

The Integration of Mental Health

According to the World Health Organization, wellness is not merely the absence of disease, but rather a positive state of good physical and mental health and spiritual well-being. Although mental health is an important element of an individual's overall health, it is generally considered distinct from physical health. For example, primary care practitioners deal with mental symptoms as part of a larger more general problem. Despite known risk and protective factors, many public health practitioners have been reluctant to address these issues from a population-based perspective. However, using a preventive approach with mental health can be very effective. Successful preventive efforts depend on identifying appropriate risk and protective factors. Studies have determined that certain risk factors are associated with children's conduct problems. These risk factors may include poor conflict management skills, harsh and ineffective parenting skills, parent substance abuse and parent marital discord. On the other hand, there are protection factors that can lead to positive development. These factors may include structured and caring parenting, connections with supportive family networks, good relationships with positive peers, and recognition for efforts, improvements, and achievements.[86]

Several research studies have suggested that mental health problems are precursors to delinquency, substance abuse, risky sexual behaviors, and school failure. For example, conduct problems are associated with the initiation of alcohol use as well as greater escalation of alcohol use and tobacco use over time. However, participation in evidence-based prevention programs has demonstrated positive behaviors years after program participation.[87]

A 2006 Behavioral Risk Factor Surveillance Survey found that the prevalence of depression among adults was also strongly associated with high risk health behaviors.

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[86]Substance Abuse and Mental Health Services Administration, Center for Mental Health Services. (2007). *Promotion and prevention in mental health: Strengthening parenting and enhancing child resilience* (DHHS Publication No. CMHS-SVP-0175). Rockville, MD: pp. 7-12.
[87]Ibid, p. 14.

This survey found that those individuals that have ever been diagnosed with a depressive disorder were considerably more likely to engage in unhealthy behaviors (see Table 3-3).

TABLE 3-3

Prevalence of Unhealthy Behaviors for Individuals Ever Diagnosed with a Depressive Disorder, 2006

	Individuals with a Depressive Disorder	State Average
Current smoker	31	21
No leisure-time physical activity	30	24
Obesity	38	26
Heavy drinking	5	4

Source: Unpublished data, Nebraska Department of Health and Human Services, 2006.

For example, individuals who have been diagnosed with depression are more likely to be smokers, less physically active, obese, and heavy drinkers. In comparison with the state averages, the rates for individuals with depression are significantly higher than the state average.

Mental health problems have not been traditionally reimbursed at the same levels as physical illnesses. In addition, many mental conditions carry with them a stigma, which can decrease the likelihood of people seeking treatment. Public health programs can work to change policies and public perceptions about mental conditions so they reach parity with physical conditions in both treatment coverage, and also in prevention programs.

These findings suggest that public health agencies and primary care practitioners and mental health agencies need to work together more effectively than they have in the past. Broad community coalitions need to be formed to involve all of the stakeholders in the community. Similar efforts have shown promising results for children 12 to 17 in many Nebraska communities. Although substantial barriers exist (e.g., funding, organizational capacity, low provider reimbursement, inadequate team training for practitioners), the benefits of integration and a preventive approach far outweigh the costs.

Recommendations

1. The University of Nebraska Medical Center College of Medicine and Creighton University School of Medicine should develop more formal educational programs where a team approach is used to teach students to address mental health problems

more effectively. The team should include primary care professionals, mental health practitioners, and public health professionals.

2. Local public health agencies should work with communities to form broad-based coalitions to collect risk and protective factor data, design prevention programs to meet the needs, and evaluate the effectiveness of these programs.

3. Local public health agencies and primary care practitioners should work together to design and conduct health risk appraisals and define patient-specific risks. Local public health agencies should work with primary care practitioners to modify office and information systems to notify patients of essential preventive interventions and collect local data to determine cost effectiveness.

4. The Department of Health and Human Services should examine more systematic strategies to coordinate funding for prevention and treatment efforts across state and local agencies.

5. New educational programs should be developed to help create a workforce that is capable of implementing age and culturally-appropriate evidence-based practices.

6. Educational programs should be launched to help patients and practitioners to work together as a team to address health problems.

7. Policies and laws should be changed so that coverage for mental conditions reaches parity with physical conditions.

Strategy VII: Develop Sustainable Financing for Public Health Services

Financing the public health system is an important part of building and sustaining the public health infrastructure in Nebraska. As a result of Nebraska's first Turning Point public health improvement plan, local public health departments were created and funded with Tobacco Settlement dollars to provide the core functions and ten essential services of public health to the state's ninety-three counties. As state and local capacity to address these functions continues to grow, consideration should be given to addressing the financial elements of infrastructure development. In addition to developing financial infrastructure, public health professionals must begin to build skills in the area of business planning to justify future investment decisions.

In 2003, the Institute of Medicine recommended conducting a regular assessment of the adequacy and capacity of the governmental public health infrastructure.[88] The purpose of the assessment is to inform the public about changes in health status as well as the major resource and funding gaps. This assessment should include an evaluation of federal, state, and local funding sources for public health infrastructure and include input from all levels. It should identify strengths and weaknesses as well as serve as the foundation for developing a funding and technical assistance plan to assure sustainability of the system. Regular assessments will enable public health agencies to determine the appropriate funding levels for state and local public health agencies to sustain current capacity and to identify new programs and resources to enhance current capacity.

Creating business plans is an emerging strategy that public health agencies should use to improve program efficiency and long-term financial stability. The goal of a business plan is to produce a product or provide a service that ultimately makes a profit, whereas the goal of a public health agency is to provide a service and achieve specific outcomes. A public health business plan should be prepared when a new program or approach is needed to address a public health issue. Ideally this new approach should be self-sustaining in five years or less. Projects should focus on community health issues that have been identified through a strategic planning process such as Mobilizing for Action through Planning and Partnerships (MAPP). Business planning starts with a feasibility study to determine whether a project or approach is practical and whether a public health agency should write a full business plan.[89] The major components of a business plan include: 1) a determination of need and the target market; 2) a definition of the project idea and objectives; 3) a description of goals and measurement process; 4) an industry analysis which involves a review of the latest evidence for and against

[88]Institute of Medicine (2003). *The future of the public's health in the 21st century*. Washington, DC: The National Academies Press.

[89]Orton, S., & Menkens, A.J. (2006). Business planning for public health from the North Carolina Institute for Public Health. *Journal of Public Health Management and Practice*, *12*(5), 489-492.

the project; 5) a description of competitors and partners; 6) a timeline; 7) a risk and exit plan; and 8) the availability of financial resources. The business plan should be produced by a team of employees and partners to promote buy-in and greater understanding of the process. Sample public health business plans can be viewed at the Management Academy for Public Health website (http://www.maph.unc.edu/bplans/bplan_models/index.htm).

Sources of Funds for State and Local Public Health Agencies

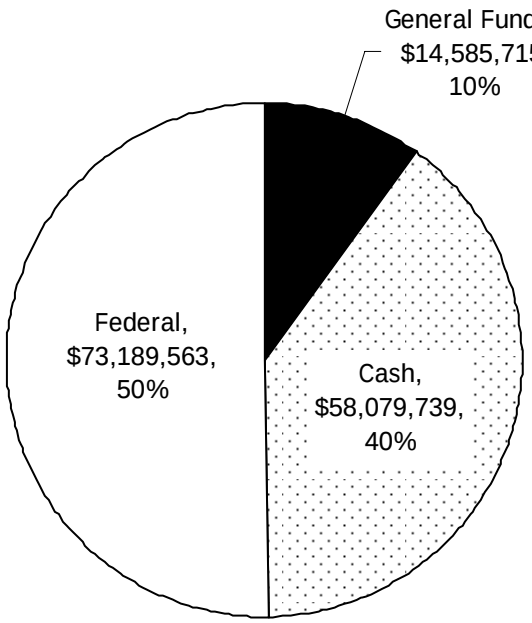
Public health programs and activities in Nebraska at both the state and local level are funded from a variety of sources, including local, state, and federal governments, cash funds (e.g., the purchase of a professional license or birth certificate), and private foundations. At the state level, federal funds constitute 50 percent of the Division of Public Health's revenue, cash funds make up about 40 percent, and 10 percent consists of state general funds (see Figure 3-5). The cash funds are a mix of payments that include the purchase of a birth or death certificate or a professional license, scholarships and loan repayment programs to attract health professionals to underserved areas, and grants for cancer research. The cash fund category also includes the allocation of tobacco settlement funds which are used to fund local health departments, minority public health projects, and biomedical research. Approximately 41 percent of the Division of Public Health revenues were budgeted for operating expenses in FY 2008. This includes salaries, benefits, printing, travel, equipment purchases, and other expenses. The remaining 59 percent of the budget is distributed as grants and contracts to entities outside DHHS. Of the funds designated for operating expenses, 10 percent originated as general funds, 31 percent as cash funds, and 59 percent as federal funds.

Limitations to Funding Sources Information

Financial information for Nebraska local health departments and the Nebraska DHHS, Division of Public Health was collected from various sources including annual reports, audits, and financial tables. The manner in which the information was reported varied, with different categories among departments. The figures included in this section could best be described as solid estimates of sources of revenue and financial expenditures for local health departments and the Division of Public Health.

FIGURE 3-5

DHHS Division of Public Health Revenues Budgeted for FY 2008

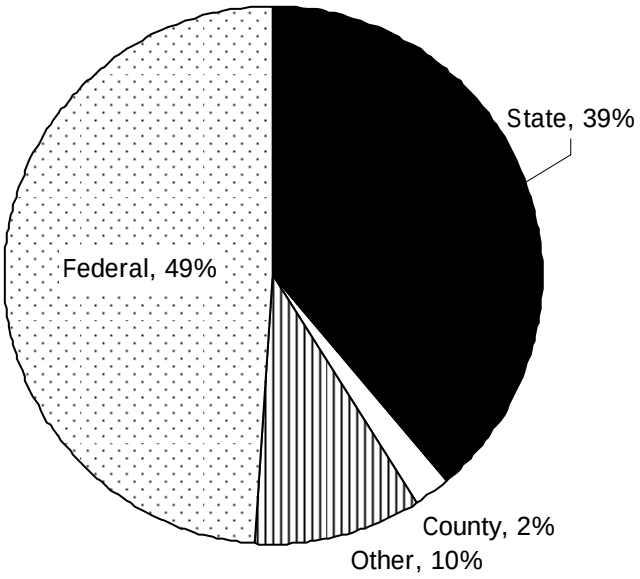


Source: Nebraska Department of Health and Human Services, Division of Public Health, FY 2008 budget.

Local public health agencies have a variety of funding sources as well. Figure 3-6 reflects the sources of revenue for local health departments, excluding Douglas County Health Department (DCHD) and Lincoln-Lancaster County Health Department (LLCHD). Federal funds are the largest source of revenue for local health departments at 49 percent of total funds. Most of these federal funds are monies that DHHS programs receive and pass through to local health departments. One example is the Preventive Health and Health Services (PHHS) Block Grant program, where the state of Nebraska receives PHHS Block Grant funds and distributes funds to local health departments and other entities. Local health departments in Nebraska receive approximately 39 percent of their revenues from state sources. This revenue mainly consists of $5.6 million in Tobacco Settlement funds that the Legislature designated for local health departments through the 2001 Nebraska Health Care Funding Act. It also includes a relatively small amount of state general funds. Central District Health Department and Four Corners District Health Department also receive some revenue from their counties totaling 6 percent of their combined revenues, and 2 percent of the overall local health department revenues.

FIGURE 3-6

Nebraska Local Health Department Revenues* for FY 2006 and/or FY 2007

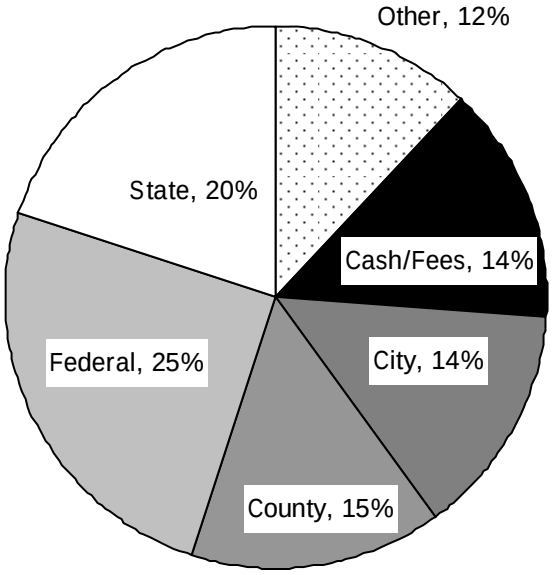


Source: Nebraska local health department financial, annual, and audit reports for FY 2006 and FY 2007.
*Note: This chart represents financial information for fourteen local health departments excluding DCHD and LLCHD that receive funds under the 2001 Health Care Funding Act.

Figure 3-7 shows the sources of revenue for the Douglas County Health Department (DCHD) and the Lincoln-Lancaster County Health Department (LLCHD). The total revenue from these two departments is over two times greater than that of all of the other departments combined. For these two departments, revenues from state sources represent 20 percent of their funds, while federal sources, including federal pass through monies, comprise 25 percent of their funds. The Douglas and Lincoln-Lancaster County Health Departments both receive revenue from their counties (15 percent) as well as from cash or fees charged for inspections, permits, or clinical health services (14 percent). The LLCHD receives a significant amount of revenue from local tax dollars allocated in the city budget process. The city revenue in Figure 3-7 (14 percent) represents only revenue for LLCHD.

FIGURE 3-7

Douglas County Health Department and Lincoln-Lancaster County Health Department Revenues for FY 2006 and/or FY 2007

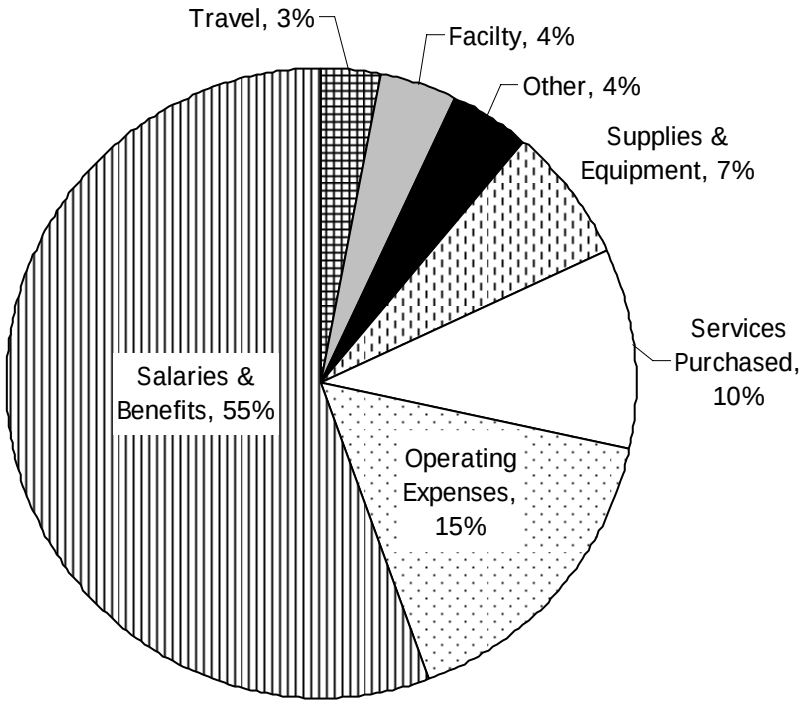


Source: DCHD and LLCHD financial and annual reports for FY 2007 and FY 2006 respectively.

Figure 3-8 shows the expenditures for local health departments, excluding LLCHD and DCHD. The local health departments spend approximately 55 percent of their funds on salaries and benefits for personnel. Although personnel costs comprise a high percentage of the total budget, the staff is responsible for developing and providing almost all programs, activities, and services that local health departments offer to their communities. Some of these include health promotion and prevention programs targeted at problems such as obesity, tobacco use, and alcohol abuse; emergency response planning; disease surveillance and investigation; grant writing; assessment of health needs; and environmental education and response. Operating expenses (e.g., postage, printing expenses, insurance, and project expenses) made up 15 percent of expenditures. Almost 10 percent of local health department funds were used to purchase a variety of services directly. Some examples of services purchased are: dental hygienists to screen children for dental caries; community partnership meetings; West Nile Virus mosquito trapping; and fiscal and human resources services.

FIGURE 3-8

Nebraska Local Health Department Expenditures* for FY 2006 and/or FY 2007

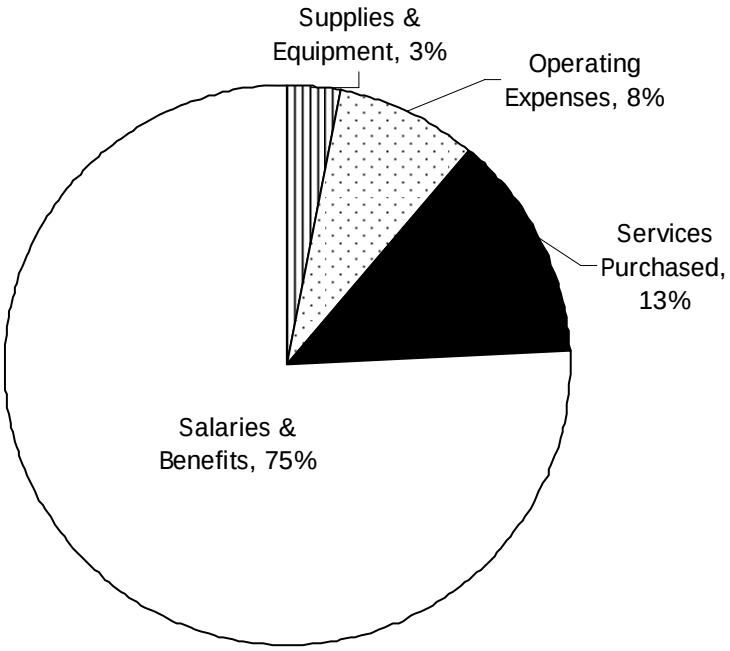


Source: Nebraska local health department financial, annual, and audit reports for FY 2006 and FY 2007.
*Note: This chart represents financial information for fourteen local health departments excluding DCHD and LLCHD that receive funds under the 2001 Health Care Funding Act.

Figure 3-9 represents the expenditures for the LLCHD and DCHD. These departments spent 75 percent of their funds on salaries and benefits, 13 percent on services purchased, 8 percent on operating expenses, and 3 percent on supplies and equipment. Personnel costs for these departments also cover a high percentage of the overall budget. In general, LLCHD and DCHD have larger staffs than other health departments. For example, LLCHD has over 180 full-time equivalents (FTEs). Approximately 110 FTEs are supported by their city and county funds, while the remainder is supported through grants and contracts.

FIGURE 3-9

Douglas County Health Department and Lincoln-Lancaster County Health Department Expenditures for FY 2006 and/or FY 2007



Source: DCHD and LLCHD financial and annual reports for FY 2007 and FY 2006 respectively

State and local public health agencies often rely on "siloed" or categorical funding which is often inflexible. Siloed funding limits public health agencies from focusing on their highest priorities and may even prevent them from using evidence-based planning or best practices. Federal and state governments should work to cluster or consolidate categorical grant funding in order to increase local flexibility to address priority health issues and enhance the use of limited resources.[90] During 2007, several programs in the Nebraska Division of Public Health pooled their resources to provide a funding opportunity to local health departments that had updated their local public health improvement plans. All of the departments identified risk factors for cardiovascular disease (CVD) or cancer as priority health issues. These funds were then used to develop an evidence-based intervention plan and strategies that were aimed at reducing the risk factors for CVD or cancer. These same departments were then able to submit a grant application to receive more funds to implement the plan.

[90]Institute of Medicine (2003). *The future of the public's health in the 21st century*. Washington, DC: The National Academies Press.

Recommendations

1. Establish a regular assessment of Nebraska's public health infrastructure that includes an evaluation of revenues and expenditures. Use the assessment results to evaluate public health capacity and to recommend funding levels. An example of this would be investigating the pros and cons of: increased tobacco and alcohol taxes and passing laws that include additional federal funding upon passage (as was done with the .08 blood alcohol level DUI law that brought additional federal dollars to Nebraska upon passage and as could have been done with the passage of a primary seatbelt law).

2. A task force of state and local health department representatives should be formed to identify opportunities for providing more feasible, combined funding options for local health departments.

3. Local health departments should explore additional methods of obtaining funding including setting funding priorities and writing business plans.

    a. The Department of Health and Human Services, Division of Public Health and the Public Health Association of Nebraska should provide training resources so that public health professionals can learn about business planning for public health programs.

Appendixes

Appendix A
The Core Competencies for Public Health Professionals*

The Core Competencies for Public Health Professionals is a set of skills, knowledge, and attitudes necessary for the broad practice of public health. The Core Competencies can help: 1) Course providers develop and evaluate competency-based training content and curricula; 2) Learners assess and meet their training needs; 3) Practice organizations craft job descriptions, implement staff performance reviews, and assess knowledge and skill gaps of individual employees or of entire organizations; and 4) Public health field develop discipline-specific competencies.

1. Analytic/Assessment Skills

    - Defines a problem
    - Determines appropriate uses and limitations of both quantitative and qualitative data
    - Selects and defines variables relevant to defined public health problems
    - Identifies relevant and appropriate data and information sources
    - Evaluates the integrity and comparability of data and identifies gaps in data sources
    - Applies ethical principles to the collection, maintenance, use, and dissemination of data and information
    - Partners with communities to attach meaning to collected quantitative and qualitative data
    - Makes relevant inferences from quantitative and qualitative data
    - Obtains and interprets information regarding risks and benefits to the community
    - Applies data collection processes, information technology applications, and computer systems storage/retrieval strategies
    - Recognizes how the data illuminates ethical, political, scientific, economic, and overall public health issues

2. Policy Development/Program Planning Skills

    - Collects, summarizes, and interprets information relevant to an issue
    - States policy options and writes clear and concise policy statements
    - Identifies, interprets, and implements public health laws, regulations, and policies related to specific programs
    - Articulates the health, fiscal, administrative, legal, social, and political implications of each policy option
    - States the feasibility and expected outcomes of each policy option
    - Utilizes current techniques in decision analysis and health planning

* *Source*: Public Health Foundation: http://www.phf.org/competencies.htm

- Decides on the appropriate course of action
- Develops a plan to implement policy, including goals, outcome and process objectives, and implementation steps
- Translates policy into organizational plans, structures, and programs
- Prepares and implements emergency response plans
- Develops mechanisms to monitor and evaluate programs for their effectiveness and quality

3. Communication Skills

- Communicates effectively both in writing and orally, or in other ways
- Solicits input from individuals and organizations
- Advocates for public health programs and resources
- Leads and participates in groups to address specific issues
- Uses the media, advanced technologies, and community networks to communicate information
- Effectively presents accurate demographic, statistical, programmatic, and scientific information for professional and lay audiences

Attitudes

- Listens to others in an unbiased manner, respects points of view of others, and promotes the expression of diverse opinions and perspectives

4. Cultural Competency Skills

- Utilizes appropriate methods for interacting sensitively, effectively, and professionally with persons from diverse cultural, socioeconomic, educational, racial, ethnic and professional backgrounds, and persons of all ages and lifestyle preferences
- Identifies the role of cultural, social, and behavioral factors in determining the delivery of public health services
- Develops and adapts approaches to problems that take into account cultural differences

Attitudes

- Understands the dynamic forces contributing to cultural diversity
- Understands the importance of a diverse public health workforce

5. Community Dimensions of Practice Skills

- Establishes and maintains linkages with key stakeholders
- Utilizes leadership, team building, negotiation, and conflict resolution skills to build community partnerships
- Collaborates with community partners to promote the health of the population

- Identifies how public and private organizations operate within a community
- Accomplishes effective community engagements
- Identifies community assets and available resources
- Develops, implements, and evaluates a community public health assessment
- Describes the role of government in the delivery of community health services

6. Basic Public Health Sciences Skills

- Identifies the individual's and organization's responsibilities within the context of the Essential Public Health Services and core functions
- Defines, assesses, and understands the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
- Understands the historical development, structure, and interaction of public health and health care systems
- Identifies and applies basic research methods used in public health
- Applies the basic public health sciences including behavioral and social sciences, biostatistics, epidemiology, environmental public health, and prevention of chronic and infectious diseases and injuries
- Identifies and retrieves current relevant scientific evidence
- Identifies the limitations of research and the importance of observations and interrelationships

Attitudes

- Develops a lifelong commitment to rigorous critical thinking

7. Financial Planning and Management Skills

- Develops and presents a budget
- Manages programs within budget constraints
- Applies budget processes
- Develops strategies for determining budget priorities
- Monitors program performance
- Prepares proposals for funding from external sources
- Applies basic human relations skills to the management of organizations, motivation of personnel, and resolution of conflicts
- Manages information systems for collection, retrieval, and use of data for decision-making
- Negotiates and develops contracts and other documents for the provision of population-based services
- Conducts cost-effectiveness, cost-benefit, and cost-utility analyses

8. Leadership and Systems Thinking Skills

- Creates a culture of ethical standards within organizations and communities
- Helps create key values and shared vision and uses these principles to guide action
- Identifies internal and external issues that may impact delivery of essential public health services (i.e., strategic planning)
- Facilitates collaboration with internal and external groups to ensure participation of key stakeholders
- Promotes team and organizational learning
- Contributes to development, implementation, and monitoring of organizational performance standards
- Uses the legal and political system to effect change
- Applies theory of organizational structures to professional practice

Appendix B
Operational Definition of a Functional Local Health Department
Local Health Department Standards*

1. Monitor health status and understand health issues facing the community.

    a. Obtain and maintain data that provide information on the community's health (e.g., provider immunization rates; hospital discharge data; environmental health hazard, risk, and exposure data; community-specific data; number of uninsured; and indicators of health disparities such as high levels of poverty, lack of affordable housing, limited or no access to transportation, etc).

    b. Develop relationships with local providers and others in the community who have information on reportable diseases and other conditions of public health interest and facilitate information exchange.

    c. Conduct or contribute expertise to periodic community health assessments.

    d. Integrate data with health assessment and data collection efforts conducted by others in the public health system.

    e. Analyze data to identify trends, health problems, environmental health hazards, and social and economic conditions that adversely affect the public's health.

2. Protect people from health problems and health hazards.

    a. Investigate health problems and environmental health hazards.

    b. Prevent, minimize, and contain adverse health events and conditions resulting from communicable diseases; food-, water-, and vector-borne outbreaks; chronic diseases; environmental hazards; injuries; and health disparities.

    c. Coordinate with other governmental agencies that investigate and respond to health problems, health disparities, or environmental health hazards.

    d. Lead public health emergency planning, exercise, and response activities in the community in accordance with the National Incident Management System, and coordinate with other local, state, and federal agencies.

**Source*: "Operational Definition of a Functional Local Health Department," Washington, DC: National Association of County and City Health Officials, November 2005.

e. Fully participate in planning, exercises, and response activities for other emergencies in the community that have public health implications, within the context of state and regional plans and in a manner consistent with the community's best public health interests.

f. Maintain access to laboratory and biostatistical expertise and capacity to help monitor community health status and diagnose and investigate public health problems and hazards.

g. Maintain policies and technology required for urgent communications and electronic data exchange.

3. Give people information they need to make healthy choices.

   a. Develop relationships with the media to convey information of public health significance, correct misinformation about public health issues, and serve as an essential resource.

   b. Exchange information and data with individuals, community groups, other agencies, and the general public about physical, behavioral, environmental, social, economic, and other issues affecting the public's health.

   c. Provide targeted, culturally appropriate information to help individuals understand what decisions they can make to be healthy.

   d. Provide health promotion programs to address identified health problems.

4. Engage the community to identify and solve health problems.

   a. Engage the local public health system in an ongoing, strategic, community-driven, comprehensive planning process to identify, prioritize, and solve public health problems; establish public health goals; and evaluate success in meeting the goals.

   b. Promote the community's understanding of, and advocacy for, policies and activities that will improve the public's health.

   c. Support, implement, and evaluate strategies that address public health goals in partnership with public and private organizations.

   d. Develop partnerships to generate interest in and support for improved community health status, including new and emerging public health issues.

e. Inform the community, governing bodies, and elected officials about governmental public health services that are being provided, improvements being made in those services, and priority health issues not yet being adequately addressed.

5. Develop public health policies and plans.

    a. Serve as a primary resource to governing bodies and policymakers to establish and maintain public health policies, practices, and capacity based on current science and best practices.

    b. Advocate for policies that lessen health disparities and improve physical, behavioral, environmental, social, and economic conditions in the community that affect the public's health.

    c. Engage in local health department (LHD) strategic planning to develop a vision, mission, and guiding principles that reflect the community's public health needs, and to prioritize services and programs.

6. Enforce public health laws and regulations.

    a. Review existing laws and regulations and work with governing bodies and policymakers to update them as needed.

    b. Understand existing laws, ordinances, and regulations that protect the public's health.

    c. Educate individuals and organizations on the meaning, purpose, and benefit of public health laws, regulations, and ordinances and how to comply.

    d. Monitor, and analyze over time, the compliance of regulated organizations, entities, and individuals.

    e. Conduct enforcement activities.

    f. Coordinate notification of violations among other governmental agencies that enforce laws and regulations that protect the public's health.

7. Help people receive health services.

    a. Engage the community to identify gaps in culturally competent, appropriate, and equitable personal health services, including preventive and health promotion services, and develop strategies to close the gaps.

b. Support and implement strategies to increase access to care and establish systems of personal health services, including preventive and health promotion services, in partnership with the community.

c. Link individuals to available, accessible personal health care providers (i.e., a medical home).

8. Maintain a competent public health workforce.

   a. Recruit, train, develop, and retain a diverse staff.

   b. Evaluate LHD staff members' public health competencies, and address deficiencies through continuing education, training, and leadership development activities.

   c. Provide practice- and competency-based educational experiences for the future public health workforce, and provide expertise in developing and teaching public health curricula, through partnerships with academia.

   d. Promote the use of effective public health practices among other practitioners and agencies engaged in public health interventions.

   e. Provide the public health workforce with adequate resources to do their jobs.

9. Evaluate and improve programs and interventions.

   a. Develop evaluation efforts to assess health outcomes to the extent possible.

   b. Apply evidence-based criteria to evaluation activities where possible.

   c. Evaluate the effectiveness and quality of all LHD programs and activities and use the information to improve LHD performance and community health outcomes.

   d. Review the effectiveness of public health interventions provided by other practitioners and agencies for prevention, containment, and/or remediation of problems affecting the public's health, and provide expertise to those interventions that need improvement.

10. Contribute to and apply the evidence base of public health.

    a. When researchers approach the LHD to engage in research activities that benefit the health of the community,

       1) Identify appropriate populations, geographic areas, and partners;

2) Work with them to actively involve the community in all phases of research;
3) Provide data and expertise to support research; and
4) Facilitate their efforts to share research findings with the community, governing bodies, and policymakers.

b. Share results of research, program evaluations, and best practices with other public health practitioners and academics.

c. Apply evidence-based programs and best practices where possible.

Appendix C
Coordinated School Health Program

What is CSHP?

A coordinated school health program (CSHP) model consists of eight interactive components. Schools by themselves cannot—and should not be expected to—solve the nation's most serious health and social problems. Families, health care workers, the media, religious organizations, community organizations that serve youth, and young people themselves also must be systematically involved. However, schools could provide a critical facility in which many agencies might work together to maintain the well-being of young people.

Eight Component Model

The following are working descriptions* of the eight components of a coordinated school health program.

*The above descriptions were adapted from multiple sources including:

Allensworth DD, Kolbe LJ. The comprehensive school health program: exploring an expanded concept. *Journal of School Health* 1987; 57(10): 409–12.

Institute of Medicine. *Schools and Health: Our Nation's Investment.* Washington, DC: National Academy Press. 1997.

Marx E, Wooley SF, Northrop D. "Health Is Academic: A Guide To Coordinated School Health Programs." Teachers College Press, 1998.

1. Health Education: A planned, sequential, K-12 curriculum that addresses the physical, mental, emotional and social dimensions of health. The curriculum is designed to motivate and assist students to maintain and improve their health, prevent disease, and reduce health-related risk behaviors. It allows students to develop and demonstrate increasingly sophisticated health-related knowledge, attitudes, skills, and practices. The comprehensive health education curriculum includes a variety of topics such as personal health, family health, community health, consumer health, environmental health, sexuality education, mental and emotional health, injury prevention and safety, nutrition, prevention and control of disease, and substance use and abuse. Qualified, trained teachers provide health education.

2. Physical Education: A planned, sequential K-12 curriculum that provides cognitive content and learning experiences in a variety of activity areas such as basic movement skills; physical fitness; rhythms and dance; games; team, dual, and individual sports; tumbling and gymnastics; and aquatics. Quality physical education should promote, through a variety of planned physical activities, each student's optimum physical, mental, emotional, and social development, and should promote activities and sports that all students enjoy and can pursue throughout their lives. Qualified, trained teachers teach physical activity.

3. Health Services: Services provided for students to appraise, protect, and promote health. These services are designed to ensure access or referral to primary health care services or both, foster appropriate use of primary health care services, prevent and control communicable disease and other health problems, provide emergency care for illness or injury, promote and provide optimum sanitary conditions for a safe school facility and school environment, and provide educational and counseling opportunities for promoting and maintaining individual, family, and community health. Qualified professionals such as physicians, nurses, dentists, health educators, and other allied health personnel provide these services.

4. Nutrition Services: Access to a variety of nutritious and appealing meals that accommodate the health and nutrition needs of all students. School nutrition programs reflect the U.S. Dietary Guidelines for Americans and other criteria to achieve nutrition integrity. The school nutrition services offer students a learning laboratory for classroom nutrition and health education, and serve as a resource for linkages with nutrition-related community services. Qualified child nutrition professionals provide these services.

5. Counseling and Psychological Services: Services provided to improve students' mental, emotional, and social health. These services include individual and group assessments, interventions, and referrals. Organizational assessment and consultation skills of counselors and psychologists contribute not only to the health of students but also to the health of the school environment. Professionals such as

certified school counselors, psychologists, and social workers provide these services.

6. Healthy School Environment: The physical and aesthetic surroundings and the psychosocial climate and culture of the school. Factors that influence the physical environment include the school building and the area surrounding it, any biological or chemical agents that are detrimental to health, and physical conditions such as temperature, noise, and lighting. The psychological environment includes the physical, emotional, and social conditions that affect the well-being of students and staff.

7. Health Promotion for Staff: Opportunities for school staff to improve their health status through activities such as health assessments, health education and health-related fitness activities. These opportunities encourage school staff to pursue a healthy lifestyle that contributes to their improved health status, improved morale, and a greater personal commitment to the school's overall coordinated health program. This personal commitment often transfers into greater commitment to the health of students and creates positive role modeling. Health promotion activities have improved productivity, decreased absenteeism, and reduced health insurance costs.

8. Family/Community Involvement: An integrated school, parent, and community approach for enhancing the health and well-being of students. School health advisory councils, coalitions, and broadly based constituencies for school health can build support for school health program efforts. Schools actively solicit parent involvement and engage community resources and services to respond more effectively to the health-related needs of students.

Appendix D
National Standards on Culturally and Linguistically Appropriate Services (CLAS)

The CLAS standards* are primarily directed at health care organizations; however, individual providers are also encouraged to use the standards to make their practices more culturally and linguistically accessible. The principles and activities of culturally and linguistically appropriate services should be integrated throughout an organization and undertaken in partnership with the communities being served.

The 14 standards are organized by themes: Culturally Competent Care (Standards 1-3), Language Access Services (Standards 4-7), and Organizational Supports for Cultural Competence (Standards 8-14). Within this framework, there are three types of standards of varying stringency: mandates, guidelines, and recommendations as follows:

CLAS mandates are current Federal requirements for all recipients of Federal funds (Standards 4, 5, 6, and 7).

CLAS guidelines are activities recommended by OMH for adoption as mandates by Federal, State, and national accrediting agencies (Standards 1, 2, 3, 8, 9, 10, 11, 12, and 13).

CLAS recommendations are suggested by OMH for voluntary adoption by health care organizations (Standard 14).

Standard 1
Health care organizations should ensure that patients/consumers receive from all staff member's effective, understandable, and respectful care that is provided in a manner compatible with their cultural health beliefs and practices and preferred language.

Standard 2
Health care organizations should implement strategies to recruit, retain, and promote at all levels of the organization a diverse staff and leadership that are representative of the demographic characteristics of the service area.

* *Source*: U.S. Department of Health and Human Services, Office of Minority Health (2007). *National standards on culturally and linguistically appropriate services (CLAS)*. Retrieved August 13, 2007, from http://www.omhrc.gov/templates/browse.aspx?lvl=2&lvlID=15

Standard 3
Health care organizations should ensure that staff at all levels and across all disciplines receive ongoing education and training in culturally and linguistically appropriate service delivery.

Standard 4
Health care organizations must offer and provide language assistance services, including bilingual staff and interpreter services, at no cost to each patient/consumer with limited English proficiency at all points of contact, in a timely manner during all hours of operation.

Standard 5
Health care organizations must provide to patients/consumers in their preferred language both verbal offers and written notices informing them of their right to receive language assistance services.

Standard 6
Health care organizations must assure the competence of language assistance provided to limited English proficient patients/consumers by interpreters and bilingual staff. Family and friends should not be used to provide interpretation services (except on request by the patient/consumer).

Standard 7
Health care organizations must make available easily understood patient-related materials and post signage in the languages of the commonly encountered groups and/or groups represented in the service area.

Standard 8
Health care organizations should develop, implement, and promote a written strategic plan that outlines clear goals, policies, operational plans, and management accountability/oversight mechanisms to provide culturally and linguistically appropriate services.

Standard 9
Health care organizations should conduct initial and ongoing organizational self-assessments of CLAS-related activities and are encouraged to integrate cultural and linguistic competence-related measures into their internal audits, performance improvement programs, patient satisfaction assessments, and outcomes-based evaluations.

Standard 10
Health care organizations should ensure that data on the individual patient's/consumer's race, ethnicity, and spoken and written language are collected in health records,

integrated into the organization's management information systems, and periodically updated.

Standard 11
Health care organizations should maintain a current demographic, cultural, and epidemiological profile of the community as well as a needs assessment to accurately plan for and implement services that respond to the cultural and linguistic characteristics of the service area.

Standard 12
Health care organizations should develop participatory, collaborative partnerships with communities and utilize a variety of formal and informal mechanisms to facilitate community and patient/consumer involvement in designing and implementing CLAS-related activities.

Standard 13
Health care organizations should ensure that conflict and grievance resolution processes are culturally and linguistically sensitive and capable of identifying, preventing, and resolving cross-cultural conflicts or complaints by patients/consumers.

Standard 14
Health care organizations are encouraged to regularly make available to the public information about their progress and successful innovations in implementing the CLAS standards and to provide public notice in their communities about the availability of this information.