Rural Health Institute

November 4-8, 2002
Shocco Springs Baptist Conference Center
Talladega, Alabama

Sponsored by

SOUTHERN RURAL DEVELOPMENT CENTER
SRDC
## Agenda

### Day 1: Monday, November 4, 2002

- **p.m.**
  - 1:00  Participant Introductions and Overview of Southern Health Institute  
    - Martha Johnson
    - Linda Patterson
  - 3:00  Break
  - 3:30  Organization of the Health System in the United States  
    - Linda Patterson
    - Bonnie Carew
    - John Wheat
  - 6:00  Dinner

### Day 2: Tuesday, November 5, 2002

- **a.m.**
  - 8:00  Language of Health  
    - Barbara Garland
  - 10:00  Break
  - 10:30  Community Health Assessment/Vital Statistics  
    - Barbara Garland
    - Kathleen Tajeu
    - Bo Beaulieu
    - Rick Maurer
  - **p.m.**
    - 12:00  Lunch
  - 1:00  Community Health Assessment (continued)
  - 6:00  Dinner

### Day 3: Wednesday, November 6, 2002

- **a.m.**
  - 8:00  Community Health Assessment (continued)
  - 9:30  Break

### Day 4: Thursday, November 7, 2002

- **a.m.**
  - 8:00  Helping Decision-Makers Maintain Primary Health Care Services in Rural Counties  
    - Gerald Doeksen
    - Val Schott
  - 9:30  Break
  - 10:00  Helping Decision-Makers (continued)
  - 11:30  Lunch
  - **p.m.**
    - 12:30  Designing Effective Health Education Programs (Planning, Implementing and Evaluating)  
      - Bobbi Clarke
      - Kathleen Tajeu
      - Peggy Hickman
  - 6:00  Dinner

### Day 5: Friday, November 8, 2002

- **a.m.**
  - 8:00  Designing Effective Health Education (continued)
  - 9:30  Break
  - 10:00  Designing Effective-Health Education (continued)
  - 11:00  Evaluations and Wrap-Up
  - 11:30  Adjourn
BO BEAULIEU is director of the Southern Rural Development Center located at Mississippi State University. He has been involved in community development research and Extension education activities for over 26 years. His work has concentrated on leadership development, public policy education, needs assessment and social capital.

BONNIE CAREW is rural health policy coordinator for Mississippi State University Extension Service, where she oversees the Mississippi Rural Health Corps and directs a program for high school students interested in pursuing medical careers. Prior to joining Extension, she managed a health research program at the University of Alabama at Birmingham. She has 15 years management experience in private industry.

TRACY CARTER is the Project Director for Covering Alabama Kids & Families, a new four-year initiative of the Robert Wood Johnson Foundation. It is a joint endeavor of the University of Alabama's College of Human Environmental Sciences and College of Community Health Sciences designed to link eligible, uninsured children with health coverage opportunities in Alabama. She holds a master’s degree in Human Development and Family Studies from The University of Alabama. Her primary research interests are in children's health care access with a focus on community and rural challenges/ responses to health care access. Currently, she resides in Tuscaloosa with several four-legged children and is a doctoral student in Health Education and Health Promotion.

BOBBI CLARKE is a professor and health specialist with the University of Tennessee Extension Service. She co-directs the UT Center for Community-Based Health Initiatives. Her expertise is in health education program planning, delivery, collaboration and evaluation across different ages. She has worked in a variety of health organizations at the county, state and national levels for more than 20 years.

GERALD DOEKSEN is a regents professor and Extension economist with Oklahoma State University. He has been a pioneer in developing and applying community service and community impact models. His models have been adopted in many states. He will equip conference attendees with health models that can be used immediately in their own states.

BARBARA GARLAND is a professor and rural health program coordinator with North Carolina State University Cooperative Extension. She has had a long career in public health practice, research and teaching. Her teaching experience includes a decade of teaching epidemiology in a medical school. Most recently, she has served as principal investigator for an eight-year, NCI sponsored community intervention study to determine if Cooperative Extension personnel could be instrumental in building successful community cancer control coalitions.

PEGGY HICKMAN is an associate professor at the University of Kentucky College of Nursing, an associate of the University of Kentucky Center for Excellence in Rural Health, and author of numerous publications and presentations. In her teaching and applied research, she uses her background in public health, nursing, community development and health education to promote health and prevent disease/injury in rural communities.

MARTHA JOHNSON is Extension state program leader for the Alabama Cooperative Extension System. She is responsible for family programs in Alabama, is co-chair for Healthy People Healthy Communities National Initiative, director of National Issues Forum Public Policy Institute in Alabama for 2000, co-chair of the workshop on accountability for Health and Family Resource Management, and is actively involved in the Health SERA (Southern Extension Research Activity).
RICK MAURER is assistant director of Cooperative Extension Service for Rural and Economic Development Programs and professor, department of sociology, University of Kentucky College of Agriculture. His Extension and research areas include rural, community and economic development. He serves as coordinator for the Kentucky Economic Expansion Program (KEEP) along with BellSouth and the Cabinet for Economic Development and as a member of the executive committee of the Certified Communities Partnership Program.

LINDA PATTERSON has been an Extension health specialist with Mississippi State University’s Extension Service since 1993. She is a registered nurse with extensive experience in health care and health education, wellness, and health consumer development. She has authored over 40 health education publications for Extension clientele and a review of health education and behavioral models. Patterson received her bachelor's degree in nursing and her master's degree in adult health promotion from the University of Alabama-Birmingham.

CAROLYN PERKINS is the health coordinator for the Cooperative Extension Program at Prairie View A&M University, Prairie View, Texas. She has over 25 years of experience with Extension, including 17 years as a 4-H club agent. She also served as an Extension Home Economist prior to assuming her role as Health Specialist/Coordinator. She is a member of the National Healthy People Healthy Communities Initiative Team, the National Leadership Council and has conducted numerous presentations on "Building Healthy Communities."

JOE SCHMIDT is a community development specialist with the Mississippi State University Extension Service. He provides community development educational and technical services to county Extension staff and local communities and organizations. He has worked in the Extension Service for over 23 years. His specialties include strategic planning, business financial management and grant writing. Along with Neal Jones and David Lightwine, he helped establish the Mississippi Rural Health Association. He has two degrees from Mississippi State University in Agricultural Economics and a PhD in Agricultural Economics from Oklahoma State University.

VAL SCHOTT is president-elect of the National Rural Health Association (NRHA) and serves as the director of the Oklahoma Office of Rural Health. He has held positions as Legislative Liaison and HIV/STD Service Chief for the Oklahoma State Department of Health. Prior to his work at the state health department, he worked as assistant administrator of Oklahoma Medical Center, the state teaching hospital, and is a member of the Board of Directors of the City-County Health Department of Oklahoma County.

KATHLEEN TAJEU has served for eight years as community health specialist with Alabama Cooperative Extension System. In her current role, she has co-developed breast cancer education programs, partnered with other state agencies to deliver technical assistance workshops on community-based approaches to health promotion, served on the Extension Healthy People Healthy Communities National Initiative team, and contributed to the Extension National Network for Health's Evaluation Capacity-Building efforts. Before coming to Alabama, she held positions with Cornell Cooperative Extension, the University of Illinois' Kellogg-funded Community-based Health Programs Cluster Evaluation Team, the Department of Health Education at East Tennessee State University, and the Cayuga-Tompkins Healthy Heart Program.

JOHN WHEAT is professor in the department of community and rural medicine at the University of Alabama in Tuscaloosa. He also serves as director of the Rural Medicine Scholars Program at the University of Alabama. Dr. Wheat has been published in numerous medical journals and has received certification with the American Board of Internal Medicine, American Board of Preventive Medicine, GPM/PH, and the American Board of Preventive Medicine, OEM.
Goal
The Southern Region Health Institute is designed to provide Extension agents with a unique opportunity to be an active participant in an intensive state-of-the-art training program related to health. It is designed to provide participants with an increased understanding of:

- health systems,
- Extension's role in health, and
- tools and strategies for working with individuals, families and communities on health issues.

Who Are We?
- Introductions

What Is Health?
- WHO definition
- Whole people and quality of life issues

Who Is Involved?
- Health care providers
- Health care consumers
- Citizens and officials
- Community members/leaders/employers
- Individuals/families
- Third party payers

What Is a Health System?
- Healthcare delivery
- Private vs. public
- Federal, state, community
- Managed care
- Health education
- Disease prevention, early detection, diagnosis and treatment
- Social/Environmental support for healthy habits, mental health, healthy growth and development
- Community health determinants
- Healthcare reimbursement

Why Are We Here?
- What is community?
  - Activity: Gordian Knot

The Historical Perspective: How Did We Get to this Place in Time?
- Public health
Extension's Roles
There are provider-driven elements, individual health issues, official policies, and consumer-driven elements in the health system. Extension’s role in community health is primarily that of facilitator to bring the elements together for a strategic process resulting in healthier people and communities:

- Balanced, non-biased information related to current community, state and national health issues and
- Research-based education and skills training for identified populations on individual health concerns.

National Health Status: Healthy People 2010
To completely understand the health status of a population, it is essential to monitor and evaluate the consequences of the determinants of health.

The health status of the United States is a description of the health of the total population using information that is representative of most people living in this country. For relatively small population groups, however, it may not be possible to draw accurate conclusions about their health using current data collection methods. The goal of eliminating health disparities will necessitate improved collection and use of standardized data to correctly identify disparities among select population groups.
Health status can be measured by birth and death rates, life expectancy, quality of life, morbidity from specific diseases, risk factors, use of ambulatory care and inpatient care, accessibility of health personnel and facilities, financing of health care, health insurance coverage, and many other factors. The information used to report health status comes from a variety of sources, including birth and death records, hospital discharge data, and health information collected from health care records, personal interviews, physical examinations and telephone surveys. These measures are monitored on an annual basis in the United States and are reported in a variety of publications, including Health, United States and Healthy People Reviews.

The leading causes of death are frequently used to describe the health status of the nation. The nation has seen a great deal of change over the past 100 years in the leading causes of death. At the beginning of the 1900s, infectious diseases ran rampant in the United States and worldwide and topped the leading causes of death. A century later, with the control of many infectious agents and the increasing age of the population, chronic diseases top the list.

A very different picture emerges when the leading causes of death are viewed for various subgroups. Unintentional injuries, mainly motor vehicle crashes, are the fifth leading cause of death for the total population, but they are the leading cause of death for people aged 1 to 44 years. Similarly, HIV/AIDS is the 14th leading cause of death for the total population but the leading cause of death for African American men aged 25 to 44 years.

The leading causes of death in the United States generally result from a mix of behaviors; injury, violence and other factors in the environment; and the unavailability or inaccessibility of quality health services. Understanding and monitoring behaviors, environmental factors and community health systems may prove more useful to monitoring the nation’s true health, and in driving health improvement activities, than the death rates that reflect the cumulative impact of these factors. This approach has served as the basis for developing the Leading Health Indicators.

**Healthy People 2010 Goals**

**Goal 1: Increase Quality and Years of Healthy Life**
The first goal of Healthy People 2010 is to help individuals of all ages increase life expectancy and improve their quality of life.

**Life Expectancy**
Life expectancy is the average number of years people born in a given year are expected to live based on a set of age-specific death rates. At the beginning of the 20th century, life expectancy at birth was 47.3 years. Fortunately,
life expectancy has dramatically increased over the past 100 years. Today, the average life expectancy at birth is nearly 77 years.

Life expectancy for persons in every age group has also increased during the past century. Based on today's age-specific death rates, individuals aged 65 years can be expected to live an average of 18 more years, for a total of 83 years. Those aged 75 years can be expected to live an average of 11 more years, for a total of 86 years.

Differences in life expectancy between populations, however, suggest a substantial need and opportunity for improvement. At least 18 countries with populations of one million or more have life expectancies greater than the United States for both men and women.

There are substantial differences in life expectancy among different population groups within the United States. For example, women outlive men by an average of 6 years. White women currently have the greatest life expectancy in the United States. The life expectancy for African American women has risen to be higher today than that for white men. People from households with an annual income of at least $25,000 live an average of 3 to 7 years longer, depending on gender and race, than people from households with annual incomes of less than $10,000.

Quality of Life
Quality of life reflects a general sense of happiness and satisfaction with our lives and environment. General quality of life encompasses all aspects of life including health, recreation, culture, rights, values, beliefs, aspirations, and the conditions that support a life containing these elements. Health-related quality of life reflects a personal sense of physical and mental health and the ability to react to factors in the physical and social environments. Health-related quality of life is inherently more subjective than life expectancy and, therefore, can be more difficult to measure. Some tools, however, have been developed to measure health-related quality of life.

- Global assessments, in which a person rates his or her health as "poor," "fair," "good," "very good," or "excellent," can be reliable indicators of a person's perceived health. In 1996, 90 percent of people in the United States reported their health as good, very good or excellent.

- Healthy days is another measure of health-related quality of life that estimates the number of days of poor physical and mental health in the past 30 days. In 1998, 82 percent of adults reported having no days in the past month where poor physical or mental health impaired their usual activities. The proportions of days that are reported "unhealthy" are the
result more often of mentally unhealthy days for younger adults and physically unhealthy days for older adults.

- Years of healthy life is a combined measure developed for the Healthy People initiative. The difference between life expectancy and years of healthy life reflects the average amount of time spent in less than optimal health because of chronic or acute limitations. After decreasing in the early 1990s, years of healthy life increased to a level in 1996 that was only slightly above that at the beginning of the decade (64.0 years in 1990 to 64.2 years in 1996). During the same period, life expectancy increased a full year.

- As with life expectancy, various population groups can show dramatic differences in quality of life. For example, people in the lowest income households are five times more likely to report their health as fair or poor than people in the highest income households (see figure 3). A higher percentage of women report their health as fair or poor compared to men. Adults in rural areas are 36 percent more likely to report their health status as fair or poor than are adults in urban areas.

Achieving a Longer and Healthier Life - The Healthy People Perspective
Healthy People 2010 seeks to increase life expectancy and quality of life over the next 10 years by helping individuals gain the knowledge, motivation and opportunities they need to make informed decisions about their health. At the same time, Healthy People 2010 encourages local and state leaders to develop community and statewide efforts that promote healthy behaviors, create healthy environments, and increase access to high-quality health care. Given the fact that individual and community health are virtually inseparable, it is critical that both the individual and the community do their parts to increase life expectancy and improve quality of life.

Goal 2: Eliminate Health Disparities
The second goal of Healthy People 2010 is to eliminate health disparities among different segments of the population.

These include differences that occur by gender, race or ethnicity; education or income; disability; living in rural localities; or sexual orientation. This section highlights ways in which health disparities can occur among various demographic groups in the United States.

Gender
Whereas some differences in health between men and women are the result of biological differences, others are more complicated and require greater attention and scientific exploration. Some health differences are obviously gender specific, such as cervical and prostate cancers.
Overall, men have a life expectancy that is 6 years less than women and have higher death rates for each of the 10 leading causes of death. For example, men are two times more likely than women to die from unintentional injuries and four times more likely than women to die from firearm-related injuries. Although overall death rates for women may currently be lower than for men, women have shown increased death rates over the past decade in areas where men have experienced improvements, such as lung cancer. Women are also at greater risk for Alzheimer’s disease than men and twice as likely as men to be affected by major depression.

Race and Ethnicity
Current information about the biologic and genetic characteristics of African Americans, Hispanics, American Indians, Alaska Natives, Asians, Native Hawaiians, and Pacific Islanders does not explain the health disparities experienced by these groups compared with the white, non-Hispanic population in the United States. These disparities are believed to be the result of the complex interaction among genetic variations, environmental factors and specific health behaviors.

Even though the nation’s infant mortality rate is down, the infant death rate among African Americans is still more than double that of whites. Heart disease death rates are more than 40 percent higher for African Americans than for whites. The death rate for all cancers is 30 percent higher for African Americans than for whites; for prostate cancer, it is more than double that for whites. African American women have a higher death rate from breast cancer despite having a mammography screening rate that is higher than that for white women. The death rate from HIV/AIDS for African Americans is more than seven times that for whites; the rate of homicide is six times that for whites.

Hispanics living in the United States are almost twice as likely to die from diabetes than are non-Hispanic whites. Although constituting only 11 percent of the total population in 1996, Hispanics accounted for 20 percent of the new cases of tuberculosis. Hispanics also have higher rates of high blood pressure and obesity than non-Hispanic whites. There are differences among Hispanic populations as well. For example, whereas the rate of low-birth-weight infants is lower for the total Hispanic population compared with whites, Puerto Ricans have a low-birth-weight rate that is 50 percent higher than that for whites.

American Indians and Alaska Natives have an infant death rate almost double that for whites. The rate of diabetes for this population group is more than twice that for whites. The Pima of Arizona have one of the highest rates of diabetes in the world. American Indians and Alaska Natives also have disproportionally high death rates from unintentional injuries and suicide.
Asians and Pacific Islanders, on average, have indicators of being one of the healthiest population groups in the United States. However, there is great diversity within this population group, and health disparities for some specific groups are quite marked. Women of Vietnamese origin, for example, suffer from cervical cancer at nearly five times the rate for white women. New cases of hepatitis and tuberculosis are also higher in Asians and Pacific Islanders living in the United States than in whites.

**Income and Education**

Inequalities in income and education underlie many health disparities in the United States. Income and education are intrinsically related and often serve as proxy measures for each other. In general, population groups that suffer the worst health status are also those that have the highest poverty rates and least education. Disparities in income and education levels are associated with differences in the occurrence of illness and death, including heart disease, diabetes, obesity, elevated blood lead level, and low birth weight. Higher incomes permit increased access to medical care, enable one to afford better housing and live in safer neighborhoods, and increase the opportunity to engage in health-promoting behaviors.

Income inequality in the United States has increased over the past three decades. There are distinct demographic differences in poverty by race, ethnicity and household composition as well as geographical variations in poverty across the United States. Recent health gains for the U.S. population as a whole appear to reflect achievements among the higher socioeconomic groups; lower socioeconomic groups continue to lag behind.

Overall, those with higher incomes tend to fare better than those with lower incomes. For example, among white men aged 65 years, those in the highest income families could expect to live more than 3 years longer than those in the lowest income families. The percentage of people in the lowest income families reporting limitation in activity caused by chronic disease is three times that of people in the highest income families.

The average level of education in the U.S. population has steadily increased over the past several decades - an important achievement given that more years of education usually translate into more years of life. For women, the amount of education achieved is a key determinant of the welfare and survival of their children. Higher levels of education may also increase the likelihood of obtaining or understanding health-related information needed to develop health-promoting behaviors and beliefs in prevention.

But again, educational attainment differs by race and ethnicity. Among people aged 25 to 64 years in the United States, the overall death rate for those with less than 12 years of education is more than twice that for people with 13 or
more years of education. The infant mortality rate is almost double for infants of mothers with less than 12 years of education when compared with those with an education of 13 or more years.

Disability
People with disabilities are identified as persons having an activity limitation, who use assistance, or who perceive themselves as having a disability. In 1994, 54 million people in the United States, or roughly 21 percent of the population, had some level of disability. Although rates of disability are relatively stable or falling slightly for people aged 45 years and older, rates are on the rise among the younger population. People with disabilities tend to report more anxiety, pain, sleeplessness and days of depression and fewer days of vitality than do people without activity limitations. People with disabilities also have other disparities, including lower rates of physical activity and higher rates of obesity. Many people with disabilities lack access to health services and medical care.

Rural Localities
Twenty-five percent of Americans live in rural areas, that is, places with fewer than 2,500 residents. Injury-related death rates are 40 percent higher in rural populations than in urban populations. Heart disease, cancer and diabetes rates exceed those for urban areas. People living in rural areas are less likely to use preventive screening services, exercise regularly or wear seat belts. In 1996, 20 percent of the rural population was uninsured compared with 16 percent of the urban population. Timely access to emergency services and the availability of specialty care are other issues for this population group.

Sexual Orientation
America’s gay and lesbian population comprises a diverse community with disparate health concerns. Major health issues for gay men are HIV/AIDS and other sexually transmitted diseases, substance abuse, depression, and suicide. Gay male adolescents are two to three times more likely than their peers to attempt suicide. Some evidence suggests lesbians have higher rates of smoking, obesity, alcohol abuse, and stress than heterosexual women. The issues surrounding personal, family and social acceptance of sexual orientation can place a significant burden on mental health and personal safety.

Achieving Equity - The Healthy People Perspective
Although the diversity of the American population may be one of our nation’s greatest assets, diversity also presents a range of health improvement challenges - challenges that must be addressed by individuals, the community and state in which they live, and the nation as a whole.

Healthy People 2010 recognizes that communities, states and national organizations will need to take a multidisciplinary approach to achieving health equity.
that involves improving health, education, housing, labor, justice, transportation, agriculture, and the environment. However, our greatest opportunities for reducing health disparities are in empowering individuals to make informed health care decisions and in promoting community-wide safety, education and access to health care.

Healthy People 2010 is firmly dedicated to the principle that regardless of age, gender, race, ethnicity, income, education, geographic location, disability and sexual orientation every person in every community across the nation deserves equal access to comprehensive, culturally competent, community-based health care systems that are committed to serving the needs of the individual and promoting community health.

Healthy People 2010 Objectives
The nation's progress in achieving the two goals of Healthy People 2010 will be monitored through 467 objectives in 28 focus areas and distributed as the publication, Healthy People 2010: Objectives for Improving Health. Many objectives focus on interventions designed to reduce or eliminate illness, disability and premature death among individuals and communities. Others focus on broader issues such as improving access to quality health care, strengthening public health services, and improving the availability and dissemination of health-related information. Each objective has a target for specific improvements to be achieved by the year 2010.

Together, these objectives reflect the depth of scientific knowledge as well as the breadth of diversity in the nation's communities. More importantly, they are designed to help the nation achieve its two overarching goals and realize the vision of healthy people living in healthy communities.

In addition, Healthy People 2010: Objectives for Improving Health provides an overview of the issues, trends and opportunities for action in each of the 28 focus areas. It also contains detailed language of each objective, the rationale behind its focus, the target for the year 2010, and national data tables of its measures.

Access to Health Care
Strong predictors of access to quality health care include having health insurance, a higher income level, and a regular primary care provider or other source of ongoing health care. Use of clinical preventive services, such as early prenatal care, can serve as indicators of access to quality health care services.

In 1997, 86 percent of all individuals had health insurance, and 86 percent had a usual source of health care. Also in that year, 83 percent of pregnant women received prenatal care in the first trimester of pregnancy.
Some examples of access objectives are listed below. These are only indicators and do not represent all the access to quality health care objectives in Healthy People 2010.

- 1-1. Increase the proportion of persons with health insurance.
- 1-4a. Increase the proportion of persons who have a specific source of ongoing care.
- 16-6a. Increase the proportion of pregnant women who begin prenatal care in the first trimester of pregnancy.

Health Insurance
Health insurance provides access to health care. Persons with health insurance are more likely to have a primary care provider and to have received appropriate preventive care such as a recent Pap test, immunization or early prenatal care. Adults with health insurance are twice as likely to receive a routine checkup as are adults without health insurance.

More than 44 million persons in the United States do not have health insurance, including 11 million uninsured children. Over the past decade, the proportion of persons aged 65 years and under with health insurance remained steady at about 85 percent. About one-third of adults 65 years and under who are below the poverty level were uninsured. For persons of Hispanic origin, approximately one in three was without health insurance coverage in 1997. Mexican Americans had one of the highest uninsured rates at 38 percent.

Ongoing Sources of Primary Care
More than 40 million Americans do not have a particular doctor's office, clinic, health center or other place where they usually go to seek health care or health-related advice. Even among privately insured persons, a significant number lacked a usual source of care or reported difficulty in accessing needed care due to financial constraints or insurance problems. People aged 18 to 24 years were the most likely to lack a usual source of ongoing primary care. Only 76 percent of individuals below the poverty level and 74 percent of Hispanics had a usual source of ongoing primary care.

Barriers to Access
Financial, structural and personal barriers can limit access to health care. Financial barriers include not having health insurance, not having enough health insurance to cover needed services, or not having the financial capacity to cover services outside a health plan or insurance program. Structural barriers include the lack of primary care providers, medical specialists, or other health care professionals to meet special needs or the lack of health care
facilities. Personal barriers include cultural or spiritual differences, language barriers, not knowing what to do or when to seek care, or concerns about confidentiality or discrimination.

Leading Health Indicators 2010
The Leading Health Indicators are a group of the most highly targeted issues and objectives of Healthy People 2010 and reflect the major public health concerns in the United States. They were chosen based on their ability to motivate action, the availability of data to measure their progress, and their relevance as broad public health issues.

The Leading Health Indicators illuminate individual behaviors, physical and social environmental factors, and important health system issues that greatly affect the health of individuals and communities. Underlying each of these indicators is the significant influence of income and education.

The process of selecting the Leading Health Indicators mirrored the collaborative and extensive efforts undertaken to develop Healthy People 2010. The process was led by an interagency workgroup within the U.S. Department of Health and Human Services. Individuals and organizations provided comments at national and regional meetings or via mail and the Internet. A report by the Institute of Medicine, National Academy of Sciences, provided several scientific models on which to support a set of indicators. Focus groups were used to ensure that the indicators are meaningful and motivating to the public.

For each of the Leading Health Indicators, specific objectives derived from Healthy People 2010 will be used to track progress. This small set of measures will provide a snapshot of the health of the nation. Tracking and communicating progress on the Leading Health Indicators through national and state-level report cards will spotlight achievements and challenges in the next decade. The Leading Health Indicators serve as a link to the 467 objectives in Healthy People 2010: Objectives for Improving Health and can become the basic building blocks for community health initiatives. A major challenge throughout the history of Healthy People has been to balance a comprehensive set of health objectives with a smaller set of health priorities.

The Leading Health Indicators are intended to help everyone more easily understand the importance of health promotion and disease prevention and to encourage wide participation in improving health in the next decade. Developing strategies and action plans to address one or more of these indicators can have a profound effect on increasing the quality of life and the years of healthy life and on eliminating health disparities - creating healthy people in healthy communities.
Determinants of Health - Healthy People 2010

The depth of topics covered by the objectives in Healthy People 2010 reflect the array of critical influences that determine the health of individuals and communities.

For example, individual behaviors and environmental factors are responsible for about 70 percent of all premature deaths in the United States. Developing and implementing policies and preventive interventions that effectively address these determinants of health can reduce the burden of illness, enhance quality of life, and increase longevity.

Individual biology and behaviors influence health through their interaction with each other and with the individual's social and physical environments. In addition, policies and interventions can improve health by targeting factors related to individuals and their environments, including access to quality health care.

Biology refers to the individual's genetic makeup (those factors with which he or she is born), family history (which may suggest risk for disease), and the physical and mental health problems acquired during life. Aging, diet, physical activity, smoking, stress, alcohol or illicit drug abuse, injury or violence, or an infectious or toxic agent may result in illness or disability and can produce a "new" biology for the individual. Behaviors are individual responses or reactions to internal stimuli and external conditions. Behaviors can have a reciprocal relationship to biology; in other words, each can react to the other. For example, smoking (behavior) can alter the cells in the lung and result in shortness of breath, emphysema or cancer (biology) that may then lead an individual to stop smoking (behavior). Similarly, a family history that includes heart disease (biology) may motivate an individual to develop good eating habits, avoid tobacco and maintain an active lifestyle (behaviors), which may prevent his or her own development of heart disease (biology).

Personal choices and the social and physical environments surrounding individuals can shape behaviors. The social and physical environments include all factors that affect the life of individuals, positively or negatively, many of which may not be under their immediate or direct control. The social environment includes interactions with family, friends, coworkers and others in the community. It also encompasses social institutions such as law enforcement, the workplace, places of worship, and schools. Housing, public transportation and the presence or absence of violence in the community are among other components of the social environment.

The social environment has a profound effect on individual health, as well as on the health of the larger community, and is unique because of cultural customs, language, and personal, religious or spiritual beliefs. At the same time, individuals and their behaviors contribute to the quality of the social environment.
The physical environment can be thought of as that which can be seen, touched, heard, smelled or tasted. However, the physical environment also contains less tangible elements such as radiation and ozone. The physical environment can harm individual and community health, especially when individuals and communities are exposed to toxic substances, irritants, infectious agents, and physical hazards in homes, schools and work sites. The physical environment can also promote good health, for example, by providing clean and safe places for people to work, exercise and play.

Policies and interventions can have a powerful and positive effect on the health of individuals and the community. Examples include health promotion campaigns to prevent smoking; policies mandating child restraints and seat belt use in automobiles; disease prevention services, such as immunization of children, adolescents and adults; and clinical services such as enhancing mental health care. Policies and interventions that promote individual and community health may be implemented by a variety of agencies such as transportation, education, energy, housing, labor, justice, and other venues or through places of worship, community-based organizations, civic groups, and businesses.

The health of individuals and communities also depends greatly on access to quality health care. Expanding access to quality health care is important to eliminate health disparities and to increase the quality and years of healthy life for all people living in the United States. Health care in the broadest sense not only includes services received through health care providers but also health information and services received through other venues in the community.

The determinants of health - individual biology and behavior, the physical and social environments, policies and interventions, and access to quality health care - have a profound effect on the health of individuals, communities and the nation. An evaluation of these determinants is an important part of developing any strategy to improve health.

Our understanding of these determinants and how they relate to one another, coupled with our understanding of how individual and community health determines the health of the nation, is perhaps the most important key to achieving our Healthy People 2010 goals of increasing the quality and years of life and of eliminating the nation's health disparities.

For more information on Healthy People 2010 objectives or on access to health care, visit http://www.health.gov/healthypeople/ or call 1-800-336-4797.
Southern Region Health Goals, Objectives and Indicators

Goal 1: Improve the health and well-being of clientele through increased physical activity.

Objective 1 - At the end of eight weeks or more, program participants will walk an average of 10 miles per week.

Indicators
- Number of contracted participants
- Total number of miles walked
- Comparison of week one average mileage to week eight average mileage for all ages and all beginning activity levels

Goal 2: Improve clientele quality of life through community-based organizations that address health-related needs.

Objective 1 - Extension will facilitate/support the planning, development and maintenance of new health coalitions.

Indicators
- Number of Extension staff providing leadership to community health coalitions
- Number of participants completing skill training

Objective 2 - Local groups will promote desired community health outcomes.

Indicators
- Number of active health task forces/coalitions
- Number of community health action plans implemented annually

Objective 3 - Local coalitions will identify perceived and actual health needs in the community.

Indicators
- Surveys/evaluation projects completed
- Number of needs assessments conducted

Goal 3: Increase detection of early stage breast cancer in order to reduce the mortality, morbidity and negative economic impact of late stage breast cancer.

Objective 1 - Program participants will demonstrate positive attitudes toward and
increased knowledge of breast cancer early detection methods.

**Indicators**
- Number of program participants who identify three parts of a breast cancer early detection plan
- Number of program participants who report increased positive attitudes toward breast cancer treatment on post-tests

**Objective 2** - Extension staff will provide training and support for breast cancer volunteers.

**Indicators**
- Numbers of volunteers trained annually
- Numbers of breast cancer materials distributed and breast cancer programs conducted

**Objective 3** - Targeted clientele will follow recommendations for BSE, mammograms and clinical breast exams.

**Indicators**
- Number of targeted clientele who report following recommendations on modified behavioral risk factor surveillance survey
- Mammography utilization rates as measured by Medicare
- Numbers of clinical breast exam and mammography performed by CDC Breast and Cervical Cancer projects in targeted areas

**Goal 4: Increase awareness of diabetes as a significant health problem in order to increase early detection.**

**Objective 1** - Program participants will demonstrate increased knowledge of diabetes.

**Indicators**
- People aged 18 to 24 years were the most likely to lack a usual source of ongoing primary care. Only 76 percent of individuals below the poverty level and 74 percent of Hispanics had a usual source of ongoing primary care.
- Number who participate in diabetes programs
- Number of program participants who correctly name three symptoms of diabetes
- Number of program participants who can identify three complications of diabetes
- Number of program participants who can define diabetes in terms of increased blood sugar
Objective 2 - Program participants will obtain diabetes screening tests.

Indicators
- Number of participants who obtain FBS
- Number of participants who report new diagnosis of DM 1
- Number of participants who report new diagnosis of DM 2

Goal 5: Prevent complications from poorly controlled diabetes in target clientele in order to reduce mortality and morbidity.

Objective 1 - Increase knowledge of diabetes control measures in targeted clientele with diabetes.

Indicators
- Number of program participants with diabetes who can identify four elements of blood sugar control - Monitoring Plan, Medication Plan, Special Occasion Plan, and Meal Plan - comparing program pre-test and post-test.
- Number of program participants who can name the two tests in a Diabetes Monitoring Plan: Hemoglobin A1c and Fasting Blood Sugar test.

Objective 2 - Increased number of people who adopt diabetes control measures to prevent complications of the disease.

Indicators
- Number of people who report diabetes control measures in program pre-test and post-program survey: taking prescribed medicines, following a prescribed meal plan, regular home blood sugar measurement, regular professional foot care, regular vision check-ups, regular HgA1c tests.
Healthy People ... Healthy Communities is a national health initiative which promotes the capacity of individual, families and communities to increase healthy behaviors and lifestyle choices and make informed consumer decisions. It strengthens community leadership and promotes the formation and enhancement of quality partnerships and infrastructure to meet local health and health care needs. It brings together the extension, teaching and research resources of the land-grant university system and its stakeholders to address health care issues.

**Goal 1: Educate and empower individuals and families to adopt health behaviors and lifestyles.**

**Objectives**
Provide ongoing opportunities for community-based education that encourage healthy individual and family behaviors.

Facilitate support systems for individual and family health behavior change. Identify and develop educational programs that address agricultural and forestry health and safety issues.

**Goal 2: Educate consumers to make informed health and health care decisions.**

**Objectives**
- Increase consumers’ knowledge of their health care options and the financing of these options (long term care; criteria for assessing various health care plans including managed care; traditional medical care systems such as Medicaid, Medicare and CHIP; and third-party payments).
- Expand consumers’ knowledge of their health and health care rights and responsibilities.
- Increase consumers’ skill in making health care decisions.

**Goal 3: Build community capacity to improve health.**

**Objectives**
- Encourage and promote leadership education that facilitates broad-based community involvement in leadership roles and community health decisions.
- Provide training and technical assistance in analyzing and assessing community health issues and policies.
- Facilitate planning and decision-making processes that create and sustain healthy communities.
National Network for Health

The National Network for Health provides technical assistance to a broad audience engaged in programs focusing on the health and safety of children, youth, families and communities.

This assistance includes web-delivered research-based information and educational materials; support for building health and safety collaborations; training; and the evaluation of network programs. Inter-university work supports the National Network for Health programs. Participation is open to all that wish to collaborate and to join one or more work groups.

National Network for Health Work Groups

- Coordinating Committee — guides the network planning and activities.
- Educational Resources Work Group — identifies and prepares research-based information for distribution.
- Evaluation Work Group — evaluates the effectiveness of NNH and its products.
- Marketing Work Group — creates products that promote NNH Programs.
- Sustainability Work Group — marshals resources to enhance and sustain NNH.
- Training Work Group — collaboratively delivers health related training programs.
- Adolescent Sexuality, Pregnancy and Parenting Work Group — links organizations to identify and share topical resources.
- Healthy Lifestyles Work Group — identifies, reviews, approves and recommends resources that support healthy lifestyles.
- Healthy Policy Work Group — provides resources for education and empowering consumer and communities to affect health policy.
- Alcohol, Tobacco and other Drugs Work Group — provides a “first best step” in finding substance abuse prevention resources and links with sources of preventive intervention programming pertaining to alcohol, tobacco and other drug use among youth.
- Immunization Work Group — provides educational resources about immunizations.
- Agrimedicine Work Group — provides educational resources on agricultural safety and injury prevention.
- Community Health Work Group — provides training and technical assistance in analyzing and assessing community health needs.
- Violence Prevention Work Group — identifies, reviews and recommends resources, which prevent violence across the life span.
In 1999, the Healthy People... Healthy Communities Initiative and the National Network for Health merged into one management team with one set of goals and objectives and one work plan.

**Plan of Action**

**Goal 1: Educate and empower individual and families to adopt healthy behaviors and lifestyles.**

Many diseases and injuries are preventable or controllable. As a result, Americans are now gaining a greater appreciation for the role prevention plays in terms of their quality of life and dollars expended. With an emphasis on prevention, the individual must make important decisions regarding lifestyle choices such as choosing not to smoke, controlling dietary habits including weight, and participating in physical exercise.

Those who care for dependents (children, youth and elders) must also be educated to make informed health decisions for those in their care. For these individuals and their families, disease prevention and health promotion require access to health education primary care.

The idea that “accidents happen” is no longer an accepted concept. Accidents (unintended injuries) are the leading cause of death among children under the age of 18. Research has shown that injuries are preventable when people are educated about hazards and risk management and when engineering controls such as seat belts and airbags are incorporated and used.

Disease and injury in the agricultural community is particularly notable. Research since 1990 has identified agriculture, including the occupations of forestry and fisheries, as one of the most hazardous industries in the United States. Accidents involving farm machinery cause an estimated three-fourths of all farm fatalities. Farmers and farm workers suffer from high rates of respiratory disease, noise-induce hearing loss, skin disorders, certain cancers, chemical toxicity, and heat-related illnesses. These industries do not have the infrastructure necessary to educate their workers on health and safety issues. In these rural occupations, there is often no clear distinction between the work and home environments. As a result, children and other family members are exposed to the same occupational hazards as the workers. For these reasons, agriculture and related industries are considered among the most dangerous occupations.

The concepts of disease and injury prevention can be incorporated in the home, at work and in the community. The Cooperative Extension System has traditionally provided health education for individuals, families and communities. The
identification of health issues as an important component was identified early in the formation of Extension. The 4-H youth development program even identified health as a significant concern when it was designated as one of the 4-H’s. Family and consumer science has traditionally addressed such health issues as food safety and nutrition. Specialists in agricultural engineering traditionally delivered the concepts of farm safety.

Cooperative Extension’s programs in agricultural and natural resources, 4-H youth development, and family and consumer sciences have expanded the traditional emphasis to incorporate cutting-edge health and safety issues. Entities within the Cooperative Extension System have formed partnerships with medical sciences to address these critical issues. Today’s programs address cancer education, environmental health issues, teenage pregnancy, protective clothing and equipment for farm workers, and agribusiness. Likewise, comprehensive programs have been developed to address farmers, farm workers, farm families and farm youth as well as the healthcare providers who serve agricultural communities.

Objective 1
Provide ongoing opportunities for community-based education that encourages healthy individual and family behaviors.

Action Steps
- Identify all FTE’s working in health and safety disciplines in each state Extension Service and establish a database of skills.
- Identify and screen Cooperative Extension System programs on personal lifestyle and behavior decisions through a survey of state program leaders, Extension health and safety specialists, and related specialists.
- Develop a clearinghouse for storing health and safety programs that address similar issues, needs assessment, effective program delivery strategies, train-the-trainer materials, and evaluation instrument materials and place materials on the initiative web site.
- Develop a systematic plan for creating or enhancing health and safety program and curriculum development for diverse audiences.
- Utilize train-the-trainer models, satellite downlinks, on-line, teal audio programs, audio-video conferencing, and other technologies to train trainers and individual learners are professional meetings.
- Develop and announce an annual schedule of training opportunities. Provide technical assistance on program evaluation to support program development and to document outcomes of selected projects.
Objective 2
Facilitate support systems for individual and family health behavior change.

Action Steps
- Identify and screen a list of potential referral systems that provide support for individuals and families around health issues.
- Create a clearinghouse of national, state or local support systems (e.g., support groups for persons living with chronic disease behavioral enhance programs, work-site support groups).
- Showcase effective educational programs that incorporate support systems within and outside the Cooperative Extension System (e.g., lay healthy advisors/educators, peer group educators).

Objective 3
Identify and develop educational programs that address agricultural and forestry health and safety issues.

Action Steps
- Identify all FTE’s working in the agricultural health and safety disciplines in each state Extension Service and establish a database of skills.
- Create a database of collaborating partners in the health sciences and they’re agricultural health and safety-related programs.
- Identify and screen Cooperative Extension System programs on agricultural health and safety through a survey of state agricultural and natural resources program leaders and related specialists.
- Develop a clearinghouse for storing agricultural health and safety programs that address emerging issues, needs assessment, effective program delivery strategies, train-the-trainer model, satellite downloads, online, real audio programs, audio-video conferencing, and other technologies to train trainers and individual learners at professional meetings.
- Develop and announce an annual schedule of agricultural health and safety training opportunities. Provide technical assistance on program evaluation to support program development and document outcomes of selected projects.
- Identify and screen a list of referral systems that provide support for members of the agricultural community around health issues.
- Create a clearinghouse of national, state or local support systems (e.g., support groups of persons whose health and well being are affected by the agricultural workplace).
- Showcase effective agricultural educational health and safety programs that incorporate support systems within and outside the Cooperative Extension System (e.g., lay health advisors/educators, peer group educators).
Outcomes

- Individuals will understand their responsibility in making healthy lifestyle choices.
- Individuals will understand the concepts of risk related to lifestyle choices and the potential outcomes of not making positive health choices.
- Individuals will be better prepared to take responsibility for healthy lifestyle decisions at all points of the life continuum.
- Individuals and families will practice healthy lifestyle strategies at all stages of the life cycle.

Goal 2: Educate consumers to make informed health and healthcare decisions.

Health care in this country is going through a period of rapid change, and Americans are increasingly concerned about access, quality and cost. New approaches to healthcare delivery are being discussed and developed. Most notable is managed care. While considered as a means of controlling cost, there is evidence that costs are again beginning to escalate. In addition, the Balance Budget Act of 1997 created changes in Medicare and Medicaid and initiated a children’s health insurance program. The aging of our population also has expanded the need for long-term care options. In order to maintain the quality of their need, more information about the range of public and private healthcare options and how to use and finance these options needs to be available.

Furthermore, healthcare providers and consumers are being asked to adopt new paradigms of health care. Increasingly, emphasis is being placed on self-care and the need for individuals to be proactive for their own health. Consumers meet to increase their skill and confidence in making sound self care decisions such as when to seek professional care and when and how to safely and effectively apply home treatment. A strong provider/patient partnership is being recognized as essential to quality care, and in order to build this partnership, consumers need to know their rights and responsibilities as patients. Individuals also need to learn how to effectively communicate with healthcare providers and make decisions regarding tough issues such as treatment alternatives, advanced directives, and power of attorney for health care. Strong decision-making skills are essential to make informed consumer health choices.

Objective 1

Increase consumers’ knowledge of their health care options and the financing of these options, (long term care; criteria for accessing various health care plans including managed care; traditional medical care system such as
Medicaid, Medicare and CHIP; and third-party payments).

Action Steps
- Inventory existing Extension System consumer health education resources and gaps.
- Collaborate with the National Network for Health in providing educational materials and resources via the Internet.
- Provide in-service training for Extension personnel. Provide consultation and technical assistance.

Objective 2
Increase consumers’ skill in making health care decisions. Provide train-the-trainer models of education to Extension personnel and community collaborators regarding consumer decision-making.

Outcomes
- Individuals know how to assess health information and make financial decisions regarding health care.
- Youth are better prepared to take responsibility and make decisions regarding their own health.
- Individuals are able to make informed decisions about when to use health care professionals and when to apply safe and effective home treatment.

Goal 3: Build community capacity to improve health.

It is critical that the Cooperative Extension System be part of cutting-edge approaches to improving community health. This goal embraces the basic premise of the healthy communities movement being implemented in more than 1,500 communities in more than 50 countries. The premise is that “well-informed” people, working together in an effective process, can make a profound difference in the health and quality of people’s lives within communities.

At the same time, the healthy communities movement recognizes that genetic factors, personal lifestyle behaviors, and living and working environments impact health. Thus, education, housing, employment, job skill training and retraining, public transportation, recreational opportunities, healthy and clean environments, and access to health duration and preventive services are keys or “building blocks” to good health. In addition, communities are impacted by federal, state and local health policies. Efforts to improve community health will therefore seek to engage business and industry, government, service organizations, healthcare payers, and citizens in inclusive community decision-making processes that strengthen and support the building blocks and healthy communities.
Objective 1
Encourage and promote leadership education that facilitates broad-based community involvement in leadership roles for community health decisions.

Action Steps
- Inventory leadership models and curricula that stress inclusive and participatory approaches.
- Create an annotated bibliography describing the above resources.
- Provide blueprints for identifying and engaging community-based partners who have stake in community health.

Objective 2
Provide training and technical assistance in analyzing and assessing community health issues and policies.

Action Steps
- Inventory technical assistance resources that assess community assets and needs. Inventory policy education resources useful for health planning deliberations.
- Create an annotated bibliography describing the above materials. Identify policy education and technical assistance resource teams with experience in analysis and assessment of community health issues and policies (e.g., Community Solutions for Rural Health, Hometown Health, Healthy Communities, Operation Rural Health Works, etc.).

Objective 3
Facilitate planning and decision-making processes that create and sustain healthy communities.

Action Steps
- Expand the annotated bibliography on community health planning materials.
- Implement operation Rural Health Works including demonstration sites and nationwide replication.
- Secure funding to provide educational/technical assistance in support of community health efforts.
- Establish linkages with other agencies, organizations and programs (e.g., Community Campus Partnerships for Health, Work Force Preparedness Initiative, Coalition for Healthy Cities and Communities, a Community Solutions for Rural Health, Operation Rural Health Works, Planned Approach to Community Health, etc.).
Outcomes

- Partnerships and coalitions have been formed at the local, state and federal levels to expand resources for people and communities.
- Community leaders have the knowledge and skills needed to assess and address health concerns. Local health and healthcare concerns are being addressed, and local healthcare infrastructure is improved as a result of involving community leaders, health providers and consumers in an ongoing community decision-making process.
- Communities have developed solutions to accommodate people with disabilities and limited resources.
Objective
The objective of this session is to provide Health Institute participants with a framework for understanding the services, payment systems and current issues pertaining to U.S. health care services and how this relates to community health. Extension agents should, upon completion, be familiar/conversant with the major concerns and relevant terminology utilized by the health care community of interest. Participants will become familiar with both the traditional, or provider model, view of the health system and the expanded view of the social, environmental and supporting elements that contribute or detract from the health of their clientele and community.

Key Definitions

Community Health: Community health can be described in terms of collective health and safety problems and common individual health behaviors. It is reflected in the summary health or the average health of all individuals in the community. Healthy communities are often identified as the “kind of place I would like my children and grandchildren to grow up in,” reflecting community health as a major determinant of quality of life.

Health Care System: The arrangement of doctors, nurses, pharmacists, hospitals, clinics and other providers to deliver health care to individuals, the array of services offered, the policies that guide them, and the purchasing mechanisms.

Determinants of Individual Health

![Diagram showing the determinants of individual health]

- Biology
- Environment
- Lifestyle
- Health
- Healthcare System
Determinants of Community Health

Health Policies: The guiding plans used to direct the actions of an individual, facility, organization, community, state or nation.

Examples of health policies include:

- New Year’s resolution to lose weight
- Habit of keeping floors, tables and sink clean of crumbs to avoid attracting pests
- Declaration to perform blood pressure screening monthly at a church
- State law requiring hospitals to meet licensing criteria
- Federal Medicare regulations and HMO legislation

Health Care Access: Access to health care is a major issue in the health of individuals in a community.

Components of access include:

- Having health care providers available to the community
- Having ways for individuals to travel to and enter the health care system
- Having financial resources to pay for the care
- Having health care providers and systems that are culturally sensitive and appropriate to the populations in the community. Accessible primary care is important for any community.
Introduction/Overview Session

In the United States, health care is delivered through a complex system of local, regional and national components. It can be described in terms of the health care providers, the types (levels) of care available, health-related government structures, and the methods of payment for services.

Health care is changing constantly in response to federal and state legislation, market forces, and cost-control efforts by the health care industry. In this time of unparalleled restructuring, new regulations, payment mechanisms, rapid mergers, and consolidation among hospitals, providers and insurers characterize health care. The health of individuals and entire communities are, without doubt, impacted by these changes.

In addition to health care services, the local health system is comprised of the environment and other human, organizational and financial assets. Since these assets and the structures of different state health systems vary widely, local leadership is necessary to address the gaps that negatively impact the health of community members. Without this local leadership and planning, the local health system is a collection of parts, which serves only a portion of community health needs.

Several different health systems may function in a single community within the parameters proscribed by state and federal legislation and funding. A well-planned and supported health care system can promote community and individual health. In such a system, careful coordination of services and community health policies can maximize the benefits of health care, provide social and environmental support for wellness, and encourage the appropriate use of medical resources.

Leadership may derive from a group of stakeholders working to create a strategy or local policies to improve the local health system. These stakeholders may be health care providers or key individual leaders who organize community support to address a particular health issue. Examples of possible professionals and informal leaders include:

- Hospitals
- Rural health clinics
- Community health clinics
- Free clinics
- Pharmacies
- Private practitioners
- Safety net providers
- Long-term care facilities
- Hospices
Who Is Responsible for Community Health?

With so many sectors of the community involved in health, there is usually competition to control aspects of the local health system(s). Physicians may claim leadership by virtue of their licensure, expertise, and the urgent need for their services. Hospitals also claim leadership through the control of the location and are often the employer of those who provide acute care. The insurance industry, both private and public, attempts to manage the health system through quality assurance, managed care, and reimbursement. Health departments have recognized, legislated authority in services related to issues of public health.

The reality is that many different entities and professionals, as well as the health consumer, have shared responsibilities in the health system. For example, a rural community might have one or more of the following: doctor or nurse practitioner office, dentist office, chiropractor office, community health center, public health clinic, satellite clinic from a regional hospital or doctor's group, pharmacy, small hospital, nursing home, visiting specialist clinic, mental health clinic, wellness center, home health agencies, and others.

As a general principle, local community stakeholders drawing experience from among the broad and diverse set of local interests are best able to match and coordinate the multiple, often-competing health care interests for the good of the community’s development.
Several entities are briefly described here for purposes of role clarification.

**U.S. Department of Health and Human Services (DHHS)**
DHHS is the major federal government organization of multiple health-related agencies. An organizational chart of these health-related agencies, or divisions, is shown here. Descriptions of all the DHHS operating can be found at
Center for Disease Control and Prevention (CDC)
This center is another agency in the U.S. Department of Health and Human Services that functions as a support agency to study and recommend care for threats to the health of the public. In cases of mass illness, the CDC will study the local “epidemic” and recommend public health intervention. In recent years, CDC has begun to focus attention on significant trends of chronic illness and has often involved local resource persons in study and intervention projects for heart disease, diabetes, HIV/AIDS, etc.

National Institutes of Health (NIH)
A group of agencies for specific illnesses or conditions (heart, lung, cancer, aging, environmental health, etc.) that focus extensive attention on illnesses through research and demonstrative grants. Until recently, these agencies were perhaps more influential than any other source for determining the character of medical education. HMOs have altered their influence in many medical markets. These are a part of the U.S. Department of Health and Human Services (DHHS).

State Departments of Health
If the health problem is common in a number of other communities in a particular state, it will probably attract the notice of the state health department. This DHHS affiliated state agency is charged with monitoring the health of the public and directing needed interventions such as immunization campaigns, environmental monitoring, or communicable disease control.

J-1 Visa Program
This program administered by ARC and other agencies seeks to provide under-served areas with physicians by offering foreign doctors the opportunity to live in the United States by first serving two years in an under-served area. Under-served areas are designated by the agency, usually in consultation with the DHHS.

National Health Service Corps (NHSC)
The NHSC is an agency in the DHHS that was established to supply physicians for work in under-served areas. In its early years, it accepted physicians to serve in lieu of military service and distributed them widely. In recent years, without a military draft, the NHSC has depended on scholarships to attract young physicians (and other primary care providers and dentists) into service. As data has shown decreased retention of “outsider” doctors, the NHSC has made greater effort to get local students for under-served areas to sign on for scholarships.
Health Care Providers
In most communities different entities provide health care. Public health and mental health clinics provide some individual health care to citizens, as state tax allocation allows for these services. Community health clinics and rural health clinics are federally subsidized to provide health care in some communities. Together, these clinics provide a safety net for the uninsured or underinsured public. Additional free clinics are often organized at the local level, and some private health care providers accept publicly funded reimbursement.

Private health care, however, makes up the largest segment of health care. Private health care could be described in terms of the many types of formal and informal contracts between hospitals, doctors, nurse practitioners, allied health providers, insurers, the medical industry, and health care consumers.

How Is Healthcare Provided?

Guidelines for Care
Guidelines for health care are efforts taken to decrease some of the variation in care given for certain illnesses and to create a more predictable cost of care including monetary, days lost from work, etc. Usually bodies of individuals with expertise in care for the illness convene to review evidence about best diagnostic and treatment options and then produce an expert or consensus opinion about how to carry out medical care. These opinions result in guidelines. Sometimes local health care providers will review their local options, generate a local consensus, and create local guidelines.

Guidelines are generalized across a certain population and are not specific advice to an individual. As such, they are sometimes useful in Extension health education. For example, the National Heart, Lung and Blood Institute Guidelines for the Management of Hypertension provide a baseline recommendation about daily sodium intake for people with hypertension. The Guidelines for Control of Diabetes by the American Diabetes Association recommends the regular measurement of HgbA1c. These guidelines are generally applicable for all those diagnosed with these diseases, yet they may be adapted by physicians for individualized medical management. Extension programs would use guidelines as a source of information for clients to discuss with the primary care provider.

Standards of Care
These are the professional consensus opinions to which medical or nursing care is compared to determine if care being evaluated is of acceptable quality. Standards are created by custom based on training and experience.
These standards may be refined by the appearance of new technologies and new scientific or professional opinions regarding care. Local professional bodies, such as hospital staffs, nursing, and medical societies, set standards. Standards may also be created or adopted by health care organizations and regulating bodies.

**Patient/Provider Partnerships**
As medical care moves from the acute/intense to the preventive/educational, the will of the patient becomes more and more important as to whether the care offered will be utilized. Behavioral change theories indicate that an active partnership rather than the authoritarian approach will be of greater value in these later cases. Patient/provider partnerships, sometimes formalized as written agreements, are particularly advocated in care where patient discretion is crucial to optimal care.

**What Types of Health Services Are Provided?**
Health care can be defined as the prevention, diagnosis and treatment of chronic diseases, injuries and acute illnesses. Health education, or health promotion, is pertinent information for health consumers and the general public about risks and health-related life skills. Self-care is the effective use of health care services and health education to clients to prevent illness and injury, recognize health problems, handle minor health problems at home, and to utilize health care resources appropriately. A strong health system provides a way for communities to access all these services in some reasonable, affordable manner. Examples of specific health care and health promotion services include:

- Primary, secondary and tertiary acute medical care
- Chronic disease medical management
- Disease prevention and early detection
- Health education/Health promotion
- Rehabilitation
- First responders, first aid
- Emergency medical services/trauma care
- Ambulatory/Outpatient care
- Home health care agencies
- Alternative and complementary medicine
- Assisted living facilities
- Skilled nursing homes
- Dental care
- Mental health
- Hospice

Medical care can be described according to the level of care required, intensity of the services, and the locations in which they are provided.
The usual terms used for acute medical care are primary, secondary and tertiary care as illustrated in the following diagram:

As mentioned earlier, the same terms, primary, secondary and tertiary can also describe the levels of preventive care known also as health promotion/education/wellness/disease prevention, early detection and prevention of complications, or rehabilitation. Whatever it is called, the costs associated with any given health service is greater as the level of care increases. Increasing levels of services also require greater expertise and preparation of the professionals involved.

**The Cost of Healthcare**

In 1970 the per capita national health expenditure was $341 for a total of $73.2 billion representing 7.1 percent of the gross domestic product. Projections of the Health Care Financing Administration (HCFA) for 2002 are for expenditures totaling $1.54 trillion representing 13.9 percent of the gross domestic product (GDP). This equals an expenditure of $5,415 per year for each person (*Health Affairs, Volume 20, Number 2*, page 194). Though the annual rate of growth has slowed since the 1980s, a sizeable portion of our economy is dedicated to the health care sector. HCFA has projected that health spending will account for 15.9 percent of the GDP by 2010. Where are those dollars going, and who is footing the bill?

The bulk of the expenditures are for hospital care and physician services, but note in the charts on the next page the decreasing percentage of hospital care and the corresponding increases in other categories, such as drugs and home health care, between 1990 and 1999.

Factors such as the increased use of managed care, changes in Medicare
payment policies, the aging of the population, and the growth in demand for and availability of pharmaceuticals have, and will continue to, influence the distribution of health care spending.

Whether the source of payment is through employer or personal health insurance, out of pocket expenses, or government sponsored programs such as Medicare and Medicaid, ultimately, health care is paid for by people. It is, however, instructive to look at the source of payments, as they will influence many of the payment and reimbursement policies that can impact the availability and ease of access to care. Following is a chart indicating the source of payments for expenditures in 1999:
In the U.S., the ability of medical science to produce almost endless ways to diagnose, treat and monitor illnesses and the role of insurance in separating patients from the liability of paying have made costs for health care sky rocket. One way to look at cost takes into account medical expense, time lost from work, survivor benefits and similar factors. The health-cost cycle is shown here.

In this illustration, the most effective cost saving approach is to avoid the large costs of sickness in the first place. Health promotion and disease prevention and better self-care are the hallmarks of this effort. The problem is that we live in a culture of illness, medical treatments, cures and diagnoses. Cultural change requires an effective education. The medical profession has not been sufficient to the task of this education.

What other mechanism is available to approach people on a personal basis, in the context of their daily lives, to provide information about health promotion and prevention that they understand and can use? The public health approach of laws and mass campaigns is effective and inexpensive. However, lifestyle disorders of cancer, heart disease, etc. are diseases of culture. A more personal, persistent educational approach is needed to assist individuals and families to take better care of themselves and make better health care decisions.

How Is Healthcare Paid For?
A number of mechanisms, private and public, exist to facilitate the payment of health care services. First, let us look at a number of government sponsored programs.
Medicare
Authorized in 1965 by Title XVIII of the Social Security Act, Medicare is a nationwide federally administered health insurance program.

Health insurance protection is available for the following eligible persons without regard to income:

- Persons 65 or older who are receiving or eligible for retirement benefits from Social Security or the Railroad Retirement Board;
- Persons under 65 who have received Social Security or Railroad Retirement disability benefits for 24 months; and
- Persons under 65 who have End-Stage Renal Disease.

Medicare is composed of two parts: Part A (hospital insurance, no cost to eligible enrollees) and Part B (medical insurance, $50 monthly premium). The following chart provides an outline of benefits available with the traditional fee-for-service Medicare plan in 2001. Be aware that in some locations Medicare may be pro-

<table>
<thead>
<tr>
<th>Part A</th>
<th>Benefits</th>
<th>Beneficiary pays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inpatient hospital</td>
<td>No coinsurance; deductible of $792</td>
</tr>
<tr>
<td></td>
<td>Days 1-60</td>
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<td></td>
<td>60 lifetime reserve days</td>
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<td>Skilled nursing facility*</td>
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<td></td>
<td>Days 1-20</td>
<td>Up to $99 a day</td>
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<td></td>
<td>Days 21-100</td>
<td>No benefits</td>
</tr>
<tr>
<td></td>
<td>After 100 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Home health*</td>
<td>No coinsurance</td>
</tr>
<tr>
<td></td>
<td>20% of approved amount for durable medical equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hospice*</td>
<td>Small payment for outpatient drugs and inpatient respite care</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part B</th>
<th>Benefits</th>
<th>Beneficiary pays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Deductible</td>
<td>$100 a year</td>
</tr>
<tr>
<td></td>
<td>Physician and other medical services</td>
<td>20% coinsurance of Medicare approved amount</td>
</tr>
<tr>
<td></td>
<td>MD accepts assignment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Outpatient hospital care</td>
<td>Coinsurance or fixed co-payment which may vary according to service</td>
</tr>
<tr>
<td></td>
<td>Ambulatory surgical facility services</td>
<td>20% coinsurance</td>
</tr>
<tr>
<td></td>
<td>Durable medical equipment (wheel chairs, hospital beds, oxygen, walkers)</td>
<td>20% coinsurance</td>
</tr>
</tbody>
</table>
vided through a managed care plan. These plans generally limit their enrollees to the use of doctors, hospitals and other providers in their network; however, they might provide additional benefits such as prescription drugs and eyeglasses. Approximately 85 percent of today’s Medicare participants are enrolled in the traditional fee-for-service program (Talking With Your Parents About Medicare and Health Coverage, the Henry J. Kaiser Family Foundation, 1999).

**Medigap Policies**

Medigap plans are private health insurance policies available to Medicare beneficiaries to cover certain costs that would otherwise be paid by the beneficiary. Though these policies are commercial offerings, they are strictly regulated by federal requirements. A variety of Medigap plans exist to meet the individual needs of their subscribers; however, this variety is limited to 10 standardized plans. Some plans extend elements of the basic Medicare Part A and B benefits, and others include new benefits such as prescription drug coverage and foreign medical expenses. Though the 10 policies are standardized by coverage, rates will vary between states and by insurance carrier.

Whenever federal legislation changes Medicare payments to health care, institutions are targeted as the place to save large amounts of money. This is particularly hurtful to rural hospitals for several reasons. First, rural areas are more dependent on Medicare because of a greater proportion of elderly in the rural population. Second, rural hospitals are often the sponsors of other health care efforts that depend on Medicare so that Medicare cuts into the hospitals’ cash flow from hospital and non-hospital services. Third, rural hospitals have fewer options for developing additional streams of cash flow. Finally, most rural hospitals operate with thinner margins of Medicare over expenses so that by design the budget cuts of the BBA will force many rural hospitals far into

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### Part B (continued)

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Beneficiary pays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outpatient Physical, Speech and Occupational Therapy</td>
<td>20% coinsurance</td>
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<tr>
<td>Clinical diagnostic laboratory services</td>
<td>No coinsurance</td>
</tr>
<tr>
<td>Home health care*</td>
<td>No coinsurance</td>
</tr>
<tr>
<td>Outpatient mental health services</td>
<td>50% coinsurance</td>
</tr>
<tr>
<td>Preventive services</td>
<td>See Medicare and You for coverage details. May or may not require 20% coinsurance and meeting of Part B deductible</td>
</tr>
<tr>
<td>Flu shots; Pneumococcal vaccines; Colorectal cancer screenings; Prostate cancer screenings; Mammograms; Pap smears; Pelvic exams</td>
<td></td>
</tr>
<tr>
<td>Bone mass measurement, diabetes monitoring and self-management training</td>
<td>20% coinsurance</td>
</tr>
</tbody>
</table>

*Certain conditions must be met for Medicare to cover these services*

**Source:** http://www.medicare.gov, Medicare and You 2001, Health Care Financing Administration
Although attention is most often focused on the most dramatic changes — hospital closings — the real effects take place within the hospitals themselves, and in their communities. Rural hospitals are tightening their budgets and reconfiguring services. Some have opted to provide a wide continuum of health care, from preventative care to long-term care. Some are converting to

Source: Tom Richetts, Rural Health News, Spring 1997
outpatient or long-term care facilities, with a minimal number of beds for acute inpatient care. Others are joining networks or affiliating with other hospitals, physicians or other providers. As the hospitals change, a community’s health care may change along with its economic base and its structure of social services.

The chart below shows the infinite varieties of changes possible in a rural hospital. The horizontal axis indicates more or less acute care services.

**Medicaid**

Authorized in 1965 by Title XIX of the Social Security Act, Medicaid pays for health care services of low-income individuals defined as medically or categorically needy. The categorically needy include the following low-income individuals:

- Aged poor
- Blind
- Disabled
- First-time pregnant women
- Families with dependent children

Some individuals qualify for Medicaid even when their annual income level exceeds the limits established for the categorically needy. These individuals, termed the medically needy, have very high expenses associated with their medical condition. The cost of care reduces their financial resources below established levels, thus qualifying their participation.

Medicaid is a federal/state cost share program based primarily on each state’s per capita income. The federal government pays between 50 and 77 percent, and the states pay the balance. Broad general guidelines are established nationally. The states determine the benefits to be covered, program eligibility criteria, rates of payment for providers, and the method of administering the program. The inclusion of such optional services as prescription drugs, dental services, eyeglasses, and intermediate care facilities for the mentally retarded will vary significantly between states, whereas federally mandated services, such as family planning, will be available in all state Medicaid plans.

**State Children’s Health Insurance Program (CHIP)**

Authorized in 1997 by Title XXI of the Social Security Act, CHIP is the largest expansion of child health insurance since Medicaid was established in 1965. The plan was enacted to expand health insurance coverage for low-income children up to age 19. The plan covers children of the working poor as well as the unemployed.

CHIP is a voluntary program that enables states to provide health coverage for millions of uninsured children through a federal/state cost share arrange-
ment. The federal government has set aside $24 billion over five years to help fund the program; state matching rates are at a lower percentage than those required for Medicaid. States may provide CHIP coverage by expanding Medicaid, establishing a new insurance program, or a combination of the two methods.

In 1998 approximately one in seven children had no health insurance; by 1999, 11.6 million children were without insurance. Federal CHIP regulations allow coverage for the following:

- Uninsured children in families with income above the Medicaid eligibility threshold but below 200 percent of the federal poverty level (the federal poverty level was set at $17,650 for a family of four in 2001).

  OR

- Uninsured children in families whose income is up to 50 percentage points over their state’s current Medicaid income level for children (this results in states such as California and Rhode Island being able to provide coverage to children in families earning up to 250 percent of the federal poverty level)

States have chosen various income levels within the federal guidelines in determining eligibility for their individual CHIP programs. Federal regulations do, however, stipulate some uniform requirements regarding coverage. Though states are allowed to establish premium and copayment requirements, federal regulations set limits on the amount of patient out-of-pocket expenses. Cost sharing for well-baby, well-child or adolescent well visits, and immunizations are prohibited as well.

Federal funds have been allocated on both the national and state level for outreach efforts to increase the number of enrolled children. A toll-free number, 1-877-KIDS-NOW, automatically connects families anywhere in the country to their state’s enrollment agency. Eligibility and state contact information can also be found on the web at http://insurekidsnow.gov. CHIP is a major step forward in improving the health of our children, but its success is dependent upon our ability to both enroll families and then assure that they have access to appropriate and timely care.

As we saw in the section on the cost of health care, government programs are the source of payment for much of our health services expenditures. However, approximately one-third of national health expenditures flow through private health insurance payments. The structure and policies of private insurance
plans, therefore, have a significant impact on how we receive care. As society seeks means to contain rising health expenditures, many of the methodologies used by private plans have been adopted by government-sponsored programs as well. Following is a brief review of some typical health plans.

Health Maintenance Organizations (HMOs)
An HMO is an organized system for the provision of a pre-determined set of basic and supplemental health maintenance and treatment services to its enrollees. Fees to the HMO are predetermined and prepaid. All covered services are delivered for this “capitated” payment. The payment is fixed and does not vary by the level, type or extent of actual services provided to an enrollee.

Preferred Provider Organizations (PPOs)
A PPO is a system that incented insureds to select their healthcare providers from a designated group of physicians and hospitals. The incentives are usually in the form of reduced deductibles and copayments, broader coverage of services, or simplified claims filing. In contrast to typical HMO coverage, PPOs generally allow subscribers to use non-PPO providers, but without the incentives for in-network services. Providers participating in the PPO agree to accept the PPOs reimbursement structure and payment levels and other administrative requirements of the PPO.

Since 1847 when the first commercial insurance plan for accidents became available, many changes in the structure, breadth and degree of coverage have evolved. As we struggle to find ways to provide appropriate care to the greatest number, while controlling the growth of expenditures, new systems for the provision and payment of health services will surely emerge.
The Language of Health

Barbara K. Garland

Introduction

Language: The special vocabulary and usages of a scientific, professional or other group. Fourth definition, American Heritage Dictionary, 1991

Health: Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. World Health Organization, 2000

The language of health consists of the terms and concepts that underlie beliefs and practices shared among those in the health professions. This common language ensures communication and understanding among health professionals from multiple disciplines and across many cultures.

The selected concepts presented here influence the way health professionals think about health and frame their views on how healthy people in healthy communities can be achieved. Knowing this language and how it is used is essential if we are to identify effective intervention points or successfully collaborate with those working in the health field.

Section 1: Vital Statistics

We are going to first look at vital statistics. These are the numbers collected in every county and transmitted to state and national data centers where they are aggregated (merged) to provide the big picture on how we are doing overall in health. These statistics include information on births, deaths, marriages and divorces. Of particular interest is cause of death published as leading causes of mortality. One use of this information is to determine where to concentrate resources in order to decrease excessive mortality and morbidity (illness). Making informed decisions about health programming requires being familiar with the appropriate vital statistics. Annual vital statistics publications can be obtained from your state office of vital statistics, state health department.

Vital statistics are provided as numbers and rates. Knowing only the total number of births or deaths in an area or from a specific cause has little meaning unless you are the hospital administrator, florist or undertaker and need to know how many beds, flowers and caskets to keep on hand. Numbers of events alone are referred to as numerator data.

Knowing the denominator or size of the group allows a rate to be calculated for comparison across groups and over time. A rate is the number of events in a given period of time divided by the number of people at risk of experiencing that event during that period. The rates used in reports of vital statistics may be calculated for the county, state or nation. The time period is usually one calendar year, but three and five year rates are often used when events are rare.
It is believed that the one most important vital statistic reflecting a society's ability to provide for the well-being of its population is the infant mortality rate. The infant mortality rate is the number of infant deaths for a specific year divided by all live births during that year. Infancy is considered to be from birth to one year. Rates are most often expressed as per 1,000 or per 100,000 depending on the frequency of the event. The infant mortality rate is given as the number of infant deaths per thousand live births.

**Example**

*Infant Mortality Rate, 1999, Robbins County, U.S.*

\[
\frac{68 \text{ deaths}}{8743 \text{ live births}} = 0.007777 \times 1,000 = 7.8 \text{ or } 7.8/1000
\]

This figure can be compared to infant mortality rates for the state, nation and other countries.

In 1998 the U.S. infant mortality rate was 7 per 1000. Thirty-one countries or territories had infant mortality rates between 3.2 and 6.7 per 1000. One explanation given for the higher U.S. rates is that we have a multi-cultural society while most other countries have more homogenous populations. A second explanation is the economic disparities and associated differences in access to health care that exist among various segments of the U.S. population. Obviously, these two explanations are related.

Other rates are calculated in much the same manner. Rates may be age, sex, race or disease specific, or they may take all of these factors into consideration. The more stratification (classifying), the larger the population needed for a meaningful rate. A problem in comparing rates is that in small populations very few excess deaths can have a drastic effect on the rate for a single year and distort the true picture. To compensate for the effect of small numbers, a three or five year rate may be used. This rate is calculated by using the average annual resident deaths divided by the population mid-term.

In health promotion programming, information is frequently needed on the leading causes of death. Excessive or unusually high mortality rates for a specific cause is justification for directing scarce health resources toward targeted prevention efforts. There are several ways to look at mortality rates, and the one you choose will determine how useful the rate is.

The unadjusted or crude annual death rate is the number of resident deaths divided by the number of people living in the area on July 1 of that year. It is a simple observation of annual total or disease-specific deaths.
Many times these rates are used to compare experience across geographic areas. Doing so may be misleading. The problem is that without accounting for differences in ages or other factors between areas, unadjusted rates do not tell the real story. For instance, if the population of area one is older than area two, more deaths would be expected. It would not be possible to determine if area one was experiencing excessive mortality. For this an adjusted mortality rate is used. The adjusted mortality rate takes into consideration the age, race and sex distribution of the population, thereby making it useful for comparisons across areas and between population groups. Adjustments are achieved by applying both groups' age specific mortality rates to a standard. The standard frequently used for age adjustments is the United States 1970 population.

Mortality from any specific disease or injury is relatively rare. A very small percentage of the population dies from any one condition. For instance, about .00029 women die of breast cancer each year. To make comparisons less cumbersome, rates are expressed in per 100,000. For breast cancer this would be 29 deaths per 100,000. For more common events, the total mortality rate per 1000 may be used.

Example
Calculating the adjusted mortality rate allows us to know how many deaths would occur in each group if the age distribution was the same in each group.

Using the unadjusted and adjusted rates for California and Florida, compare 1998 rates for death from diseases of the heart.

Group Exercise
Break into state groups. Using the vital statistics book from your state, find the one and five year infant mortality rates for your state and county for whites and nonwhites. Compare these rates. What do they tell you? Are there differences among counties represented on the group?

Looking at mortality from breast cancer in women for your state and county, compare five year state and county adjusted death rates. How does your county compare? Why use the five year adjusted rate? If you were allocating funding for an early detection program, which of the counties represented by your state would receive funding. Why? Which counties would receive funding if 5-year unadjusted rates were used?
Section 2: Basic Measures Used in the Study of Health, Disease and Disability in Human Populations

What we know about health, disease and disability has been learned from the study of the occurrence of disease in human populations. The science which does this is epidemiology: epi meaning upon; demos, the people; and ology, the study of. Epidemiology is used to not only learn more about health, disease and injury in groups of people but also to determine at which point in the disease or injury process an intervention can effectively prevent it or limit its effects. Planning and implementing effective health promotion and disease and injury prevention programs depends on identifying and targeting this intervention point.

What do we need to know to design effective health programs? First we need information on the distribution of the disease within the population of interest. We need to know who is effected, where they reside, and when or under what circumstances they became ill (person, place and time). This information can be combined with data from other sources such as genetics, biochemistry and microbiology to help find the etiology or cause of the disease or disorder. Only then can the appropriate intervention points be determined and effective interventions be developed. In program evaluation, rates of disease or injury are compared before and after the intervention.

Example

Let’s look at breast cancer. It is predicted that there will be about 183,000 new cases of breast cancer in 2000. This disease killed over 43,000 women in 1999. We can use numerator data here because we are referring to the entire universe of women in the U.S. population and not comparing them to any other group. Besides, it is more impressive than saying 29 per 100,000. However, when we look at change over time or between countries, we have to use rates so as to account for the differences in the denominator, the total populations in each group. Since we do not know the cause of breast cancer (we do not even have a good guess at this time), we cannot prevent it. So what can we do to save the lives of women stricken with this disease? At what point can we intervene effectively?

Epidemiologic research has shown that when breast cancer is detected at a very early stage, the probability of surviving five years is 95 percent versus less than 20 percent for tumors found in an advanced stage. Early detection then is the most effective intervention strategy for breast cancer. It is estimated that up to 30 percent of breast cancer mortality can be prevented through early detection.
These include mortality, prevalence and incidence rates. The mortality rate equals the number of people dying divided by the total number in the population over a certain time period. Mortality rates can be calculated for specific cause of death among a population-at-risk (PAR). They can also be adjusted for age, race and sex.

A prevalence rate is the number of people with a disease at a point in time divided by the total number of people in the group. If you went out and did a door-to-door survey of your county, how many people would you find that have been diagnosed with hypertension? Divide that number, the numerator, by the total population of the county on July 1, the denominator. That is the prevalence rate. The prevalence rate gives a picture of the situation at one point in time. It is useful in determining health and health-related services needed such as number of hospital beds and home health services.

The incidence rate tells different a story. The incidence rate refers to the number of new cases occurring in a population within a specified period of time. It is the number of new cases divided by the total number of people at risk of the disease within a point in time. In calculating the incidence rate, the number of the population-at-risk is used in the denominator rather than the total population because not everyone in a group may be at risk of developing the disease under consideration. For instance, some conditions such as prostate or ovarian cancer only occur in specific gender groups, or else they already have the disease (diabetes, cancer, heart disease).

Although prevalence and incidence rates are sometimes confused even by some health professionals, it is important to know the difference. Also, when examining data, beware of confusing incidence and mortality. While mortality rates are readily available, good data on incidence does not exist for most diseases. Incidence only equals mortality when 100 percent of the new cases die within the time period under consideration. This may be true for some acute conditions. It is almost true for lung cancer where 75 percent of newly diagnosed cases die within months. On the other hand, chronic diseases tend to progress slowly, leading to an accumulation of cases (greater prevalence) than new cases (incidence) over time. The relationship between incidence and prevalence is as follows: prevalence equals incidence times survival time with the disease. The incidence rate gives us a picture of the dynamics of the disease over time within a population. Is the disease increasing or decreasing? For whom?

Prevalence may thus be many times incidence if a disease leads to a chronic state of long standing. Why do we care about all this? Because not understanding the differences can lead to errors in interpreting information, unsound
planning and a loss of credibility among collaborators.

Incidence rates are often used to compare the experiences of two or more different groups. By comparing the two rates, one can determine which group is at greater risk. We can divide the two rates and obtain a risk ratio, or relative risk.

Risk factors are associated with an increased risk of becoming diseased or sustaining an injury. They may be found in the physical environment as toxins, infectious agents, drugs, or present as part of one's genetic heritage. Risk factors may be part of the social environment such as in loss of a family member, social isolation, or aspects of a particular culture. Behavioral risk factors include tobacco use, diet, inactivity, aggressive driving habits, and inappropriate use of equipment.

Risk factors are most commonly used to predict the occurrence of disease or injury. Although risk factors are associated with specific diseases, not all risk

**Example**

In the state of Zandu there were 3,660 new breast cancer cases among women in 1999. Eight hundred women died of breast cancer. A household survey identified 14,300 women who had been diagnosed with breast cancer within the past five years. There were 2.8 million women who were 18 and older. The total population was 5 million.

The Zandu 1999 breast cancer mortality rate for women = \(\frac{800}{2,800,000} = 0.0002857 \times 100,000 = 28.6\) per 100,000 women

The Zandu 1999 breast cancer incidence rate for women = \(\frac{2,800,000 - 14,300}{2,800,000} = 2,785,700\).  
\(\frac{3660}{2,800,000} = 0.001307 \times 100,000 = 130.7\) per 100,000 women

The Zandu 1999 breast cancer prevalence rate for women = \(\frac{14,300}{2,800,000} = 510.7\) per 100,000 women

**Example**

If non-smokers have a lung cancer incidence of 19 per 100,000, and the rate is 188 per 100,000 for smokers, we can divide 188 by 19 for a risk ratio of 9.9. This measure of risk then becomes useful in predicting lung cancer rates in smoking and non-smoking groups. These risk estimates are the basis for the risk factors which have been shown to be associated with various diseases.
factors are causes. Some risk factors may be indirectly associated with a
disease.

Elicit further examples from group discussion.

**Section 3: Determining Abnormality**

If we are going to plan and implement effective interventions within a popula-
tion group, we have to know either who has the disease of interest or, in the
case of interventions involving early detection, how to find out. Unfortunately,
this may not be straight forward or easy. There is a spectrum of disease rang-
ing from no disease to a subclinical state in which there is no apparent sign
of disease to clinical illness and, if severe, death. The earlier in the disease
process intervention occurs, the more effective it is likely to be. If intervention
occurs before the disease process begins or injury occurs, it is primary pre-
vention. If early detection is undertaken during the sub-clinical or asymptom-
atic period, it is secondary prevention, and if there is intervention to prevent
complications from a clinical condition, it is tertiary prevention.

Primary prevention includes weight loss and exercise programs, screening
for blood lipid levels, and safety programs. For those who may be at risk but
have not been diagnosed, we may be asked to implement or collaborate in
implementing screening programs aimed at the early detection of a disease or
disorder - secondary prevention. Examples of these programs include screen-
ing mammographies for the early detection of breast cancer or PSA testing
for prostate cancer. Not all of these tests are equally useful for their intended
purpose. A test may be valuable in the clinical diagnoses of a disease but still
not useful for screening entire populations due to complexity, acceptability or
cost. What do you say when women participating in a breast cancer program
demand equal time for prostate screening for their husbands? Or when some
women want to know why the CA 125 blood test for ovarian cancer is not
being made available to them as a screening test?

The answer often depends on the predictive value of the individual test, which

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**Example**

Maternal education is associated with low birth weight. The less education
the mother has, the greater risk of her having a low birth weight infant. Yet
it is known that smoking, poor diet and lack of prenatal care are the direct
causes of low birth weight. Low educational level although indirectly associ-
ated, is not a cause of low birth weight.

Most (some say all) diseases are multi-causal. With the possible exception
of some infectious diseases, there is more than one causal factor involved
in the occurrence of any disease or injury. Prevention requires removal of
the risk factors directly related to the disease or injury.
in turn depends on its reliability and its validity as shown by sensitivity and specificity. Let's look at how each of these contributes to the usefulness of a test.

First let's consider reliability. Another term used is reproducibility. These terms refer to the ability of a test to give the same result when repeated under the same circumstances. This does not mean that the test is providing a valid or accurate assessment. Validity refers to the degree to which a test provides the true answer or how accurate it is. One way to remember the difference is to imagine shooting an arrow at a target. If you hit the same spot on the target each time, you're reliable. One can rely on your arrow hitting that spot. If you hit the bull's eye, your aim is accurate. The shot is valid.

How is the validity of a test determined? There are two indexes used - sensitivity and specificity. The sensitivity of a test is how often it detects the disease when in fact the disease is present; how many people with the disease have a positive test. These are the true positives. This can be calculated as a percent. No test is 100 percent sensitive. Sensitive tests are of value when the probability of the disease is relatively low and the population at high risk can be identified. The specificity of a test is how often it indicates.

Example
It has been shown that in trying to determine the dietary intake of a population, repeated surveys using 24-hour recalls provide the same general picture. For instance, pregnant women report an intake of about 1600 calories a day. However, when a group of pregnant women are observed eating throughout the day and the food served is weighed before and after meals, the calorie intake is about 2400 calories. This would suggest that 24-hour recalls are reliable but not accurate or valid.

Example
A mammogram, the used test for breast cancer screening, may miss from 10 to 20 percent or more of existing breast cancer. Its sensitivity ranges from about 90 percent for women age 50 and older to 80 percent in women 40 to 49 and even lower in women 35 to 40. Why are so many cancerous tumors missed? The problem may be the location of the tumor or the density of the breast. A mammogram may not detect a tumor in an obscure location. Also, since younger women tend to have breast tissue that is about the same density as the tumor embedded in it, a mammogram may not be as useful for early detection of breast cancer in younger women. The tumor cannot be seen on an X-ray. The sensitivity of a mammogram depends largely on the ratio of fat to tissue in the breast.
There are some tests that are highly sensitive and some that are highly specific. There are very few that are both. As sensitivity goes up, specificity goes down and vice versa. Most tests work best when there is reason to believe that the individual undergoing the test may have the disease, or is in the high risk group.

The use of hormonal replacement therapy further complicates the picture since it may increase the density of the breast and thus lower the sensitivity of the test in older women.

Why do we use tests with low sensitivity, specificity or both? Because this is the best that we have at this time. And that is true for every screening and diagnostic test. There are other considerations in whether to use a test, particularly for population screening. The first of these is, is finding the disease going to decrease morbidity or mortality? Do we have an effective treatment or the facilities for treatment? If not, early detection may merely increase physical and mental suffering without helping the individual. An example of an untreatable disease is Alzheimer's, where early diagnosis may only add to the patient's and family's distress with no identifiable benefit.

Secondly, how rare is the disease? Broad testing for rare conditions requires that very large populations be tested. This may be cost prohibitive. For instance, unless certain defined groups can be identified as at high risk for HIV, it would not be cost effective to test the entire population because HIV infection is so rare. A third issue is how many people would have positive results when in fact there is no disease (low specificity)? To flood the health care system with these false positives would add an additional cost burden in addition to raising the anxiety levels of the individuals affected. It may also lead to actual harm if healthy individuals are subjected to unnecessary medical procedures.

In the case of a potentially lethal disease such as breast cancer, some of these considerations may be less important than detecting the disease and saving lives where possible. For younger women, this point is still being debated. Screening mammographies are recommended despite the lack of high sensitivity in all cases and relatively low specificity. They have been shown to save lives especially in women over the age of 50.

There is currently a movement among some women's groups for widespread screening for ovarian cancer. It has been discovered that women with high levels of a tumor marker, CA 125, have a greater than average risk of developing ovarian cancer. The test, however, is neither sensitive nor specific enough for use in screening. CA 125 is not always found in women with ovarian cancer (low sensitivity). Conversely it may be found in women with other cancers or in women with non-cancerous ovarian conditions (low specificity). It is not an
accurate screening test for ovarian cancer. Presently, CA 125 testing is used as one of several tests to determine the re-occurrence of ovarian cancer in women who have been treated for the disease, a very high risk group.

And then there is prostate cancer, which at first glance may seem to parallel breast cancer as an opportunity for saving lives through screening. It is known that a substantial proportion of the older male population will develop prostate cancer and that this disease ranks second as cause of death from cancer among males. Because of this, there has been a demand for population screening. For prostate cancer the situation is not that clear. Although high levels of a prostate specific antigen (PSA) in the blood may indicate prostate cancer, PSA levels may also be higher in men with non-cancerous prostate conditions (low specificity). The situation is further complicated by the fact that it is also known that most older men will have evidence of prostate cancer at death but will have died from other causes. Since unnecessary treatment for prostate cancer due to false screening results may be harmful, and just when and how to treat the disease is still not entirely clear, population screening is not advised at this time.

Here we have been addressing screening tests. Because no screening test is 100 percent sensitive or specific, it usually takes multiple tests to determine a disease state with certainty. These tests contribute to the clinical diagnosis of a disease.

**Section 4: Study Methods and Rules of Evidence**

With the new and often contradictory discoveries on health and disease being made public daily, knowing what to believe, much less to convey to others, has become a major problem. How do we sort it all out?

One way is to have some understanding of where the information came from; how conclusions were arrived at. There are three major categories of health research: descriptive studies which provide information on the patterns of disease occurrence in human populations, observational studies which allow us to follow the course of disease, and experimental studies which involve an intervention.

**Descriptive Studies**

Descriptive studies focus on personal characteristics of diseased and non-diseased individuals including age, race or ethnic origin, gender, occupation, and

**Example**

Studies describing the high rates of breast cancer among women of Jewish descent living on Long Island led to the discovery of a specific gene which predisposes certain ethnic groups to breast cancer.
social class. Also important are geographic area and time. Tracking person, place and time are important for alerting the community as to where cases may be expected or when incidence is greater than expected (i.e., there is an epidemic). Descriptive studies, then, assist in health care planning and response. They can also provide clues to the etiology (cause) of disease.

**Observational Studies**

Observational studies are those which seek to determine cause. Observational studies involve the observation of events as they are, as they were, or as they are happening.

The first of these are prevalence studies, also called cross-sectional studies. These studies measure the prevalence of disease or injury in a population at one point in time. They also involve collecting information on certain characteristics of the population being surveyed, both those with and those without the disease. Associations or relationships can be shown from this data; cause, however, cannot because it is not possible to establish the time sequence. Did the development of the disease precede the event? Prevalence studies may suggest hypotheses for further study but do not themselves establish cause. Claims that a cause of disease has been determined from a prevalence study - a survey showed - can be dismissed out-of-hand. Prevalence studies are limited to conditions that are relatively common.

The second observational method is retrospective. That is, persons with a disease or injury are interviewed to determine what the situation was in the past. This is then compared to information on the same characteristics and events as recalled by a control group of individuals without the disease. Much of the data collected depends on the individual’s ability to recall events. These case-control or retrospective studies have a number of problems, in addition to recall bias, including establishment of time sequence and selection of controls. But because case-control studies begin with a pool of patients, they are particularly appropriate for studying rare diseases. Case-control studies may generate hypotheses for further study but do not by themselves establish cause. It has been found, however, that multiple case-control studies in which findings concur can be an efficient method of approaching cause.

The third type of observational study is the prospective or cohort study, which begins with a cross-section of a population, notes the characteristics of interest, determines and drops from the study those with the disease, and then follows the initially well group over time to observe the onset of disease. Cohort studies also subjects to study and control groups. Another name given these studies is incidence studies since they are determining relative incidence between groups. These studies can determine time sequence and, despite having other problems such as potential loss of participants over time, are the only observational studies from which cause can be ascertained. The
term cohort is derived from the early Roman legions who fought to the last man. A subtype of the cohort study is the randomized trial in which participants are randomized to the exposure.

So why are cross-sectional and case control studies done more often than cohort studies? Because they are quicker, far less expensive, and more timely. While cohort studies provide answers with greater certainty, repeated case-control studies have shown to often be almost as useful in less time and at far less cost. Further, in the case of a rare disease, the time and cost of recruiting and following enough people to amass a group large enough for study would be prohibitive.

**Experimental or Intervention Studies**

The difference between observational studies and experimental or intervention studies is that in an experimental study the investigator intervenes so as to affect the outcome of the study. Some action is taken rather than observation only. This is usually removing or reducing the alleged cause from treating or modifying treatment in the study group. Otherwise these studies resemble cohort studies in that they are prospective, are randomized, and have control groups.

Because of the investigator's ability to manipulate the study variables, cause and effect can be demonstrated. Changes between outcomes in the study and control groups are more clearly shown. The major drawback in experimental studies, whether clinical trials or community intervention studies, is the possibility of unethical behavior on the part of the investigator. Before doing anything to groups of people, the investigator must have solid evidence that the intervention is going to be helpful and not harm the individuals involved. To protect human subjects, institutions employing researchers must have Institution Review Boards (IRBs) to review and approve any proposed research involving human subjects.

**Rules of Evidence**

As seen from the foregoing discussion, determining cause is a painstaking process. We first accept that all studies are inherently flawed in some way - sometimes seriously, sometimes in minor ways. Additionally, no disease or injury is likely to have a single cause.

Sometimes multiple causes interact to produce an effect greater than the effect of either of them alone or of adding their separate effects together.

An example of this is cigarette smoking, alcohol and lung cancer. Cigarette smokers have a risk of lung cancer that is nine times that of non-smokers.
Alcohol alone does not cause lung cancer. However, the combination of heavy alcohol consumption and smoking increases the risk of lung cancer to sixteen times that of non-smokers.

So how, to the best of our ability, do we determine actual cause or causes in order to identify the most appropriate intervention point for action or to determine an intervention point when cause is not known as in breast cancer? Or even to withstand the constant onslaught of breaking news on health? We look to the rules of evidence that have been formulated to help us make informed decisions in the health arena. These are presented from the strongest to the weakest.

1. **Temporal relationship between cause and effect.** Cause precedes effect. Only prospective studies - cohort and experimental - can establish temporal relationships.

2. **Strength of the association.** The larger the risk ratio, the stronger the evidence for causation. Relative risks of two or more are considered significant.

3. **Dose-Response relationships.** When increases in dose or exposure to the purported cause results in a corresponding increase in effect, a dose-response relationship exists. This strengthens the argument for cause and effect. A caution here is that there might be some other factor which is related to both purported cause and the effect which is influencing both of them.

4. **Reversible associations.** If removing a risk factor results in a decreased risk of disease, i.e., the effect can be reversed, it is more likely that the factor is a cause.

5. **Consistency.** When several studies conducted at different times under different circumstances produce the same results, evidence for a causal relationship is strengthened. That does not mean, however, that several seriously flawed studies outweigh one well designed and carried out study.

6. **Biologic plausibility.** Biologic plausibility depends on our knowledge of the mechanisms of the disease under study. Is there a reasonable biological explanation for the findings of cause and effect? Sometimes these explanations do not exist at the time of the findings. Other times findings simply do not appear to make biological sense as in the case of the purported cancer cure Laetrile.
7. **Specificity.** This refers to one cause, one effect. This is more likely to be so in acute infections but not in chronic diseases. One factor may cause several diseases, and several factors may be necessary to cause a single disease.

8. **Analogy.** Finding an analogous example to compare a finding to helps to strengthen the case for cause and effect. This is the weakest of the rules of evidence.

Again, why do we care about all this? Because if Extension is going to develop and deliver health promotion programs or work with those who do, we need to be able to use a common language, interpret health information, and use this understanding to identify the appropriate intervention points for effective programming.
What is Community Assessment?
Community assessment is a systematic and organized effort to find out more about a specific community or target population within a community. It is a process that helps health educators, community developers and community members identify a community/population's resources, readiness for specific types of change, needs and problems, demographics, values and beliefs, behaviors, policies, social-economic-political relationships, image of itself and its goals, its past history, and recent changes. Community assessment is one integral part of the planning, implementation and program evaluation process. It is a tool we can use as we undertake our efforts to improve the health of the individuals, families and communities we work with. The product of a community assessment or analysis is a dynamic community profile.

In health promotion, there are three major assessment traditions which today tend to be blended together. These three traditions are the medical science approach, the health planning approach, and the community development approach.

The medical science approach is often associated with more traditional views of health as the “absence of disease.” Medical science assessment reasoned that in order to reduce disease, there first had to be a record or mapping of disease occurrence and an attempt to associate those disease occurrences with demographic factors, environmental health hazards, and lifestyle habits. Discovering and/or mapping these associative patterns was the role of “experts” and there was no direct citizen involvement. However, the approach opened up the opportunity for broader and more inclusive approaches to assessment and disease prevention. The outcomes of these earlier epidemiological assessments gave rise to our understanding of the links between health status and lifestyle behaviors as well as the link between socioeconomic status and health disparities. From there we have come to recognize the link between community development and health as well as the role of ordinary citizens in shaping health promotion efforts that are most likely to affect lifestyle choices and health-related behavioral risk patterns.

Initially, the health planning approach tended to focus on issues related to the delivery of services. The 1965 Health Planning Act, which was terminated in 1987, established Health Service Agencies that were mandated to involve consumers. However, conventional authority resided in representatives of the medical service delivery system, and a good deal of emphasis was placed on access to advanced medical procedures and access to hospitals providing secondary and tertiary care. There was little emphasis placed on health promotion. Today, we better understand the link between primary care access and disease prevention. Assessments of access to care focus on more than the availability of medical care services. Rather, assessments examine a number
of cultural, financial and pragmatic barriers to the utilization of service as well as the availability of both primary and advanced medical services. The link between the availability of services and community economic development is often a topic for discussion. Therefore, as happened with the medical science assessment tradition, the roles of citizens and community development have become important to the health planning approach.

The community development approach looks at health in the broader context of socioeconomic issues and, as is described in documents of the Healthy People Healthy Communities Objectives for 2010, links overall quality of life to health. This means that assessing issues affecting health includes a broad set of questions and involves a broad group of citizens.

Currently, these three assessment traditions are often part of a broad assessment process that brings together secondary data collected and analyzed by epidemiologists, secondary data on health service delivery and utilization, and primary data collected by health education professionals and lay people in our communities.

Currently many community assessments for health promotion have five components:

1. a demographic, social and economic profile compiled from census or local economic development data resources,
2. a health risk profile (including behavioral, social and environmental risks),
3. a health/wellness outcomes profile (morbidity/mortality data),
4. a survey of current health promotion programs and health related services, and
5. special studies of target groups, awareness levels, perceived needs, organizational capacity, etc.

**Why Conduct Community Assessment (Can’t We Just Skip Over This Step!?)**

Community assessment is sometimes referred to as community diagnosis. Essentially, we conduct assessment because we want a foundation for making wise decisions and choices. Good physicians and medical care providers get to know their patients and make diagnoses before undertaking treatment; good health educators and community developers get to know the community and diagnose it before recommending actions or developing interventions designed to improve health.
Community assessment can help us understand the environment in which we will be working; it can help us describe health problems as well as grapple with root causes for those problems and identify resources and assets for tackling the problems. Community assessment can also help us learn how community members feel about issues and what they think needs to be done about it.

Experience from the Centers for Disease Control and Prevention’s PATCH program has also provided evidence that the community assessment data gathering and analysis process is a primary source of local empowerment. While many communities spent up to a year gathering and analyzing local data, it assisted them in documenting the breadth and/or nature of their local health problems. This, in turn, enabled them to develop specific objectives around which citizens could gather and act. The information could be used to garner outside funding and resources or to galvanize action and resource commitments from within the community. Either way, the community felt a sense of success. The process of conducting and/or participating in an assessment often is the first opportunity to involve citizens in health promotion action and contributes to greater awareness and ownership of the program by local people. Community analysis can reveal areas affected by public policy and lead to a greater citizen engagement in the legislative and executive policy-making process.

On a more programmatic level, a good assessment increases our chances that we develop an appropriate prevention program or intervention. We are more likely to creatively guide our work so that it has a greater likelihood of positively affecting issues. Because there are usually more issues to deal with than are feasible simultaneously, community assessment can help us make decisions about priorities.

If done in a broadly participatory way, community assessment can benefit many people. Those experiencing problems can share their perceptions of their needs and the resources they would like to acquire and/or develop. They can learn of future opportunities to become involved in addressing their needs. Service providers can become more efficient and effective. Community leaders will have a better knowledge base to make better decisions and pursue more effective action, and you – as a member of the community – will benefit as assessment data is used to improve the quality of life for all citizens.

**Who Should You Involve in Planning Your Community Assessment?**

Before you begin a community assessment, it is critical to get the “right” members of the community involved. “Right” means people who come to mind quickly but also those that we might have to “search out” and those that we might instinctively prefer not to involve because we know they hold different perspectives than ours.
Whom you involve may depend in part on how a small core group focuses the assessment. For instance, have you already decided that adolescent pregnancy is a focus because prior data documents it as a problem or because your organization is mandated to focus on that issue? Are you beginning a broad-based process of issue identification, or are you looking broadly across your community in order to choose focal areas?

Conversely, choosing an assessment focus will differ depending on who is making the decision. For example, sexually active adolescents may want to shape the data gathering/assessment process very differently than a group of adults who are only willing to focus on the encouragement of abstinence. Ideally, those involved in the assessment planning process will be representative of those who will be approached during the data collection phase. While realistically the time and resources at your disposal will affect whom you involve, it is important to bring breadth and diversity to the assessment planning process. Keep in mind a few adages such as: two eyes see better than one; perspective is everything; and location, location, location! Involving a gang member and a parent of a gang member on your assessment planning team is likely to lead you to a different set of questions than if your planning team only involved local police.

One way to frame your decision-making about who to involve is to think about who is affected by health promotion programs in your community such as those experiencing problems or at-risk for problems; service providers; community leaders; and community members who might participate in programs, volunteer in conducting programs, vote on policy related issues, etc.

You might think about various sectors of the community to involve (i.e., health care providers and facilities, educational institutions, government agencies, economic/commercial organizations, labor organizations, media, religious groups, voluntary and private organizations, social and human services). One of the very first assessment activities you may want to undertake is a leadership assessment to identify both recognized and under-recognized or non-traditional leaders. Then involve them in subsequent assessment planning activities.

The CDC PATCH Project approach, the National Civic League’s Healthy Communities process, and the Community Solutions to Rural Health program each encourage the formation of a broad community group with a steering committee and a local coordinator to help plan and conduct community assessment. Practically speaking, a small group of three to six people may initiate a health promotion planning process. Community participation in planning and data gathering may grow to 100 people, but the steering committee of about six to 12 will give “shape” to the larger group interests and endeavors.
What Do You Want to Know? What Do You Need to Know?

Careful planning is critical to a successful community assessment. Often we begin with a broad picture and an ambitious set of goals about what we want to know. However, those ambitions may have to be tempered in light of our available money, manpower and expertise. We will then have to prioritize and decide what we think we most need to know.

When deciding about the size and scope of your assessment, discuss the following seven considerations: 1) the likely scope of an intervention that will follow from the assessment, 2) the geographic or target area you want to work in, 3) the size of your planning group, 4) the available staff and expertise - but remember that you may be able to involve community members in helping with data collection, 5) available funding and in-kind support, 6) the potential difficulty or ease of data collection, and 7) the anticipated visibility or potential impact of the assessment.

Before deciding on who you will collect data from or how you will collect data, it is important to identify the key topics you will focus on. If your program is already focused on a particular disease or illness or health-related problem, then it is helpful to develop an ecological framework based on what is already known from research and experience about what affects the problem. What do you need to know about the characteristics of your target population? What are some factors in the family, school and community context that might affect the target audience and/or the illness? Do you need to know more about local norms, values and beliefs that might effect the illness or risk behaviors you are considering in your educational efforts? How familiar are you with community resources? Are you clear in your mind that community resources are much broader than the formal health and human service sector? Are you sufficiently aware of public policies that bear on your areas of concern?

You can also use the five components of community analysis mentioned above as a framework for prioritizing your assessment topic areas, or you might think of your potential topic areas in the context of meeting basic needs for food, clothing, shelter, health and care; relationships between people; community decision-making structures and process; education and socialization; recreation; and beliefs/values/attitudes and perceptions.

Once you have decided the general areas of information desired, then you can begin to formulate specific questions. For instance, if you decided that you need more information on teens in your community, then some sample questions might be:

- What proportion of youth drop out of school?
- Are there certain schools with higher dropout rates?
Do the schools with higher dropout rates experience higher rates of adolescent pregnancy?

What is the number and proportion of all births to adolescents?

What is the proportion of births to adolescents that are second births?

At what grade level are fathers of children born to adolescent women dropping out of school?

The last question might be especially important if you think you might want to focus an intervention on adolescent males who are at greatest risk of impregnating young women.

Depending on how you see the potential scope of your intervention, you may want your assessment questions to focus on family and/or school and/or community context. You may know in advance that you will have no ability or opportunity to intervene with families but that you expect to be able to affect the school context. Then perhaps your core planning group will decide to focus on school-related factors as a topic area when developing questions. Sample questions within that topic area might be:

- Do attitudes about teen pregnancy differ among students who participate in different school extracurricular activities?
- What is the overall norm at a given school regarding adolescent pregnancy (i.e., is it “celebrated,” “hidden” or “scorned”)?
- Do teachers and students have similar explanations for high adolescent pregnancy rates in their school?
- What do students think can or should be done to reduce adolescent pregnancy rates in their school?

Alternatively, within the broad topic area of family, school and community context, you may be concerned about community leadership. Specifically, you might want to ask questions such as:

- Who are the people who will help this project?
- How will leaders want to participate?
- How does the target population perceive the leadership in their community?

Similarly, for different topical areas, specific questions will need to be formulated. The choice of questions will come from current research, from the experience of those involved in the early planning, from current data available for your community, etc.

Essentially this step of deciding what you want or need to know involves brainstorming, starting with what you know, deciding what you still need to
know, and finalizing the questions you will ask. A cautionary note about starting with what you know. BE CAUTIOUS. You may not “know” as much as you think. You or your sources might be wrong. Even experts can have their perspectives clouded by irrational opinions. Are the studies you have looked at recent? Sometimes new knowledge and new theories can make some studies outdated or inappropriate in a couple of years. Do NOT rely on “conventional wisdom,” but instead always keep thinking critically.

**Who Can Provide Current Perspectives and Information Related to What You Want to Know?**

Some of your questions can be answered with currently available data referred to as secondary data. Discussion about sources of secondary data, uses for it, and its limitations is found in another section on this day.

When you are about to gather new data, think creatively and critically about who can provide you with answers and perspectives. Challenge yourselves to think of respondents, interviewees or participants that do not come quickly to mind. Think in terms of community members from diverse backgrounds (e.g., both formal and informal leaders). Do not immediately dismiss certain categories of respondents because you can’t think of a method that will easily be useable. For instance, do not exclude people with limited literacy skills. Maybe instead you can gather insights from them by conducting a telephone survey or conducting personal interviews or training others from their community to conduct face-to-face interviews. Be creative. Be familiar with a wide range of assessment methods. Realize that different methods will be suited to different questions and different audiences. Different methods will also be more or less appropriate depending on the formality and scope of your assessment. You certainly want your instruments and approaches to document what they claim to be documenting (validity). You also want to think that if you used the same approach again, with the same audience, in a similar time frame, that you would get similar results (reliability). But a wide variety of approaches will meet those criteria.

In addition to existing data and other people as sources of information, also consider yourself as a participant observer. Community surroundings/environments can also be an important source of information.

**How Will You Gather the Information?**

So what methods can you use? Whatever methods you use, keep in mind the community you are working with. Tailor you methods to the community’s style of communication. Do not start with an assumption that what you perceive as a problem is perceived by all parts of the community as a problem. Be careful with language or the way you term issues. You do not want to inadvertently offend anyone. For example, referring to people who do not take responsibility
for their own health may seem innocuous to you. But someone who is struggling to balance work and family with a desire to get more physical activity or to eat better may think you are insensitive to imply they are irresponsible. Especially in interview or participant observation situations, remember to ask questions that elicit other people’s perceptions and do not make statements that reflect your own judgments.

Bear in mind that in the description of community assessment it was termed “systematic.” Methods can be more or less structured, as long as they are systematic and do not cultivate bias. So, for certain circumstances, you can consider less structured methods such as windshield surveys or “what’s on my neighbor’s mind” listening sessions. You might want a more structured instrument such as a community climate survey, and if you are interested in comparing your local data to statewide or national data, you might want to consider an instrument such as the behavioral risk factor survey that is used across the country.

A windshield survey or neighborhood walking survey can be a useful descriptive approach. It is surprising how many dimensions of a community’s life and environment can be detected through careful observation. The data collector may be new to the area or community, or he/she may be from some part of the community. Either way, it can be pretty easy to bring your own biases and preconceived notions to the observation. Therefore, it is critical to set those aside. Remember your main purpose is to describe and record or map what you observe. This is the data collection phase, and the meaning(s) or relationships that surround what you observe are more appropriately discussed as part of an analysis phase. It is important to involve a diversity of people in the observation and discussion phases of a windshield survey. You can record your observations in terms of your five senses. You can record your observations in terms of physical, social and economic characteristics of the area. You can combine your observation with active listening and/or interviews. Spend time in restaurants, stores and parks, at bus stops or laundromats, in upscale boutiques and beauty shops as well as barber shops. You are not trained as anthropologists (although you could involve an anthropologist on your assessment team), and you are probably not in a situation that enables you to be an ongoing participant observer for an extended period of time. However, what you gather doing short-term windshield surveys or neighborhood walks might surprise you and open your eyes to a new set of perceptions about a community’s needs, resources, aspirations and struggles.

Another informal way of seeking valuable information from others is a strategy that Community Voices, a leadership development program for untapped natural leaders in predominantly underserved communities, terms “what’s on my neighbor’s mind?” As a leadership development program, they point out
that leaders not only need to have their own visions, but they must be in the habit of listening to the ideas and feelings of others. This is critical for helping to build a common vision, but it is also critical for understanding the dynamics of a community. Leaders are used to listening in meetings, but they need to actively involve community members in sharing their ideas. Really, this is a strategy that most politicians use pretty instinctively. If you have identified five to 10 people who are interested in health promotion or health improvement in your community, you can ask each of them to use this strategy with five to 10 of their friends or acquaintances. You will end up with 25 to 100 brief statements about what matters to a range of people in your community. This is not meant to be statistically representative. It is a qualitative approach that may help you discover themes you want to explore further in a more structured way or that open your core assessment team up to new perspectives. You can begin with a statement such as:

“I am on a team of people discussing how we might improve the health of our community. The other day we were talking about how we want our community to be in 10 years. It was interesting. It made me wonder what other folks envision for our community. What would you like our community to be like in ten years?”

Or you might want a more specific focus such as youth violence. Then you might begin by saying that you are part of a team of people discussing the health of young people. You can go on to mention that the other day you were talking about the issue of youth violence. Each of the members of your group decided you needed to hear more about what other folks think is contributing to youth violence. What does your friend, family member, acquaintance think? There are a few key critical considerations when using this approach. Use it at places in the community where you normally see people. Keep it informal. LISTEN and do not share your own ideas unless your friend or acquaintance asks you to and then not until after you have heard their thoughts. Only ask one or two people at a time so that you can remember what they say and then write it down accurately.

Especially if you anticipate that your health promotion project will entail cross-agency collaboration, or if your project will involve different leadership groups, you may want to be able to assess the current community climate for collaboration. One way to do that is to develop a community climate survey or a collaboration climate survey. You can develop a series of statements that ask people how satisfied they are with local decision making processes. You may also want to know how people feel about their community and its ability to support health. The climate survey can ask respondents’ perceptions about how much influence certain leaders or organizations have. The climate survey can also be used to determine which public resources respondents find most
adequate/inadequate. Be sure to include demographic information on the climate survey so that you will know if perceptions of community or collaboration climate vary between groups of people.

The behavioral risk factor survey is a key part of the Centers for Disease Control and Prevention’s Behavioral Risk Factor Surveillance System. It was developed in the 1980s as it became increasingly clear that personal health behaviors played a major role in premature morbidity and mortality. There was a perceived need to be able to document the prevalence of the major behavioral risks, the variations in prevalence among different socioeconomic groups and geographic areas, and changes in health behaviors over time. The basic philosophy was to collect data on actual behaviors rather than on attitudes or knowledge. By creating the surveillance system and a core set of questions that would be asked in the same way over time and across all the states, the Centers for Disease Control and Prevention have been able to collect behavioral data that have enabled them to see trends and geographical disparities. While some states have been able to stratify their samples to allow them to estimate regional prevalence, that is still not specific enough for neighborhoods, communities or even counties. It is useful at a state or regional level for planning, initiating, supporting and evaluating health promotion and disease prevention programs, but for a community-based project, you will need to collect that data locally and the exact same questions can be used as in the behavioral risk factor survey. Then you will be able to document changes in your community and compare them to changes across your state. The survey is a telephone survey, so your program will have to have the capacity to administer a telephone survey. It is important that the survey be conducted using a random sample and that it be administered consistently. For this reason, it is often recommended that you employ an outside consultant to assist you. More information on the behavioral risk factor survey is available on the Centers for Disease Control website at http://www.cdc.gov and/or through your state health department’s bureau of health promotion or comparable bureau/department.

There are many methods available to community groups conducting assessments for health education and health promotion planning. The four described above are only a few ideas for collecting primary (new) data; they represent both qualitative and quantitative methods. A description of secondary data - its uses, limitations and sources - is included in unit two of this section. Further methods and approaches are described in another section. Beaulieu’s section is reserved for a discussion of asset and resource assessment. This is a critical approach both for philosophical and pragmatic reasons and, therefore, is covered in more depth.
How (and Who) Will Analyze the Data? 
(Doing Now What Do We Do With All This Data!?)
Ideally, you will have been keenly aware of your key questions and purposes for the data all along. You will have decided to collect only information that you knew how you would use. The questions and potential use should frame your data analysis. But, it can still seem overwhelming. Take a deep breath. Think of it as an adventure. Get excited about what you are soon to discover as you look at the data analytically.

Depending on the nature of the data you have collected, the resources at your disposal, and the training of the people on your staff, you may want to involve an outside person or consultant to help with the analysis. This is true of both quantitative data that you may want statistically analyzed and of qualitative data that will need to be content analyzed. You might find someone at a local community college or you might enlist the support of Extension specialists at your land-grant university. Just as it was important for data collection to be systematic, it is equally important for data analysis to be systematic. Therefore, an initial step in analysis is to organize the data by main topics or by questions. Review the data in terms of your current planning needs and identify themes and patterns. As you identify themes and patterns, you may find yourself developing new questions. Remember, you have to start somewhere and there will be ongoing opportunities to answer these new questions in the future.

As much as possible from the data, you will want to determine trends over time and variations between different sub-groups. With qualitative data you may also be able to identify underlying reasons for the themes that emerge.

Two important caveats about analyzing qualitative data: 1) it is advisable for several people to review and contribute to the analysis so that bias is kept minimal and 2) be sure that one or two vocal people do not overly influence the interpretation or conclusions. As with the process of deciding what questions to ask and who to involve, it is equally important in the analysis stage to involve a diversity of people and to make a particular point of involving people who may think differently from yourself or the core group of the assessment team.

Reporting
The more people who have been involved in developing and/or responding to the community assessment, the more anticipation or curiosity you will have about your results.
Barbara Sugland [10] has identified four keys to success when reporting findings:

1. organize information around a few main points
2. present the information simply
3. choose the “right” people to present the information
4. prepare the information and materials to suit the needs and characteristics of the different audiences you will be sharing your report with.

Consider who are your most important audiences. Will the data have to be presented to a potential funder to ensure continued funding? Will your advisory council or community collaborators need the information so you can engage in collaborative planning? Do community members need the information so they can respond to it or become a greater support for program efforts? Do community leaders need the information? Do members of a specific population group at greater risk need the information before the media puts their spin on the information? Will the media be your ally in getting information out to the community in a timely fashion?

Think creatively about the method of presentation. A two page executive summary will be appropriate for some audiences. Others will want to see charts and graphs. Still others may not be able to easily decipher graphs, and a pictorial representation will be preferable; if you want your report to lead to community discussion, then consider incorporating the main points/findings into a play, skit or musical presentation. Even storytelling can be a way to convey the most important messages.

**Concluding Comments**
Community analysis will take time and resources, and you might be tempted to skip the analysis all together. Before you decide to skip it, think about all the things you wish you knew to help you plan a more “on target” program, or remember the times when you wished you had challenged your own assumptions and knowledge base before you were in a situation of conflict or confusion. Always keep in mind the idea that everyone does not perceive things the same, and if you’re still tempted to skip the assessment, remember Catie Heaven’s [5] comment that “trying to improve the community without first understanding it is like trying to sell pocket protectors to ballet dancers!” It is better to understand the environment in which you will be working!!!

If you decide to undertake a community assessment, you may very well encounter, especially in certain communities or subpopulations, a resistance to
being “studied yet again.” Building trust is a critical step in community assessment. Involving community members as actors and decision-makers in the assessment process can help address these concerns. Ensuring that resources will be available to conduct an intervention after the assessment is important. Making a commitment to involving citizens in the analysis, development of conclusions, and reporting can also increase participation.

Most organizations and endeavors cannot conduct as thorough an assessment as they would like. It is critical, therefore, to make decisions about priorities and begin with a clear sense of the goals and objectives for the assessment. Be ambitious, but also be honest about the amount of skill, money and person power you will have to conduct the assessment. Be prepared to work with outside consultants. Involve as many organizations and citizens as is feasible; strive for a great degree of diversity of opinion and remember that when you think you have diversity, you need to push yourself one step further.

Bear in mind that community assessment is about more than methods. Familiarity with a repertoire of methods is critical if you want to involve a diversity of people and gather the most pertinent and valid information. You don’t want to find yourself in the situation of the young child who only had a hammer so tried to do everything with that hammer. Therefore, a later section provides you with an overview and brief description of a variety of assessment methods.

Community assessment is about more than documenting needs. Practically, it is critical that program planners are aware of the resources available to work within a community. Philosophically, it is critical that communities and specific populations in communities not see themselves entirely deficit. No community or population is entirely deficit. Identifying assets, resources and strengths can be the first step in moving forward in a proactive and empowering manner. Health educators, then, need to understand the asset model and strategies for determining assets. Beaulieu’s section provides you with an introduction to asset mapping.

As critical as it is, community assessment is only one part of the planning effort. And more often than not, the strength and success of your program will be directly related to the quality of the planning process that guided its development. While planning is not sufficient, it is essential; so make a concerted effort to find the time to undertake an inclusive and comprehensive planning-process before embarking on health promotion programs.
References


Introduction
In many communities across the country, it is not uncommon for local leaders and citizens to assemble together to try to make their community an even better place in which to live. Unfortunately, the beginning point for these discussions usually is focused on the various problems and concerns existing in the community. In some cases, these community groups seek the advice of friends and neighbors as to what they feel are the major problems. In other instances, elaborate community-wide surveys are conducted of local residents seeking their input on various topics.

In the end, what is produced is a laundry list of all the problems being experienced by residents of these communities. The list might include concerns with the local school system, the lack of health services, transportation problems, inadequate child care services, limited availability of jobs that pay a decent wage, or the lack of good recreation programs for children. No matter what community you are talking about, or how big or small the community might be in terms of population, community groups that begin taking a hard look at their community by first documenting all of its “problems” are already starting things off on the wrong foot.

That’s not to suggest that communities should try to sweep all their problems under the rug. What it does indicate is the best way to effectively address the challenges that face communities is to have a good knowledge of the resources available to work on local issues. So, an important beginning point involves mapping the assets of the community — the skills and talents of local residents, as well as the capabilities available or possible through local organizations and institutions. Collectively, these resources offer the wherewithal to address the host of important issues impacting the community.

In this brief article, a procedure for mapping the assets of a community is described. The approach is one that has been developed by John P. Kretzmann and John L. McKnight in their book, Building Communities From the Inside Out: A Path Toward Finding and Mobilizing a Community’s Assets [4]. It is a process that can be used in any community and offers an effective strategy for involving a variety of people and organizations in helping bring about improvements in a communities.

While this document embraces many of the key concepts advanced in the Kretzmann and McKnight volume, we seek to extend their work in two important ways. First, we offer a creative strategy for uncovering the pool of individuals who have the ingredients for taking on greater community leadership responsibilities. Second, we discuss the role that community asset mapping can play in promoting the type of community development that is concerned with engaging local people in community enhancement efforts.
Before moving into a more in-depth treatment of asset mapping, we wish to offer an overview of the needs assessment process. We describe this approach and contrast its key features with those associated with community asset mapping. While brief, our discussion is intended to illustrate that local ownership of the needs assessment effort is less likely to occur if not preceded with a sound community asset mapping activity.

**Major Features of the Needs Assessment and Asset Mapping Approaches**

It was not that many years ago that most people involved in community development activities felt that one of the critical first steps in carrying out any community improvement efforts was to uncover the set of problems or concerns existing in a community. In many respects, this appeared to be a logical step. Most communities have finite resources — be they human, physical or financial — and as such, communities must take a hard look at what problems exist in their community. In its simplest form, what needs assessment does is provide a formal tool for identifying local needs, placing needs in order of priority, and targeting resources to help resolve local problems deemed to be of critical importance to the welfare of the community.

One of the unfortunate by-products of starting a community development initiative with the use of a needs assessment tool is that it transmits to local people the impression their community has many shortcomings. This should not be surprising in light of how “needs” are defined. The commonly accepted definition of a “need” is that it represents a gap or discrepancy between an existing state of affairs (the what is) and a desired or preferred result (the what should be) [1]. Just imagine how communities feel when at the end of their needs assessment project, they find themselves confronted with a laundry list of all the things that are wrong with their local areas. Rather, it suggests that community development should begin with a systematic assessment of the assets that exist in the community. There are three major arenas that serve as focal points for uncovering community assets: residents, formal institutions and informal organizations located within the community.
Once we know the full breadth of people, organizational and institutional resources that exist in a community, we can then move in the direction of undertaking a needs assessment. Thus, as priority “needs” are uncovered, we have excellent information about the rich pool of people and groups who have the type of skills and interests needed to tackle these difficult issues.

<table>
<thead>
<tr>
<th>Needs</th>
<th>Assets</th>
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<tr>
<td>Focuses on deficiencies</td>
<td>Focuses on effectiveness</td>
</tr>
<tr>
<td>Results in fragmentation of responses to local needs</td>
<td>Builds interdependencies</td>
</tr>
<tr>
<td>Makes people consumers of services; builds dependence</td>
<td>Identifies ways that people can give of their talents</td>
</tr>
<tr>
<td>Residents have little voice in deciding how to address local concerns</td>
<td>Seeks to empower people</td>
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Sources: Kretzmann and McKnight [4] and Fiscus and Flora [2].

Table 1 briefly describes the distinguishing features of a community development process that begins with “needs” versus “assets.” As noted earlier, when “needs assessment” is employed as the first strategy for determining which issues communities should be working on, a long list of local deficiencies are typically uncovered. Because the number of concerns are so voluminous, it is not uncommon for these concerns to be simply passed on to those institutions typically responsible for addressing such problems. So, education issues are given to the school board, social services to the human services agencies, economic development concerns to the chamber of commerce or economic development authority, land use issues to local government officials, and safety concerns to law enforcement agencies.

This type of divvying up of local problems has some serious shortcomings. For one, it tends to result in a fragmentation in response to local concerns given that only a limited number of people and organizations are involved in addressing local needs. Second, it does not allow local people and groups to explore links that might exist among these concerns. For example, successful economic development activities often are dependent upon the availability of a skilled and educated work force, as well as the availability of good community services.

Unless all the people and organizations who are involved in these various sectors of the community are working together, it is quite possible that one
sector could embrace strategies that will have negative impacts on the other sectors. Third, local agencies charged with the responsibility of addressing these issues generally respond by establishing new programs or policies. As such, the people being targeted with these programs or policies end up being “consumers” of such activities. In essence, they become dependent on those organizations and agencies that have implemented services to address certain local needs. Finally, the needs approach often denies community residents an opportunity to have a voice in determining how local concerns can best be addressed.

In comparison, asset mapping begins with the philosophy that all local residents, regardless of age, gender, race, ethnic background, place of residence, or other characteristics, can play an effective role in addressing important local matters. Local people and organizations are encouraged to explore how problems might be interrelated and to respond to these issues in a coordinated, collaborative fashion. Furthermore, they are asked to give of their time and talents in implementing the strategies they have had a voice in devising. Through it all, local people and groups feel a sense of empowerment because they have been part of the process along each step of the way.

**Defining Community Development**

We hear a good deal about community development. But not everyone has the same view of what community development means. Some believe it refers to “development IN the community,” while others view it as “development OF the community.” Believe it or not, there is a big difference between the words “IN” and “OF” when speaking of community development. Development “IN” the community suggests the major interest is on attracting new businesses, new facilities or new services to the community. It represents efforts to do all that can be done to add to the physical, service and economic infrastructure of a community. This is sometimes referred to as the “bricks and mortar” approach to community development.

Development “OF” the community, however, does not have the physical, service and economic infrastructure as its major focus, at least not at first. Rather, it seeks to uncover and expand the knowledge and skills of people in the community. The belief is that community-wide improvements (be they physical, service or economic infrastructure) cannot be fully realized unless people representing all parts of the community are involved in deciding the future of their community. So, the emphasis is on finding the talents that exist in the community and locating people with the potential to be community leaders [5]. Building on the skills that people already have serves as the best foundation for dealing with the variety of concerns that exist in the community. As such, asset mapping represents an essential step in promoting the development “OF” the community.
According to Kretzmann and McKnight [4], community development activities that are based on asset mapping share three important characteristics:

**Asset-based:** Community development efforts begin by developing an understanding of what exists in the community right now — the abilities of local residents, associations and institutions. It does not begin by focusing on what is wrong with the community or what may be missing.

**Internally Focused:** Strategic planning or priority setting focuses on assets found within the community and does not rely upon the advice of outside experts or consultants.

**Relationship Driven:** Local people, informal organizations and institutions work hard to connect with one another in order to be sure they are working as a team, and not against one another. This means that good communication is essential.

**It Begins With Individuals**
Using “asset mapping” as a technique is most likely to be successful if the individuals, organizations and communities using this procedure truly believe that every community — no matter how small or how poor — has a rich pool of assets. Successfully locating the talents of individuals requires a genuine belief in the following principles:

- Every person has talents, skills and gifts important to a community.
- Each time individuals use these abilities, the community in which they live is strengthened, and these people feel a sense of empowerment.
- Strong communities are places where the capacities of local individuals are identified, valued and used.
- The development “OF” the community is built upon the talents and resources of its members.

Inventorizing the individual assets of a community involves the use of a tool called the Capacity Inventory of Individuals (Capacity Inventory). The Capacity Inventory consists of four important parts:

- Skills information
- Community skills
- Enterprising interests and experience
- Personal information
Each of these components are described more fully in Table 2. The Capacity Inventory represents an effective strategy for uncovering the variety of talents in the community. It is essential that this valuable pool of information be acted upon. To do so, a well-developed plan for translating this information into action is important. Have a good feel for why this information is being collected, how it is going to be used, what timetable you will be following to match the skills of local people with improvement activities of the community. A detailed Capacity Inventory form that can be administered to community or neighborhood residents is provided in the appendix.

### Table 2. Components of Capacity Inventory of Individuals

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<thead>
<tr>
<th>Part I. Skills Information</th>
<th>Part II. Community Skills</th>
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<tbody>
<tr>
<td>• List all the skills that the person has learned at home, at school, in the community, or at their place or work.</td>
<td>• Identify the different types of community work in which the person has participated.</td>
</tr>
<tr>
<td>• Identify the “priority skills” the individual feels he/she possesses (the things they feel they are best at).</td>
<td>• Identify the type of community work the person would be willing to take part in at some time in the future.</td>
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<tr>
<th>Part III. Enterprising Interests and Experience</th>
<th>Part IV. Personal Information</th>
</tr>
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<tbody>
<tr>
<td>• Gather information on whether the person has ever considered starting a business and whether the individual is currently involved in running a business of any type.</td>
<td>• Collect just a few personal information items about the individual in order to be able to follow-up with him/her at the appropriate time. This would include name, address and telephone number.</td>
</tr>
<tr>
<td>• Document what barriers are preventing the person from starting his/her own business; or, if they already operate their own business, what could help the person make his/her business even stronger.</td>
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### Tapping the Talents of Emerging Leaders

In every community, there is an existing cadre of individuals who perform leadership roles, either in visible ways or behind the scenes, within the community. These persons may occupy formal positions of authority in the community, such as local government or political leaders. Others may be employed in important positions within the business, industrial or financial sectors of the community. All in all, these individuals have access to important resources that can be mobilized to influence the outcome of many local issues of importance to the welfare of the community.

However, there are a number of people who have not taken on community leadership roles, but who have the ingredients that make them ideal candidates to be engaged in leadership activities. All it takes is an opportunity to exercise these talents. These individuals often have had modest involvement in community-related activities. These experiences, however limited in their nature, provide the building blocks for expanding leadership in the community.
How might we uncover those individuals who represent prime candidates as “emerging” leaders in your locality? Certainly, the Capacity Inventory serves as a good beginning point for carrying out such an assessment (see the section that explores the “Community Skills” of individuals). However, if you wish to conduct a more extensive assessment of individuals who may have the seeds of leadership in a community, we have prepared a new document titled, Community Participation and Leadership Inventory. This questionnaire delves more deeply into the type of community-relevant activities that individuals may have been engaged in over the course of the past few years. The inventory explores local residents' involvement in the following activities:

- Political or governmental efforts
- Community, civic and service organizations
- Religious organizations
- Social and recreational activities
- Patriotic and fraternal groups
- Education and youth organizations

Active involvement in one or more of the organizations highlighted in this inventory, or working on specific issues of importance to the neighborhood or community, constitute the very seeds of leadership. As John Gardner [3] notes, “tomorrow’s leaders will likely have begun their work by being involved in more specialized types of activities in the community.” The Community Participation and Leadership Inventory is designed to help local areas uncover the leadership potential of local residents, including the leadership talents of those individuals who have been historically left out of decision-making activities within the local community. The key is to make sure that these individuals are offered the opportunity to further advance their leadership skills and to be part of a broader, more diversified local leadership that seeks to include, rather than exclude, local people in important community decision-making activities.

**Local Institutions Can Help Build Community Capacity**

There are certain activities that take place which are intended to meet the basic needs of our society. For example, the family plays a critical role in nurturing, protecting and raising their young. Every society finds a way to meet the social needs of its people. This also happens to be true for many communities. When the strategies for meeting the needs of a community become formal, and expectations develop as to who is responsible for carrying out certain activities, or how people are expected to behave, then we have the makings of an institution. Institutions represent patterned activities that are designed to meet important social needs of local residents. Carrying out these important functions is essential if communities are to continue existing over time. They may be provided by public, private or nonprofit entities.
One of the best ways to remember what major institutions exist in your community is to think of the word KEEPRA. Each letter represents an institution commonly found in most communities. They are as follows:

**Kinship (Family):** The family carries out a number of important activities, such as the care and socialization of the young, providing food, housing, and nurturing for family members, and the biological reproduction of the human race.

**Economic:** This involves the production, distribution and consumption of goods and services in a community. The community’s economic system influences the kind of work available, where jobs are located, how much people earn, the quality of the work environment, the prospects for future jobs, and the level of unemployment and underemployment in the area.

**Education:** The major function of education is to prepare youth to be successful, contributing members of society upon reaching adulthood. This includes preparing them for the world of work but also passing on to them knowledge, values, beliefs and accepted ways of behaving (what we often call “norms”) that we believe young members of our community should learn.

**Political (Government):** The political (or governmental) institution is the arena in which power and authority is acquired and exercised. Its major functions include: (1) protecting the life, liberty and property of local residents (such as enforcing laws and providing police protection); (2) regulating conflict, including developing procedures and practices for resolving disputes; and (3) planning, coordinating and providing public facilities and services to local residents.

**Religious:** The religious institution plays an important role in attending to the spiritual needs of local citizens. In addition, it serves as an important source of support for certain moral values, norms and customs. It also provides residents with personal support in time of need.

**Associations:** Associations refer to the civic, service, social, fraternal, and other voluntary organizations available for people to participate in local activities. They operate with formal constitutional rules and by-laws and operate with a team of officers and/or a board of directors.
Figure 1. The Community's Major Institutions

Kinship

Education

Economic

Religious

Political

Associations
Communities vary in terms of the availability and strength of their institutions. For example, large communities have many schools and churches and a good number of full-time paid professionals working for the local government. In rural areas, however, one might find only one high school, a few churches and a local government managed by officials who are paid little or no salary.

- Link the assets of individuals with the interests and capabilities of local institutions. For example, individuals who are interested in establishing a micro-loan program to support the creation of home-based businesses could link up with a local financial institution and the community chamber of commerce, two groups who may have indicated an interest in exploring innovative strategies for stimulating local economic development activities.

- Actively work to build links between local institutions with interests and capabilities that complement one another. These types of mutually beneficial relationships are what lies at the center of asset-based development.

- Build ties between local institutions and resources existing outside the community. This involves making use of links that local institutions have with larger systems — links that can provide financial, human or physical resources to the community. For example, a local bank that is part of a larger state or regional banking system has access to a large pool of financial capital outside the local area, which can be re-directed to support community improvement activities.

**Informal Organizations: Another Vital Link**

The third dimension of the asset mapping process involves carrying out an inventory of the various informal organizations found in a community. Such informal groups tend to involve people who share a common interest, such as hunting, youth sports leagues, bowling, crime prevention, religious, or political interests. These groups, while successful in using the skills and talents of many individuals, are quite informal in their structure. Thus, they have no constitution or by-laws, have no formal slate of officers/board of directors or members, and tend to gather only when the need arises. One example of an informal organization is the neighborhood crime prevention group that meets on an “as needed” basis to discuss ways to reduce crime in their neighborhoods.

Informal organizations can be key players in helping promote the betterment of any community or neighborhood. In many respects, this is because many local people tend to contribute their talents to local activities that are sponsored by such informal groups. It is through these informal entities that local residents tend to feel empowered.
Examples of informal organizations likely to be found in most communities include:

- Church Groups: prayer groups, stewardship committee, youth group, service group
- Community Celebrations Committees: Annual Fair Committee, Arts and Crafts Festival Committee, July 4th Parade Committee
- Neighborhood Groups: crime watch, homeowner’s association
- Sports Leagues: bowling, basketball, baseball, fishing, hunting clubs

Doing An Inventory of Local Informal Organizations
There are at least three ways in which an inventory of local informal organizations can be undertaken:

Step 1: Examine Printed Materials
The following sources can prove invaluable in identifying some of the informal groups existing in a community:

- Newspapers and local magazines that might highlight the work of local informal organizations
- Community directories that list both formal and informal service organizations in the community

Step 2: Contact Local Formal Institutions
Many of the more formal organizations may be aware of informal groups that have been organized in a community or neighborhood. It is not unusual for such groups to use the following institutions as a gathering place for their meetings:

- Libraries
- Parks and Recreational Facilities
- Churches
- Schools

Step 3: Contact Local Individuals
If time and resources are available, try surveying a sample of people living in various community neighborhoods. Ask those being surveyed to what groups they belong. Questions to pose to these individuals include:

- Can you name any organizations that you have participated in or have heard about? Does it meet in your community or neighborhood?
Is there a local community or neighborhood improvement organization in your area?

Is there any church or religious organization that you are involved in? If yes, do they have different clubs or groups of which you are aware?

Do you get together in an informal way with your neighbors to address common issues of concern?

How else do you feel a part of the community? How else do you get involved in your neighborhood?

As the list of informal organizations begins to take shape, it is important to collect information on the goals and activities of these organizations. This offers a community a wealth of data on the capabilities that already exist among groups in the community. But remember, many of these groups — if asked — are likely to be willing to do more in support of their community or its neighborhoods. So the list can also serve as a beginning point in mobilizing various informal groups that can work together to promote the long-term well-being of the community.

Applying the Asset Mapping Model: Community Economic Development as an Example

In most rural areas, a major task is to create jobs that can offer local residents a chance to earn a decent living and to be positive, productive contributors to the community. Kretzmann and McKnight [4] demonstrate how an effective economic development plan for a community can be shaped using the community asset mapping model. The strategy involves mobilizing the assets of the entire community around an economic development vision and a plan. It entails five important steps:

Step 1: Map the Assets
The beginning point involves an effort to map the community’s assets. Once begun, it is important the process of locating and making inventories of the gifts, talents and abilities of individuals, associations and institutions be carried out on an ongoing basis. Use the following list as a check of whether the full scope of the community’s assets have been considered.

Have we done an inventory of:

_____ The talents of local residents (including new people who have moved to the community)?

_____ The “emerging leaders” that can be found in the community?
Local institutions, including their physical, human and financial assets?
Informal community and neighborhood organizations?
Existing community leaders who are committed to using the gifts and talents of local people, institutions and informal organizations to build a stronger, more vibrant community?

Step 2: Build Relationships and Broaden the Local Leadership
The community becomes stronger and more self-reliant every time residents, institutions and informal groups are linked together in solving local problems or concerns. Part of this process involves expanding the opportunities for emerging leaders to have an active voice in giving shape to long-term economic development strategies for the community — strategies that best reflect the talents, skills and possibilities of people, institutions and informal groups that are an integral part of that locality.

Step 3: Mobilize for Economic Development
In many rural communities, an important economic strategy involves building upon what currently exists in a community. This involves locating and mobilizing the skills of individuals that can be used for economic development purposes, as well as looking at the role informal organizations and institutions can play in promoting economic growth. For example, are there new markets for products that can be developed simply by connecting existing institutions together? Are there goods and services the community might be able to export to other areas? Are there goods and services that the community now imports that could be produced locally?

Step 4: Convene the Community and Develop a Vision for the Future
Having a shared vision and plan is critical to the process of strengthening communities. All members of the community need a voice in deciding what they value most in their community and what direction they would like to have the community take in the next 5 to 10 years and beyond. This dialogue is essential if the community is to move forward. This requires active discussions, debates and disagreements.

In the end, however, the community must have a shared understanding of which priority issues it needs to deal with right now and which problems might be better handled in the future. Once immediate issues are decided, getting the broadest array of people, institutions and informal groups involved as a team helps to further build the capacity of the community to improve the well-being of its members.
Step 5: Leverage Outside Resources to Support Local Priority Activities

When communities have succeeded in mapping their local assets and taken steps to link the assets of the community together in order to address the priority needs of the community, then it is appropriate to locate outside resources. If a community does not have local partnerships firmly established, it runs the risk of having outside resources dictate how things should be done in the community. Strong and active local partnerships provide the mechanism to ensure outside resources are used to support priorities, strategies and action plans the community itself has endorsed and not what some outside individuals or institutions have determined is best for the community.

Summary

Asset mapping serves as an effective tool for understanding the wealth of talent and resources that exist in each community — even those with small populations or suffering from poverty and economic distress. The long-term development of a community rests on its ability to uncover and build on the strengths and assets of its people, institutions and informal organizations. Included are creative strategies to identify and tap the wealth of leadership potential available in every community.

However, to be truly effective, asset mapping must take the essential step of linking these various talents and resources together. In isolation, these assets are likely to realize (at best) only modest advancements in the well-being of local people and their communities. Integration of these assets, however, provides the foundation for genuine improvements in the welfare of these people and their localities. In many respects, it truly reflects a commitment to make development “OF” the community a centerpiece of local community improvement activities — one in which local talents and skills are unleashed, treasured and nurtured over time.
References


Many times elected officials, business leaders and community groups want to improve their community, but they do not have a good handle on where to begin. It may be that they don’t know how the general public feels about a particular issue, or they don’t have an understanding of past and current trends that are shaping the local community. Without this information, communities may start projects that are not appropriate or acceptable to the public or that do not address real issues.

Community assessment is one strategy to help community groups learn more about their community, local issues and assets, and potential directions before planning projects and activities. Simply put, it is the process of learning more about the social, economic and physical aspects of a community as well as the interrelationships among these elements. The information can be quantitative (something you can put a number to) or qualitative (information in descriptive form such as past history or a list of local leaders).

Community assessment is an important tool in community development because it helps local groups understand important background information before programs are undertaken. Each community is unique with its own set of goals, preferences, assets, issues, resources, past history, and potential for the future. A proper assessment can help a community make decisions that are appropriate to its unique set of circumstances. It is useful in:

- Identifying community assets, opinions and goals
- Planning for the future
- Identifying local resources
- Encouraging local participation
- Marketing your community
- Identifying community needs

Community assessment is a general approach to learning more about a community; there is no single method that works best in all cases. In fact, many successful assessments use multiple methods. The following is a brief introduction to several different community assessment methods. Along with an overview of the technique is a discussion of strengths, weaknesses and resources needed to carry it out.

**Secondary Data**

There is a tremendous amount of existing information about cities, towns and counties that is available for public use. Secondary data are simply information collected by someone else that may be useful for community assessment. Sources include the Censuses of Population, Housing, Business and Agriculture; vital records (births and deaths and disease); data collected by state agencies (public school finances and enrollments or tax records); local
administrative data (housing starts); and any other data collected for admin-
istrative or governmental purposes. There is a great deal of secondary data
related to health as well. Most of this information is available for free or at
minimal cost, and it can provide excellent background information for com-

munity assessment. For example, the Census of Population can be used to
find out the age composition of the population in a particular community which
might indicate particular age groups, such as the elderly, that require special
services. Most grants require some type of secondary data analysis to justify
the local situational statement.

Secondary data are relatively inexpensive and easy to use, although there are
peculiar aspects about different data sources that may require the assistance
of a trained consultant. We are fortunate that there is a tremendous amount of
information available to us. However, since secondary data have been collect-
ed by someone else for other purposes, it may not be the exact information
we are looking for. The information may be dated, missing key bits of informa-
tion that we would like to have, or covering larger geographic areas than we
would like. The exact definitions of what numbers actually mean are also very
important. Because of this, secondary data are best used as background infor-
mation and as supplements to other community assessment methods.

**Comparative Secondary Data**

One variation in the use of secondary data is to use it as a comparative tool.
It is often difficult to determine if a particular number is too large or too small
or good or bad unless there is a reference point. Thus, one strategy is to
compare secondary data of a community with that of surrounding communi-
ties, the state or the nation. For example, one can use data from secondary
sources to compare health care or disease statistics with similar communi-
ties or with state or national averages. These data can be used to determine
strengths and weaknesses in the local health care situation. Another com-
parative approach is to look at data over time to determine if and how things
are changing. Trend analysis often reveals important information for planning
purposes.

As with the use of secondary data in general, comparative studies are rela-
tively easy and inexpensive provided data are available. Using a comparative
approach can greatly enhance the insights and provide better direction for
what to do next. However, while the information is based on factual numbers
that are often viewed as being more legitimate, it cannot always provide the
deeper insights as to why things are different in one community compared to
another or why things are changing. As a result, this approach is also best
used as background information or as a supplement to other methods.
Primary Data Collection Methods

❖ Focus Groups
A focus group is a structured interview of a group of 6 to 12 people that has been successfully used by marketing researchers, community developers and others to obtain insights and reactions to products, programs or needs. Participants can be selected at random or chosen to represent different groups within the community. The strategy is to begin with a set of pre-selected questions but allow for flexibility so that the group can expand upon ideas. Five or six questions are usually enough, with the more direct and detailed questions coming later in the session. Focus groups are very effective in getting participants involved in an issue and making them feel that their viewpoints count. Experience has found that the group interaction often stimulates discussion and produces data and insights which may be difficult to secure through individual interviews, surveys or secondary data.

Focus group interviews are relatively easy and inexpensive to conduct. All that is required is a moderator, someone to record the discussion (it could be taped), a predefined set of questions, an adequate meeting room, and some refreshments or light snacks. One group interview could be completed within a two hour session, and for some issues more than one group may be interviewed. Focus groups work best for getting good feedback on alternative approaches to an issue or in exploring a new topic area; they are least effective in dealing with difficult or technical issues. The key to the success of a focus group is a skilled moderator; he or she must have the ability to keep the discussion flowing and encourage participation relevant to the subject without influencing or intimidating participants.

❖ Key Informant Interviews
Key informant interviews are conducted with selected individuals in a community who are involved with or have knowledge of particular situations. Key informant interviews are a way to get "insider information" about an issue, situation or problem. It is the technique often used by journalists when they are preparing to write a story. These interviews can be used to define the nature and extent of an issue, to explain important issues related to a particular situation, to identify community groups or organizations interested or involved in an issue, to get an insider's view of the situation, or to describe possible goals or approaches from the perspective of those who are involved with or affected by the issue.

Key informants are persons who are either involved with an issue as a regular part of their job or volunteer role or are knowledgeable about the community and its citizens and history. As one might expect, key informants may change from issue to issue. A "snowball" approach is often used to identify
key informants; each interview with an informant asks for others who know something about the issue until the list of potential informants grows like a snowball rolling down a hill.

Key informant interviews are a quick and relatively inexpensive way to define the nature and extent of an issue and to identify potential solutions. These interviews help you to see the community situation from several different perspectives. Key informant interviews are also a way of identifying who are the movers and shakers in a community related to a particular issue. However, key informant interviews are useful only if you have been able to identify persons who can offer multiple perspectives on the community. Moreover, it is possible that the views of key informants may not reflect the views of all citizens or groups in the community. Key informant interviews also require a fair amount of time to make contact, arrange meetings and conduct interviews. Key informant interviews are most reliable when only one or two persons conduct the interviews since this helps to insure that the same kinds of questions are asked of all informants.

**Expert Presentation and Testimony**

Expert presentation or expert testimony involves having an expert, or someone who is particularly knowledgeable or experienced in a certain topic, make a presentation to a community group or decision-making body. This type of information provides an in-depth analysis of a given issue from people who have technical backgrounds or experiences which give them insights that are not available to the average person. For example, a doctor may be asked to speak about water borne diseases to a group that is meeting to decide whether the public water system needs to be upgraded, or a university professor may be asked to give expert testimony on changing population trends and their implications for small communities. It is common to have multiple experts testify either individually or as part of a panel.

Expert presentations are often invaluable to community groups who are dealing with new or more technical issues. In many cases the testimony is free, although some experts from outside the community may charge a fee or at least reimbursement for expenses. The value of this testimony depends upon the knowledge of the experts, and it is often wise to hear from several speakers, particularly when dealing with controversial issues. Expert testimony can be used most effectively in conjunction with information gathered from other community assessment methods.

**Environmental Media Scan**

An environmental media scan is based upon the assumption that community situations and issues are reflected in the content of local media (newspapers, radio, television, newsletters, etc.). The strategy is to form a scanning
team, with each member being assigned a small number of media outlets to review on a regular basis. A common form is developed and used by all team members as they record the topics appearing in their assigned outlets. Results from each team member's scan are then compiled on a periodic basis. Issues within the community that are important to a large number of people should surface more often, and there should be indications of the importance and perceptions of different groups.

Media scans have the advantage of being relatively inexpensive to conduct provided there is enough volunteer help available. This method is effective at capturing changes over time. When media outlets are properly selected, they provide input from a variety of community groups. Media scans are a good means of identifying issues and problems in a community, but this is most effective when there are multiple media sources to scan. This method may miss issues, assets and community resources that have not yet surfaced or are not deemed as newsworthy, so it is best to use this method in conjunction with other assessment methods.

**Community Forum**

A community forum is, quite simply, a public meeting held to discuss a certain topic, issue or opportunity. Most commonly, there is a set of short presentations at the beginning of the forum describing the situation or topic to be discussed or outlining several options, viewpoints or approaches to be considered. A moderator then leads the discussions of strengths, weaknesses and outcomes based on the presentations and asks a series of predetermined questions in order to gather the information needed. The moderator makes sure that each person has an opportunity to speak and that the discussion proceeds in a positive and constructive way. A recorder captures the viewpoints and suggestions presented during the forum as well as any conclusions reached and plans for future action. Often, there are a series of community forums held so that follow-up discussion can occur or so that a wider range of individuals in the community have an chance to participate.

A community forum is an excellent way to assess the viewpoints or opinions of citizens about the topic under discussion. The major advantage of a community forum is the openness that is present by having public discussion in which anyone can participate. It also provides people an opportunity to hear various viewpoints and perspectives explained, which leads to better understanding of others in the community. Disadvantages arise when not all relevant groups are represented at the forum and when not every individual feels comfortable expressing his or her thoughts in front of a larger group. If the topic being discussed is a controversial one, there is a danger of the group being divided into "for" and "against," or the meeting may turn into a
shouting match. A strong, well-prepared moderator is a key to a successful community forum.

**Social Surveys**

Social surveys are a useful method of obtaining information about knowledge, attitudes, attributes or practices of the general population. It is based on the notion that people know the characteristics and situations of their communities but often lack a way of expressing their views to local leaders or public officials. Surveys can be used to find out how people feel about alternative programs, what services the community needs, and how well current services are meeting public expectations. Surveys are predetermined sets of questions and usually answer options which are asked of all individuals in a group or sample of people. There are different survey methods as well, including surveys distributed and returned by mail, surveys administered by telephone, and surveys conducted in person or face-to-face.

Social surveys can in some cases provide a method of using results from a sample of people that can be generalized to the whole population. The strategy is to select a representative sample (best done on a random basis); ask questions through a mail, telephone or face-to-face interview; and tally the results for further analysis. If properly done, this approach provides useful and valid information about how the whole population and subgroups feel about situations and issues in the community.

While surveys can provide detailed information about the population of a community, this approach is one of the more expensive and demanding of the community assessment methods. Unless done properly, the results can be biased and misleading. If results are to be generalized to a larger population, the sample must be drawn randomly from a total list of people. The questionnaire must be designed so as not to be biased, misleading or ambiguous. Finally, analysis should be done by someone skilled in survey work and statistics. Because of these demands, most community groups will require expert assistance in order to carry out a valid social survey. Thus, while surveys provide an excellent source of information, they should not be undertaken unless the group is able to devote the time and resources necessary to conduct a valid survey.
Terms
There are terms that you may hear during an information gathering exercise that describe the type of information being collected. Here are just a few; you may add more to this list as you go through an assessment process.

- Primary data are those that are directly collected by an individual or group during the assessment process. Information collected by a survey or interviews is an example of primary data.

- Secondary data are those collected by some other individual, group, or agency, often at some other time of for another purpose. Census data are perhaps the most commonly used secondary data.

- Quantitative data are those which can be represented by a number. Examples are the population of a community, or the percentage who answered "yes" to a question on a survey.

- Qualitative data are more descriptive data, and are often presented in verbal or written form. Qualitative data provide in-depth explanation, such as the history of a community or a description of a set of opinions of community citizens.
High quality infrastructure is critical for quality of life preservation as well as an essential component of growth and development. As facilities and services deteriorate and/or become inadequate, growth is deterred and quality of life is adversely affected. A viable health sector is a major component of a community’s infrastructure. Furthermore, attraction of new firms to provide jobs and economic growth can be extremely difficult without the availability of quality medical services. Several studies support the importance of a quality health sector in rural communities for industrial development and for retaining existing businesses and industries [7,23,31]. Finally, the attraction of retirees can be an effective economic development strategy. Selected studies [30,32,34] have indicated that health services were one of the primary concerns for selection of retirement locations for the elderly. Consequently, it is imperative that rural communities have quality health services.

More changes are occurring in the delivery of health services than ever before in America’s history. Hospital and physician networks are being created. Managed care is being introduced into rural communities. In addition, fiscal problems with Medicare and Medicaid may impose additional financial stress and changes with the delivery of health services in rural areas. Aside from its contribution to existing quality of life and economic growth projects, the health sector provides significant direct economic benefits through employment and income impacts on a community. The objective of this paper is to demonstrate the importance of the health sector to the economy of a rural community and to discuss what community leaders can do to maintain and promote their health sector. More specifically, the objectives are to:

1. Measure the total impact of the health sector on a community’s economy;
2. Illustrate the importance of the health sector for industrial growth;
3. Illustrate the importance of the health sector for retirement growth;
4. Discuss and demonstrate what community leaders can do to maintain and promote their health sector; and
5. Review a community health planning process.

Measuring the Health Sector Impact on the Economy
The health sector at the community level is generally not looked at as a large employer, but in fact it is extremely large. In many rural communities, a rural hospital is often the second largest employer [13]. The largest employer is often the school system. If the employment of the hospital is added to the other health components such as physicians, pharmacies, etc., and the total impact of the health sector is included, health generated employment is often
about 10 percent of a rural community’s employment. When the secondary benefits are included in this analysis, the health sector often accounts for about 15 percent of the total employment [14]. Several selected studies that illustrate how to measure the impact of the health sector will be reviewed.

Christianson and Faulkner [8] measured the impact of a hospital closing on a local economy. Like most studies, they measured the impact of hospital expenditures by employing economic base theory. The study area included rural counties which contained one hospital in Idaho, Montana, Nebraska, Nevada, North Dakota, Utah and Wyoming. Questionnaires were sent to 180 hospital administrators to gather the necessary data for the economic base model. Results showed that the average hospital spent $600,000. Depending upon the multiplier used, the total simulated direct, indirect and induced community income resulting from the hospital was in the range of $700,000 to $1 million.

The economic impact of Saunders County Community Hospital in rural Nebraska was measured in another study by Turner and Mallory [35]. The hospital impact study they conducted was slightly different than others as they estimated the income coming to the community from Medicare and Medicaid. They estimated that 73 percent of total hospital revenue, or $1,278,632, came from Medicare and Medicaid payments. They also estimated that Medicare and Medicaid paid physicians another $383,196 annually. Thus, total Medicare and Medicaid payments were $1,661,828. A multiplier of 2.0 was applied to this to arrive at the total impact of Medicare and Medicaid on the local economy.

Erickson, Gavin and Cordes [17] measured the impact of the health sector on the Pittsburgh Metropolitan area. The objective of the study was to measure the role of the hospital sector on interregional trade and to assess its impact on the regional economy. The results generated an economic base multiplier of 2.69 and concluded that the hospital sector had a large export component; it generated regional income and employment equal to $655 million and 22,000 jobs, respectively.

The impact of a rural hospital was estimated by applying a simulation model to Stigler, OK [12]. Stigler is the county seat and the largest community in the county with an approximate population of 2,600 in 1986. The model is a recursive system of equations built around an input-output model. The base of the simulator model is the input-output model. County input-output models are available for each county in the United States through the USDA IMPLAN project.

To measure the impact of the hospital, the researchers ran two runs on the simulation model. The first, or baseline run, assumed that the hospital and
other sectors would maintain the same growth patterns as exhibited during the preceding five years. The second run, called the impact simulation run, assumed the hospital would close. Employment loss during 1988 (the year the hospital is assumed to close) was 51 jobs. This included the 43 hospital jobs. Thus, the indirect or induced loss of jobs in other sectors of the economy was 8 jobs. As employees who lost jobs could not find other employment, migration would begin, and more indirect and induced jobs would be lost. The total loss of jobs would be 78 in 1992, five years after the hospital closed. The study also presented estimates of population, income, retail sales and sales tax collection losses from 1988 to 1992.

A recent study [24] measured the economic impact of a hospital on rural communities. The researchers used survey data and an economic base model. The researchers estimated direct and indirect economic effects of four rural hospitals located in Utah. Hospital A is 20 miles from a regional medical center and services a rural constituency. Hospitals B and C are in agricultural areas, and both are about 80 miles from a major medical center. Hospital D is located in an agricultural and mining area, approximately 150 miles from a major medical center. Direct and indirect employment estimates were made using an economic base model. The hospital alone accounted for 4 percent to 9.3 percent of the service area employment.

One study [18] measured the impact of rural physicians on a community’s economy. Again, the community simulation model as discussed above was employed. First, the model generated a baseline estimate tied to the assumption that the physicians would continue to practice. The second run assumed the physicians would not practice in the community. The difference between the two runs measured the impact of the physicians on the community’s economy. The study community was Pawhuska, OK, a community of approximately 5,000 residents located in a relatively isolated part of Oklahoma. The community had three full-time physicians and one retired physician who worked one day a week. Thus, it was assumed that 3.2 FTE’s of physician services were available. It was estimated that the physicians and their offices accounted for 15.2 jobs. Based on an employment multiplier of 1.78, the total community employment effect was 27 jobs. The results also illustrated the impact of the physicians on income, retail sales and sales tax collection.

Very few studies address physician practices, and none study the other components of the health sector. Moreover, in contrast to the above academic-based studies, this paper offers a previously unavailable tool to permit users to perform economic impact calculations for their communities by plugging in local data.

A model to estimate the economic impact of the health sector has been devel-
oped by Doeksen, Johnson, and Willoughby [14]. It uses data and regional tools that are available at the county level. Noble County, OK, will be used to demonstrate the model. The county is located in Central Oklahoma and has about 11,000 residents. The model has five health sectors which include a hospital; physicians, dentists and other professionals; nursing homes and other residential facilities; other medical and health services; and pharmacies. Employment and payroll information associated with each sector needs to be locally collected. For Noble County, the data are presented in Table 1. These are referred to as the direct economic activities and do not include the secondary benefits that arise due to employee and business spending. In Noble County, there are 100 people employed by the hospital - 43 by physicians, dentists and other professional offices, etc. Total health sector jobs are 292.5 with a payroll of $6,820,500.

The secondary benefits are measured by county employment and income multipliers. These multipliers measure all secondary impacts of the health sector dollars as they flow through the county. The multiplier and impacts on Noble County are presented in Table 2.

The data in Table 2 clearly demonstrates the impact for each health sector and for the total health sector. For example, the hospital has 100 employees, and the IMPLAN multiplier for that sector is 1.46. Total employment impact is 146. Total income from the hospital activities is $3,158,870; retail sales $947,661; and three-cent sales tax collections are $28,430. The total impact of the health sector on the economy is 457.6 jobs; $9,528,735 in income; $2,858,621 in retail sales; and $85,759 in sales tax.

The procedure has been applied to nine Oklahoma Counties within the past year. Summary statistics are provided in Table 3. Key results from these studies include:

- About 9 percent of all employment is directly working in the health sector;
- About 14 percent of all employment is attributed to the health sector;
- Employment multipliers ranged from 1.30 to 1.81;
- Income multipliers ranged from 1.45 to 1.87;
- Hospitals are often the second largest employer in the county; and
- Nursing homes created a very large number of jobs.

It is clear that the economic impact of the health sector on these counties is tremendous. If the health sector increases or decreases in size, the medical health of the county, as well as the economic health, will be greatly effected. For the attraction of industrial firms, businesses and retirees, it is crucial that the area have a quality health sector. Often overlooked is the fact that a “healthy” health sector greatly contributes to the economic health of the county.
Importance of the Health Sector for Industrial Growth
As rural communities attempt to diversify their economies, retaining existing businesses and industries and attracting new businesses and industries are generally growth strategies. The question that arises is how important is the viable health sector to business and industrial decision-makers as they evaluate a community for locational purposes. Research studies investigating this hypothesis are few. One study [23] found that quality-of-life (QOL) factors are playing a dramatic role in location decisions. The study concluded, “In fact, almost half (facility planners) say QOL considerations are controlling both initial screening and final site selections.”

The most important QOL variables were transportation, education and health. Another related finding by Lyne is the role of health care costs in industrial location decisions [22]. Specifically, Lyne’s survey of corporate executives indicated that corporations are sometimes giving priority to sites which provide health services at low costs as a tie-breaking factor between comparable sites, to the extent that rural areas are often able to provide health care at lower costs than their urban counterparts. This development may bode well for at least some rural areas.

McGuire [25] conducted a detailed review of the literature and reports that, “...the evidence appears to be that there is a positive and perhaps strong relationship between infrastructure and economic development.”

Importance of the Health Sector for Retirement Growth
Retirees form a special group of residents whose spending and purchasing can be an important source of local jobs. Additionally, middle and upper income retirees often have substantial new worth. Many rural areas have environments (e.g., good climate and outdoor activities) that enable them to be in a good position to attract retirees. Retaining retirees is, of course, just as important as attracting new retirees, and the rural population contains a relatively high proportion of elderly, including retirees. The amount of spending “embodied” in this population, including the purchasing power associated with Social Security and other transfer payments, is substantial. Hence, a critical economic development question is the extent to which the availability of health services influences the location decision of retirees. Although the data are limited, at least several studies suggest health services may be a critical variable.

For example, Toseland and Rasch [34] conducted a survey of 878 persons, 55 years of age or older, in 28 communities in the U.S. The four items that were the best predictors of retirement location were safety, recreational facilities, dwelling units and health care. As another example, Reginier and Gelwicks [30] surveyed 221 people, 60 years or older, who were considering a retire-
ment community. Nearly 60 percent said health services were in the “must have” category. Only protective services were mentioned more often than health services as a “must have” service. Finally, a case study in rural North Carolina [29] noted that the:

“lack of local long-term services and hospital beds has resulted in increasing numbers of seniors being forced to receive medical care in the same distant locations (50 miles away or more) as they are hospitalized. This has resulted in a service displacement cycle in which many of these seniors have been forced to relocate in order to receive needed rehabilitation and support services” (p.44).

What Can Rural Community Leaders Do?
The above sections clearly indicate that a viable health sector is needed for rural economic development. The question now is, “What can rural leaders do to insure a community has a viable health sector?” Answers to this question are not easy and will require hard work by rural health decision-makers. Much can be learned from experiences of others and research projects. The Office of Rural Health Policy [27] studied innovative health programs in five rural communities in Alabama, Iowa, Oregon, Texas and Wisconsin. Each embodied a very different system of innovative health care delivery. However, five common themes emerged relative to the underlying community dynamics. The themes were:

1. **A realistic perspective on health care delivery.** Each community was objective about the circumstances it faced as the innovation began and evolved…

2. **The willingness to identify, develop and pursue non-conventional solutions.** New problems may require new solutions, but too often the same approaches reappear. This was not the case, however, among our case study sites. Each demonstrated in its own way a certain defiance of conventional wisdom and a willingness to imagine and take risks – risks that were “rational” within the constraints of its own situation…

3. **Frugality and tight management to carefully allocate limited resources.** Operating profits and other forms of development capital for health care delivery improvements are scarce in rural communities. The scarcity is more profound in the smaller, more isolated communities that are least able to sustain local health care capability. Furthermore, the rural population is generally poorer and more fiscally conservative than their metropolitan counterparts…

4. **The ability to gain support from local health care consumers.** All of the case study innovations had strong, though not unanimous, local public
support…

5. **Political effectiveness – communicating the needs of the innovation to those outside the community who could offer assistance.** Political effectiveness, the ability to gain needed external political support for their local innovations, was important in each case study sites (p. 41-42).

These five aspects of the community environment are not always present nor are they always easy to develop. Fortunately, there are organized processes that are often helpful in enabling communities to work through in a systematic fashion their challenges, opportunities and options. The above themes apply to all health components. The role of local initiative and creativity is crucial and vital. Without it, the health sector and local economy will deteriorate. One local action is to conduct strategic health planning.

**The Health Planning Process**

Strategic health planning is a process. The process assists local communities to identify their health care needs; to examine the social, economic and political realities affecting the local delivery of health care; to determine what the community wants and realistically can achieve in a health care system to meet their needs; and to develop and mobilize an action plan based on their analysis and planning. Strategic health planning involves cooperation among people and organizations to pursue common goals. The process is designed to answer three questions:

1. Where is the community now?
2. Where does the community want to go?
3. How will the community get there?

The process should be started when community citizens have a shared need for health care, when community leaders can be mobilized to take action, and when a resource team or facilitating group can be identified to assist the community to carry out the process. The strategic health planning process must be “community driven.” The community, as represented by the leaders, must “own” or “drive” the process; it should be community-based, not hospital-based or health care provider-based. Local residents and their leaders must come forth; a current knowledge of the health care industry is not necessary. This process is about local people solving local problems. The local hospital and health care providers should have input into the process and should support and “trust” the process. But the community must provide the energy and commitment.

The strategic health planning process is outlined in Figure 1 and begins with a group of citizens of a community becoming interested in reviewing and analyzing the health care system of the community. This group of citizens is
the initiating group (Figure 1). Often, the initiation of the process may result from a change in the current health care delivery system such as the loss of a physician or a hospital or a change in the type of services or facilities offered. A community that is not currently experiencing changes or problems in their health care system can also benefit from strategic health planning by enhancing or improving the current system. The initiating group of citizens will form a Community Health Steering Committee to work through the process of strategic health planning, developing a plan, and implementing a plan.

The Community Health Steering Committee will work closely with an outside Resource Team. The Resource Team consists of representatives from the Oklahoma State Department of Health, the Oklahoma Office of Rural Health, the Area Health Education Center (AHEC) in the community’s area, the Oklahoma Cooperative Extension Service, and the University of Oklahoma Health Sciences Center. The goal of the Resource Team is to create an interagency Resource Team available to assist Oklahoma rural communities with health planning and to create a process for rural communities to use to enhance local health care systems. The Resource Team offers technical assistance to the local community with the development, presentation and analysis of data and information, surveys, and health services and facilities as well as with analytical skills, facilitation skills, and strategic planning skills. The utilization of an outside Resource Team is necessary as the Resource Team is trained in the community development process and has health sector expertise. The Resource Team also has contact with other federal and state agencies and other organizations which may be able to provide special technical assistance and other resources.

Communities must fully understand their health care services and needs, as well as other factors that influence how health care services are provided, in order to make wise decisions in the planning process. To develop a strategic health plan, the Community Health Steering Committee will need information and data about the community and will need to communicate with the community. As specified in Figure 1, the Steering Committee will divide into four task forces which include:

1. Publicity,
2. Health Services and Facilities Inventory,
3. Community Survey, and
4. Data and Information.

The Publicity Task Force will provide news articles, radio announcements, and other public notices, including meeting notices for the Community Health Steering Committee.
The Health Services and Facilities Inventory Task Force will gather detailed information on all health services and facilities provided within the community. A result of this task force could be a directory of health services and facilities in the community. The Resource Team can be helpful in gathering the basic health services and facilities data. However, the committee members will know the local services and facilities first-hand and will be critical in determining the accuracy and completeness of the directory.

The Community Health Survey Task Force will design a survey, have the survey conducted and analyzed, and will review the results of the survey analysis. This task force will determine the local community’s opinions and needs related to the health care system by obtaining input and feedback from the community. The Community Health Survey Task Force will review the community survey results to determine the need for further community analysis of specific needs. The Resource Team can assist with conducting and analyzing a survey and can assist with the determination of the need for further community analysis.

The Data and Information Task Force will gather and analyze all current sources of data and information about the community’s health care system. Demographic, economic, and health data and information are available from many different sources. The Resource Team can be helpful in gathering, presenting, and analyzing this data and information.

After the task forces (except for the Publicity Task Force) have completed their research and analyses, a final report with main points of emphasis from each task force will be presented to the complete Community Health Steering Community. The information from these three task forces will be reviewed and integrated and duplications eliminated. The Steering Committee will then determine the main points of emphasis to build a plan of action.

Research may be needed on some of the points of emphasis to determine what course(s) of action is (are) feasible. The Resource Team can assist with developing further information related to specific points of emphasis. Some examples of research requests based on the planning process in Oklahoma are:

- Feasibility studies for family practice physicians, OB-GYN specialists and pediatricians;
- Feasibility study for outpatient rehabilitation services; and
- Feasibility studies for adult day services.

After all items have been thoroughly researched, the Community Health Steering Committee will review the final information. A proposed plan of action
will be completed, with a timetable and specific steps of action for implementation.

The proposed plan of action will be shared with the community through a community-wide meeting (Figure 1) and through the news media. The communication and acceptance of the plan of action by the community is crucial for accomplishing results. All members of the community should have an opportunity to provide input, discussion, updating and/or altering of the plan. The Community Health Steering Committee will then modify and revise the plan. The final plan will include specific community assignments and deadlines. A system for reviewing the results of the plan of action must be determined, and follow-up is important for accomplishment of the plan.

The strategic planning process has been completed or is in process in about 20 counties or communities in Oklahoma. The process takes about nine months and is labor intensive as the Resource Team provides the data and guides the entire process. The outcomes have been exciting as the entire community gets involved in the process, and changes have and are occurring. Some examples of changes are:

- Attraction of an OB-GYN physician;
- Attraction of a pediatrician;
- Establishment of a rural clinic;
- Creation of an assisted living center;
- Educational programs to address teenage pregnancy problems; and
- Establishment of an outpatient adult day center.

Another side benefit that has occurred is that the planning brings together the providers, and this often results in coordination and cooperation in the delivery of services. The end result of the planning process is an involved and enthusiastic community and often more health services being provided at the local level. This greatly improves the quality of life for the residents and makes for a more viable community.

**Example of a Health Feasibility Study**

Before the plan can be written, it is imperative that the issue be analyzed. Some issues that were identified and ranked extremely high by the strategic health planning process are not economically feasible or may require additional resources. If this is the case, all data and facts must be known before action is initiated. Analyzing the issue may be quite simple or may be very difficult. Some issues will require technical assistance from experts outside the committee and community. Knowledge of where to obtain assistance and willingness to ask is important. The methodology involved in analyzing an issue is quite basic. It is outlined in Table 4. To illustrate this methodology, a primary care physician feasibility study, including the cost of establishing a pri-
mary care physician practice, will be presented. The information is designed to assist local decision-makers in assessing the need and potential for primary care physician services and in assessing the cost of establishing a new primary care physician practice. This illustration is based on AE-Paper No. AE-0005, “An Analysis of the Demand for Primary Care Physicians and of the Cost to Establish a Primary Care Physician Practice for Atoka, Oklahoma” [21].

Introduction
This example feasibility study will examine the need for primary care physicians in Atoka County, OK, and will estimate the costs and revenues associated with establishing a primary care physician practice in Atoka County, OK. Specifically, the study will:

- Determine the need for primary care physicians;
- Determine the medical service area and population;
- Estimate annual total physician office visits and annual primary care physician office visits;
- Estimate the total demand for primary care physicians in the medical service area;
- Estimate the costs and revenues to establish a primary care physician practice;
- Estimate capital costs;
- Estimate annual capital costs, annual operating costs and total costs;
- Estimate revenues based on type of visit;
- Estimate alternate collection rates; and
- Determine estimated net income.

No recommendations will be made. The information included in this report is designed to assist local decision-makers in assessing the need and potential for primary care physician services and in assessing the cost of establishing a new primary care physician practice.

Determine Need for Primary Care Physicians in the Atoka County, OK, Medical Service Area
To determine an estimate of the number of visits to primary care physicians, the medical service area was delineated as shown in Figure 2. The medical service area includes places where persons are most likely to use a physician in Atoka County. As shown in Figure 2, this area includes Atoka, Caney, Stringtown, Tushka, Wardville, and the surrounding rural area in Atoka County. Data from hospital admission records were used to help delineate the medical service area. The 1998 estimated population of the medical service area is shown in Table 5. The estimated 1998 population of the medical service area (Atoka County) is 13,200. These estimates were made by using 1998 U.S. Census population estimates [4].
The number of physician office visits generated in the Atoka County service area is estimated by using the service area population data and the data from state and national research [1,2,3]. Research shows the number of annual office visits for the specified age group breakdowns in Table 6. For instance, for males under age 15, the average number of physician office visits is 2.4 visits per year [1,3]. This average annual visit rate is applied to the populations for each gender and age group. Residents in the medical service area are estimated to make 40,325 total physician office visits (Table 6). Of these total physician office visits, 62.2 percent or 25,082 \((40,325 \times 0.622 = 25,082)\) will be made annually to physicians active in primary care patient care while the remainder will be made to specialists [1].

The total number of primary care physician office visits given various usage rates is presented in Table 7 for the Atoka County medical service area. If there is 90 percent usage of Atoka County primary care physicians by residents of the medical service area, an estimated 22,574 primary care physician office visits will be made annually in Atoka County. A primary care physician in Oklahoma has an average of 4,976 patient office visits annually and, therefore, it is estimated that Atoka County needs an estimated 4.5 primary care physicians \((22,574/4,976 = 4.5)\) [1]. Atoka County currently has three primary care physicians. Given the estimated annual visits, it appears that Atoka County can support approximately one additional full-time primary care physician. Higher usage levels would indicate more physicians could be supported, and lower usage levels would indicate fewer physicians. All assumptions and local conditions must be taken into consideration by decision-makers before deciding if additional physicians could successfully locate in Atoka County.

**Estimating the Costs and Revenues to Establish a Primary Care Physician Practice**

If a prospective primary care physician were to consider locating in Atoka County, an estimate of costs, revenues and net income would be beneficial. Two alternative annual budgets for a solo practice are presented. Cost data are taken from a study of rural Oklahoma physicians with price adjustments based on the consumer price index for medical care [1,5]. The first alternative assumes that 2,500 visits are made annually and may be considered a first year budget. The second alternative assumes 4,500 visits. These could be considered first year (2,500 visits) and approximately second or third year (4,500 visits) scenarios for a new primary care solo physician practice. In both alternatives, it was assumed that a 1,500 square foot building was rented that would have three examination/treatment rooms.

**Alternative 1 (2,500 Visits)**
Alternative 1 assumes that 2,500 visits will be made annually to the primary care physician practice. Capital costs include equipment costs (Table 8) for the reception area, business office, examination/treatment rooms, laboratory, physician’s office, and conference room/staff lounge. Table 8 identifies the typical equipment found in a solo practice clinic, as determined from research [1]. Equipment costs for the reception area are estimated to be $1,927; for the business office $24,604; for three examination/treatment rooms $26,202; for the laboratory $4,894; for the physician’s office $3,435; and for the conference room/staff lounge $1,442. The total cost of equipment is estimated to be $62,505. Table 9 again shows the total capital equipment costs of $62,505. The annual payments for capital equipment are estimated to be $11,519 (principal and interest), assuming a 10-year loan at 13 percent interest.

Operating costs for the practice are based on research in Oklahoma [1]. Building expenses include rent, utilities, general maintenance, janitorial services, insurance on equipment, and other miscellaneous costs (Table 10). For Alternative 1, rent totals $12,385 annually, and the cost of utilities (electricity, gas, water, sewer and trash) is estimated to total $2,682 per year. Maintenance is estimated at $956 per year, and annual janitorial services are estimated to cost $2,866. Insurance on the equipment is estimated to be $313 per year, and a miscellaneous category of $1,500 is included to cover any additional expenses. The total annual building costs are estimated to be $20,702.

Office costs include items such as telephone, supplies, office equipment maintenance, and billings (Table 10). Telephone costs are estimated at $3,022. The cost of office supplies depends on the number of office visits and is estimated at about $0.80 per office visit for an annual total of $1,064. Office equipment maintenance is estimated at $1,412. Billings are estimated based on approximately $0.43 per office visit for an annual total of $1,064. In addition, fees for professional services are budgeted at $2,298; auto expenses at $3,949; conventions and travel at $2,389; and professional dues and licenses at $2,500. Allowances are also made for bonding ($150), marketing ($1,664), and postage ($1,383). Total annual office costs are $21,826 for Alternative 1.

Medical costs are listed next in Table 10. Maintenance of medical equipment is estimated to cost $1,685 annually for Alternative 1. Costs of medical supplies are estimated at $1.90 per office visit and vary with the number of patients seen. For 2,500 visits, they are estimated at $4,755. Malpractice insurance is budgeted at $6,122. This cost should be examined closely by a prospective physician due to rapidly changing insurance rates. The costs for outside laboratory fees are estimated at $4,223 annually. Laboratory supplies vary by the number of patients seen and are estimated at $1.69 per office visit or $4,223 for 2,500 visits. The total medical costs for Alternative 1 are estimated to be
Personnel costs are generally the largest expense for a physician practice. Many solo practices employ a Licensed Practical Nurse (LPN), a receptionist/bookkeeper, and a medical assistant (Table 10). The annual salary for an LPN is estimated to be $25,000; for a receptionist/bookkeeper $14,098; and for a medical assistant $18,214. Benefits of 25 percent have been estimated for an annual total of $14,328. The total cost for personnel with benefits is estimated to be $71,640 for Alternative 1.

Total annual operating expenses for Alternative 1 are $130,953. Local costs should be used to adjust these estimates if necessary. The total annual capital and operating expenses are estimated to be $142,472 for Alternative 1.

Gross income can be estimated by using the number of visits to the primary care physician and the average rate schedule. Previous research indicates the number of hospital, emergency room and nursing home visits per office visit [1]. These are considerably lower for new physicians than for more established physicians. In addition, the number of initial and routine office visits and the number of visits with additional charges can be estimated [1]. For example, initial office visits are estimated to be 14.9 percent of the total office visits (2,500 x .149 = 373 initial office visits) (Table 11). Routine office visits are 85.1 percent of total office visits or 2,128 routine office visits. Research also indicates the percentage of visits with additional charges is approximately 47 percent of total office visits or 1,175 visits with additional charges. The percentage of hospital visits is estimated at 8.6 percent of total office visits or 215 hospital visits. Emergency room visits of 205 represent 8.2 percent of total office visits, and nursing home visits of 90 represent 3.6 percent of total office visits. Nursery visits of 43 represent 1.7 percent of total office visits, and home visits of 105 represent 4.2 percent of total office visits. All of these percentages were derived from research [1].

The average rates and ranges charged for each category of physician visit are shown in Table 11. These are based on 1991 survey data adjusted based on the consumer price index [1,5]. These rates should be examined closely to determine if they reflect local conditions. Table 11 further shows the total estimated revenues (or total billings) for one physician with 2,500 office visits using the high, average and low rates indicated. The rates were multiplied by the estimated number of visits to determine the total estimated revenues for Alternative 1. For example, using the average rates for visits, total revenues equal $159,805 for one primary care physician with 2,500 office visits.

To show different collection possibilities, Table 13 shows the total revenues generated assuming a 95 percent, 90 percent, 85 percent, 80 percent, 75 per-
cent, or 70 percent collection rate. To illustrate Table 13, if 90 percent of the average total revenues were collected, total collections would be $143,825 for Alternative 1. To show estimated bottom-line net income for Alternative 1, Table 14 shows that net income would equal $1,353 based on the assumptions that 90 percent of the total average revenues are collected ($143,825) and that total annual capital and operating costs are $142,472. As illustrated in Table 14, the first year of practice may be difficult financially, given the assumptions presented.

Alternative 2 (4,500 Visits)
Alternative 2 differs from Alternative 1 with the number of office visits increasing to 4,500. Thus, only those costs based on the number of patients seen (office supplies, billing and postage expenses, medical supplies, and laboratory fees) will be higher than in Alternative 1. For 4,500 visits, office supplies will increase to $3,591; billing costs to $1,915; postage expenses to $2,489; medical supplies to $8,559; and laboratory supplies to $7,601. Total annual operating costs for Alternative 2 are estimated at $138,666. With the total capital costs and the annual capital costs remaining the same as Alternative 1, the total annual capital and operating costs are estimated to be $150,185. Local costs should be used to adjust these estimates if necessary.

The percentage of office visits for the specified type of visit is the same as Alternative 1; however, these percentages are applied to the higher number of estimated office visits of 4,500 (Table 12). The estimated revenues or billings are calculated the same as in the first alternative. The average total revenues generated are estimated at $287,574. Assuming a 90 percent collection rate, the average collected revenues would be $258,817 (Table 13). To show the bottom-line net income, Table 14 shows a net income of $108,632 based on the assumptions that 90 percent of the total average revenues are collected ($258,817) and that total annual capital and operating costs are $150,185. Alternative 2 is based on the scenario of 4,500 physician office visits, and this scenario is realistic probably two to three years into a new primary care physician practice.

Summary Comments on Primary Care Physician Feasibility Study
Many assumptions have been made in the preceding analysis. These include items that may change such as service area delineation, type of practice, capital equipment, number of office visits, and rate schedule. For example, the service area depicted here may change due to the exit or entry of physicians from nearby communities. Should this occur, revised estimates of physician office visits should be made.

All assumptions should be closely examined by local decision-makers to verify that they reflect local conditions. If additional local data are available, they
should be included to arrive at the most realistic analysis possible. If further analysis is needed, contact your County Extension office.

Summary of Feasibility Example
The example clearly demonstrates the need for an accurate analysis of each issue. As community decision-makers face each issue, it may be useful to know what type of feasibility studies have been completed through the development of existing community health plans. The basic data behind these studies will transfer to other communities and make the job of analyzing an issue much easier. The subject areas where analysis has been completed are presented in Table 15.

The goal of the presentation was to briefly review the importance of getting the entire community involved and to describe how issues are identified and prioritized. The main goal was to demonstrate how an issue must be analyzed before an action plan can be written. It was demonstrated that the need had to be projected, capital and operating costs had to be estimated, revenue had to be estimated, and if the issue did not break even, some method to finance the solution had to be identified. The bottom line is that a careful analysis must be completed before a plan can be written.

References for Primary Care Physician Feasibility Study


Selected References


Introduction
Effectively designed health education and health promotion programs can improve health, reduce disease risks, manage chronic illnesses, and improve the well-being and self-sufficiency of individuals, families, organizations and communities. To be effective, these programs must have a clear understanding of the targeted health behaviors, the target audience, and the environmental system. Programs are designed using planning models and evaluated to assure program success. The purpose of this section is to discuss the theory and its application in planning, implementing and evaluating Extension health education programs.

The Scope of Health Education
Health education is defined in many ways. A useful definition for Extension health education programs is the following: Health education is any combination of learning experiences designed to facilitate voluntary adoptions of behavior conducive to health [2]. It is intentionally directed toward knowledge levels, attitudes and/or specific behaviors. The overall long-term goal of health education is to enable people to increase control over their health and quality of life.

Health promotion refers to a broader concept than health education and addresses the general process of advocating health. It may include education of the individual and community, environmental change to support improved health, advocacy, policy changes, legislation, economic, or shifts in societal norms [1].

The term health education will be used in this section and will encompass both health education and health promotion definitions. Health education is a process affecting health decisions and practices. Thus, another long-term goal of Extension health education is to develop and nurture empowered learners. In order to make health decisions, individuals need to be more assertive about improving their health and the health care system in which they participate. Health education can motivate, educate, refer and follow-up. These interventions empower the learner. Empowerment means having the opportunity to learn, discuss, decide and act on decisions. The empowered learner feels competent and confident about making health decisions that are right for him or her. The empowered learner actively seeks information from health professionals and from other sources, collaborates rather than complies, takes advantage of community’s resources, and advocates for a health care system that is responsive to the learner’s needs.

Health education can address disease prevention, disease management, health maintenance, rehabilitation, community capacity building, and health advocacy activities. Health education is based on the premise that individual action is a factor in the above areas. Individual action takes place in a system where the individual is the final, but only one element, of the process including both the social and biological factors.
References


What is evaluation?
What images does evaluation evoke? What if you had to describe evaluation using your five senses? What would it look like, smell like, sound like, feel like, and taste like? Why does it excite some people, frighten others, feel tiresome and burdensome to many, or reassure yet others? What are we meant to be doing when we engage in evaluation?

Evaluation is something we do informally every day in our personal lives. We decide if that new yellow dress is worth $100. We consider whether or not our children’s job of cleaning the bathroom sink is good enough. We decide if we want to work with a certain organization based on the quality of their work and how easy or difficult it will be to share ideas. We decide that next year we will put orange flowers in the corner of the garden because we learned this year that the blue faded into the background.

Webster’s definition says that to evaluate is “to determine or fix the value” of something; or it is “to determine the significance or worth of – usually by careful appraisal and study”. Green and Kreuter [7] refer to dictionary definitions that speak of evaluation in terms of “carefully examining” and “judging the worth.” They take it a step further and suggest that evaluation is “the comparison of an object of interest against a standard of acceptability.” The standard of acceptability is usually expressed in the program’s outcome objectives. Arlene Fink [6] refers to evaluation as a “diligent investigation of a program’s characteristics and merits.” Rossi and Freeman [15] refer to evaluation as “the systematic application of social research procedures in assessing the conceptualization and design, implementation, and utility of social intervention programs.”

Evaluation is not accountability reports, record keeping or program monitoring. Evaluation may involve all these but is more comprehensive. Evaluation is not just something extra that takes away resources from program implementation. Evaluation is an integral and ongoing aspect of program planning and program implementation. In fact, the best antidote to evaluation anxiety is good planning that specifies clear objectives and strategies from the very beginning of a program.

Why Do We Evaluate?
The purposes of evaluation are varied. Essentially, evaluation is a learning activity. We want to know if we achieved the results that we hoped for and if those results contributed to long-term desired changes. We also often want to know if we accomplished other positive outcomes, even if they were different than what we expected. We want to know if we really conducted the activities that we planned as well as the strengths (or weaknesses) of our programs. We want to know how we succeeded or why we fell short. We want to know
what we could do differently to improve and what we can repeat because it contributed to success. We want to identify areas to emphasize in staff development as well as other program management areas. We want to know if we can justify the program and its expenditure of resources.

The Hippocratic oath that physicians take includes the phrase “and this above all, do no harm.” Evaluation is designed to help ensure that valuable resources are not being misused on programs and efforts that do harm. And, even if we do not document harm deriving from a specific program and if we continue to use resources in programs that are ineffective, we inadvertently do harm because those resources are no longer available to do programs that could do good.

Evaluation can help us assess our weaknesses; it can help us clarify what needs to be changed or strengthened. Remember, as Joseph Telfair [16] reminds us, “if you don’t measure results, you can’t tell success from failure; if you can’t recognize failure, you can’t correct it; if you can’t see success, you can’t learn from it.” Or as an African proverb puts it, “the only way forward is to take one step back.”

The case of teen pregnancy prevention programs is instructive. Susan Philliber [12] writes, “How could we have worked so hard on teen pregnancy prevention and yet know so little about how to solve this problem? We have lots of good ideas, “best bets,” and promising programs but little unassailable data on what effects they have.” She goes on to write, “One of the reasons for this is our failure to document the results or even the content of most programs. Satisfied with good intentions or a few stories about program successes, many efforts are continuously funded without any strong evidence that shows they work.”

In the best of worlds, we conduct evaluation not to satisfy administrators, funding agencies, boards of directors, or professional peers. We conduct evaluation to satisfy ourselves.

**Who Conducts Evaluation?**

A project evaluator(s) AND OTHERS!

Every program and every program evaluation have multiple stakeholders. Stakeholders are those people who are interested, involved and/or invested in your project in some way. Because you will be trying to satisfy these different stakeholders, their “presence” will visibly or invisibly help shape the evaluation. They essentially are part of those conducting the evaluation.
Depending on evaluation philosophy, the continuum can range from a single, outside evaluator who works minimally with project staff to an evaluation team composed of both inside and outside evaluators as well as many program stakeholders. Program staff, advisory groups, collaborating organizations, funders, and others may be asked to help with the evaluation design. Program staff will be asked to keep records. Program staff may be asked to help identify and recruit interviewees or focus group members. You and/or your staff may be respondents. You may be asked to identify community members who can be trained to help with data collection. Program staff, advisory council members and program participants may be involved in data analysis.

Keeping in mind the range of participants in an evaluation, there is still generally one or two people who are responsible for coordinating the evaluation and are termed the project evaluators.

Make every possible effort to identify and involve a trained evaluator in your program at the earliest stages of program development. When you are looking for someone to help you with evaluation, you will want to seek out the involvement and/or advice of your state Extension evaluation specialist. You may need to search further if your state specialist is already involved in multiple evaluation projects, if your state specialist does not have a familiarity with health promotion program development and implementation, or if he/she does not have a sufficient theoretical grounding in the particular health area you are working in. If your state does not have an evaluation specialist, do not assume that anyone who has done academic research in your program area will make a good evaluator. Evaluators use the same methods available to researchers, but evaluators have more experience working in a “real-world” context with shorter time frames, program pressures, and a program-planning framework.

When choosing an evaluator, either as an employee or as an outside consultant, be sure your evaluator:

- writes clearly and succinctly; ask for sample reports previously prepared by the evaluator.
- demonstrates good communication and group facilitation skills. You may need to negotiate the evaluation plan/design, and you want to be sure that your evaluator can explain clearly why he/she thinks certain elements are essential. Alternatively, you want to be sure he/she will be open to discussion and adaptation.
- understands the community and can approach people with humility and respect. If the evaluator will be doing fieldwork him/herself and interacting with program participants or the community, it is especially important that
he/she is sensitive to diversity and is not carrying attitudes that “blame the victim.”

- has a schedule that is not overbooked and that can be consistent with your timeframes.

- makes clear who will be doing various tasks. As mentioned above, evaluation is a team endeavor. At a minimum, you and staff working on a health promotion project will be asked to keep records and collect some data. Participants and other stakeholders will be asked to provide information. Therefore, identify at an early stage in the evaluation what tasks will fall to the evaluator and what will fall to you and your program staff.

- is clear about costs, including overhead costs. Costs will include the evaluator’s services as well as costs for data collection, data entry, data analysis, supplies, copying, telephone/fax/e-mail, postage, travel, and overhead/indirect costs. You can negotiate lower costs if you know, for instance, that a senior evaluator will be delegating several tasks to graduate students, interns or junior staff. Or you might be able to identify ways in which your program can contribute in-kind.

- discusses data ownership with you; it can be a thorny issue, so that is something important to discuss early on. Do you want your evaluator discussing program data with the media without your input or control?

For Whom Do We Conduct Evaluation?

Hampton’s material in the University of Kansas’ web-based Community Tool Box [8] suggests there are three groups of people for whom we conduct evaluation: community groups, grantmakers/funders, and university-based researchers.

In the community group he includes staff and/or volunteers who implement the program (agents of change) and the people who participate in the program or whom the program aims to change (targets of change). Using an ecological framework, this would expand Hampton’s community group to include several layers. For example, you would include friends and family of program participants. Another important community component is the community infrastructure (e.g., if you were doing a violence prevention program, your police department or department of human resources would be potential stakeholders). Formal leaders, local politicians or business leaders who make public decisions and effect public policy making, are an important part of the community. Informal leaders, people who influence others in their choices and decisions, are sometimes more critical than formal leaders.
Grantmakers and funders want to know whether or not their money is being “well-spent.” Did the program really reach the people it said it would? How many? Were they satisfied with the program? Did the program produce the results the funders were looking for? Potential grantmakers will want information about your programs, so your current evaluation can help gather data that will be helpful in the future. Funders also include, for many health promotion programs, government agencies and legislators. In this case, those who vote are also stakeholders. For instance, the abstinence only federal funds are a result of an active constituency of voters, and they have a great bearing on the current evaluations of those programs as well as a bearing on what potential programs might be funded. Remember that there are multiple “political” realities in evaluation, not least of which is the political arena of local, state and national politics. Evaluation results are not the only inputs into program funding decisions. The funder’s current fiscal health, staffing patterns and priorities can all effect continuation or initiation of project funding.

University-based researchers may be involved in your project development, implementation or evaluation. They will have an interest in how your program results contribute to the current body of research in your specific health area. Can your program promoting the early detection of breast cancer through local coalitions and/or volunteer led workshops really document an increase in mammography utilization among an underserved target audience? Do you have enough process evaluation data to be able to say with confidence what particular elements of your program are most probably associated with your success?

**How Do We Classify Different Types of Evaluation?**

Evaluability assessment refers to the preliminary process of determining if a program is ready to be evaluated or capable of being evaluated. Is there even a likelihood that the program will go into operation within the projected timeframe for the evaluation? Are there strong political forces that will limit the evaluator’s freedom to operate ethically? Does community assessment even support the need for this particular program and thereby justify the commitment of evaluation resources? If this project proposes to rely heavily on collaboration, what is the history and nature of past collaboration efforts, and is there evidence to support the probability of being able to implement a collaboration-based intervention? Evaluability assessment is generally associated with the planning and earliest implementation stages of a program.

Sample evaluability assessment questions might be:

- Should this program be developed at all?
- Will staff be hired in time for the program to develop and implement an intervention?
- Are program staff willing to work with the evaluator to develop a logic model?
Process evaluation examines program activities/outputs and documents program recipients/participants. It looks at the consistency between proposed program strategies and actual activities, intended audiences and actual program participants. It takes a detailed look at project implementation and examines issues that arise as the program is put into practice.

When findings from process evaluation are used to provide feedback to program planners, staff and funders along the way with the intent of improving program implementation, we refer to it as formative evaluation.

A sample process evaluation question could be, “was the process of showing a videotape and answering viewer questions implemented in the health department waiting room according to the recommended procedure?” Another critical process evaluation question must always be, “is the program reaching its target audience?”

Analogous sample formative evaluation questions might be:

- What were the challenges of following the recommended procedures when showing the videotape and answering questions in the health department waiting room?
- Are there obvious adaptations to recommend?
- Who needs to be involved or consulted in deciding how to proceed with this educational method?
- What factors are contributing to an ongoing process of successfully reaching the target audience?

Outcome evaluation aims to answer two questions: 1) were there any changes among those served and 2) did the program cause those changes? We need to be able to clearly identify and document the presence of changes/outcomes among a sufficient number of program participants to attest to the success of a program. We must also be able to show that the changes did not occur because of other reasons besides our program. Quantitatively, we do that through statistical tests of significance and a variety of evaluation designs. Qualitatively, we do that through a process of collecting overwhelming evidence similar to the process used in a court case. Outcome evaluation focuses on the proximal outcomes (i.e., those outcomes that we think we can change that research and/or theory says are linked to the desired impacts). If we want to reduce cardiovascular disease, then we know we can do that by changing certain behaviors such as eating and physical activity habits. Determining if we increased physical activity would be an outcome; determining if we reduced cardiovascular disease would be an impact.

Impact evaluation strives to document that our program achieved the desired impact and that it was, indeed, our program’s ability to successfully achieve desired outcomes that contributed substantially to the impact.
Pirie [13] cautions us that, “Outcome questions are often the first questions posed to the evaluator, but they should be the last ones to be answered. Only if the program seems to be operating in a satisfactory manner can the answers to outcome questions be meaningful.”

Philliber [12] reminds us that there are some strategies that, by themselves, do not answer outcome questions. Program participant testimonials about how satisfied they are with the program or how much they like the staff do not mean that the program is having its desired impact. Expensive program inputs and heavy staff workloads do not mean that those inputs are having the intended result. Identifying program participants who have had particular or remarkable success does not mean that the program is the reason for their success, nor does it mean that the program was successful with a sufficient number of participants to be worthwhile.

**Cost effectiveness/cost benefit evaluation**

With the current emphasis on accountability many funders want to know the relative value of a program’s outcomes compared to the investment of resources. Cost effectiveness analysis relates the cost of a specific alternative to specific measures of program objectives. The costs of different strategies for achieving similar outcomes can be compared. Cost benefit evaluation looks more broadly and attempts to make some assessment of the service program by determining if overall welfare or benefits to a broad constituency of people have increased as a result of the program. Both these techniques require the involvement of an economist or an evaluator with a strong background in economics. They are costly to conduct and are filled with many challenges such as determining the dollar value of benefits, determining indirect costs, or accounting for intangible costs and benefits.

**How Do the Different Types of Evaluation Relate to the Components of a Program/Intervention Model (e.g., Derived from the PRECEDE-PROCEED Model)?**

In the PRECEDE model, the aim is start by thinking about the desired impacts and work backwards - reasoning through the outcomes, intermediate outcomes, individual and community processes of change, outputs and program activities, and institutional arrangements that make a hypothesized explanatory chain/link of factors. When planning and organizing the evaluation, the chain is reversed. Usually the evaluability assessment is conducted first, and it examines the institutional arrangements, preliminary strategic planning, and early efforts at implementation. Documenting the resources and activities actually committed to program implementation is the job of process evaluation. Examining implementation and its success in achieving the most preliminary objectives, such as engagement of the target audience, participation by clients in the minimum number of program activities, etc. is the role of process
and formative evaluation. Documenting progress toward and/or achievement of intermediate objectives is the role of outcome evaluation, and documenting longer term goal accomplishment is the job of impact evaluation.

**Program Models Assist Evaluation**

**What is a Program Model?**

Program models are sometimes referred to as logic models or program theories of change. A logic model is a graphic that helps us visually see the program’s theory of change. It helps us understand why we choose to put certain activities into our program rather than others. It shows us that we expect activity X to have effect Y that will help achieve the long-term objective of our program. Developing a logic model should be one of the first steps in an evaluation. In fact, it should be a product of the program planning process that both program staff and evaluators can rely on to guide their work. It is an example of how program evaluation is integrally linked to program planning and implementation and cannot be effectively “tagged on” to the end of a project.

Essentially a program model is a road map. Few of us go off on vacation without a clear destination or a pretty clear sense of how we would reach our destination. Generally speaking, we hope that is also true of the health education and health promotion programs we choose to work on. In many instances if we familiarize ourselves with research and program evaluation data from other similar projects, we can develop our program plan (map) to follow a route that has been previously well-tried. Other times when we develop programs or approaches, we have a clear idea of what we want to see changed at the end of the project, but there is not adequate prior research or experience to follow. In those instances we choose to undertake a certain set of activities or to hire someone with a certain background because we have a set of implicit assumptions about what it will take to make the changes we want. But if we do not clearly articulate those assumptions, we may not be able to “test” their appropriateness, and later we may not be able to effectively say why our program had positive or negative outcomes. Those Europeans who explored areas of North America where Europeans had not been previously were similar to health educators who are the first to develop new programs. They do not have a knowledge base on which to build their plan, so they might have to venture into new territory and create a map along the way for others to follow later. In these instances, evaluation is even more critical because we want to be able to leave a map for others of where to go and where not to go or to be able to tell others that specific paths led to unexpected, but valued outcomes. Almost always we have a rationale for doing the things we do.
The challenge for an evaluator at times is to help program staff articulate what they see as the rationale for their choices.

**Who Develops Program Models?**
Many different people can create a logic model. “Experts” familiar with the research can develop the program model in a top-down fashion. Program staff can develop the model based on their own experience and rationale. “Experts” and program staff can jointly develop a model that reflects academic theory, research findings and intuitive direction based on experience and direct interaction around the issue. Program participants and/or potential program participants can develop a program model they believe would address the health issue under consideration based on their perception of the issue. How many times did those early European explorers of North America benefit from the advice and conversation of those native people who were already familiar with the terrain?

Steps in Developing a Program/Logic Model:

1. **Decide what should be in the program model and the scope of the model.** At a minimum the basic program model should depict your planned activities, your inputs (strategies for getting your organization ready to implement your activities), the short-term results you expect, and the longer-term outcomes you hope to achieve – including all those pertaining to children, youth, families and/or communities. The model can depict in a broad fashion the overall components of your program, or it can focus in more precisely on a particular aspect of your program. Think of it as a camera that has a wide-angle and a telephoto lens.

   Start at a basic level and identify your model’s core components and their relationships. What we notice is inputs, activities, short-term outcomes and long term outcomes. Appendix 3 outlines a sample of a basic logic model for a breast cancer education program.

   Then think through in a more detailed and precise way the logic, practical considerations, and the in-between steps involved in your project. You will now add to your model outputs, intermediate outcomes, impacts, and contextual factors. Appendix 4 is a more detailed logic model for the same breast cancer education program.

2. **Draft the logic model.** Once you have determined the scope and components of the logic model to represent your program and the evaluation you are undertaking, actually draft the logic model. Put it in graphic form, group or separate the components with boxes, and attach arrows to show the relationships and patterns between the components.
3. **Use the logic model as a framework for your evaluation planning.**
   Develop indicators that will give an accurate reflection of what is happening in your program and the results you want to achieve. Let the model guide you in the development of your evaluation plan (see next section).

4. **Go back periodically and see how well the model reflects your current program.** Has your program changed? Does the model need adapting? Is the program not meeting the expectations laid out in the model? Can you identify current challenges with the program, and then can you expand that component of the logic model to facilitate a better analysis of the challenges? As a result of your formative evaluation, do you want to expand some particular part of the logic model? For instance, we can focus in more carefully on the volunteer recruitment aspect of the model. Appendix 5 depicts such a detailed section of the logic-model.

**Why are Program Models Recommended?**

Philiber [12] suggests four reasons: 1) it makes the interventions and outcomes very clear; 2) it protects your program from inappropriate or excessive expectations; 3) it enables you to define measurable results; and 4) it checks the logic of your assumptions.

What kind of clarity are we referring to? Again Philiber provides us with an example. She asks us what do we mean when we say “we are going to develop youth to their fullest potential,” or alternatively, what kind of a program are we describing when we say, “we are going to provide quality care for all our patients?” We are compelled to be more specific when we develop a program model. We are also challenged to test our assumptions and to increase our realism.

We see in front of us a program model that says we expect a series of four one hour educational workshops to significantly reduce youth violence in a specific neighborhood. In this neighborhood 90 percent of residents are living below the poverty line, 40 percent of young men spend some time in prison, and 30 percent of income earned is derived from the sale of illegal drugs. Looking at the arrows on the model, the arrows between the workshops and the reduction of violence, we suddenly realize that those arrows are not realistic. Are there any other programmatic components? Are we working on our project as one part of a larger community-based/neighborhood-based collaborative initiative? If not, the path represented by the arrows, between our program and violence reduction is not very realistic. Alternatively, we realize the limitations of a program model that proposes to reduce breast cancer mortality in an underserved community with very limited access to care by encouraging women to get annual mammograms. Is there any part of the model that also encourages the community to develop strategies to provide affordable or no-cost mammograms?
Instead, a program/logic model would encourage us to stipulate more clearly our objectives. If we use the breast cancer education model, we might instead stipulate an activity objective such as:

By August 30th 2000, all hospitals in county X will have agreed to each offer 10 free mammograms between October and December 2000.

Then our short-term objective might be that 20 limited-income women in county X will receive a baseline mammogram before Dec. 30, 2000. Our longer-term outcome might then be that all those women detected with breast cancer will receive ongoing free treatment. In reviewing the logic model, we are likely to realize that we have no strategies or activities that are likely to contribute to the assurance for free mammograms. Our logic model needs amplification, as does our program plan. Or, maybe we realize that our program has no ability to increase the activities we plan. Instead, we revise our expectations about what we can accomplish. We have then, protected ourselves from unreasonable expectations.

In summary, the overarching rationale for logic/program models is to assist us in clarifying the program’s theory. That theory can be based on research, but it can also be based on our own program experience and knowledge of our community and/or the clients we work with. Rennekamp [14] suggests that when program theory is ignored, “program staff have limited understanding of how their work translates into meaningful outcomes. Consequently, evaluation becomes a mystery, work has limited meaning, [and] program staff lacks the ability to explain the significance of their work. Therefore, program models can be an invaluable asset to the program planners and the evaluators as they keep staff focused and motivated...two critical elements in successful health promotion programs!”

**Developing an Evaluation Plan**

An evaluation plan is an important guide through the several steps of evaluation. The first step is to identify the key evaluation questions you want to ask. These will develop as you take some time to think about what it is that you, your community, the participants, your staff, funding partners, or other stakeholders really want to know. The plan will help you not waste time gathering information you do not need or will not be able to adequately analyze. A well thought-out logic model will provide you with a solid foundation for prioritizing the questions you want to ask.

A plan will enable you to better identify who can answer your questions and provide the information you are seeking. It will assist you in identifying the most appropriate indicators or benchmarks. It will help you identify the best possible methods and approaches for gathering what you need. Because the plan will include a timeline, you will also have to give adequate attention to
issues of administering and implementing the data collection process. A good plan will include a time frame, staffing plan and resource allocation for data analysis. Without this you could end up with lots of data and no capacity for analyzing it for maximum benefit. Finally, a good plan will also encourage you to think about reporting – right from the beginning. This will bring you right back around to the first step of identifying questions and stakeholders who want information.

References


The Institute of Medicine (IOM) recommends a systems approach as being the most effective way to promote health and prevent disease/injury prevention [6]. When planning Extension health education programs, it is useful to examine both the conceptual and scientific basis underlying the IOM recommendation. First, the definition of health is significant. The IOM report stated:

*Health is a state of well-being and the capability to function in the face of changing circumstances. Health is, therefore, a positive concept emphasizing social and personal resources as well as physical capabilities* [6].

The IOM noted that viewing health as a biomedical constructs limits the ability of health educators and others to address the determinants of health (i.e., those processes that produce health and the underlying causes of disease).

**Determinants of Health**

Blum's "Force-Field and Well Being Paradigm of Health" (figure 1) has been used extensively by health planners and health educators to provide the rationale for a systems approach to health [3].

**Figure 1. Blum's "Force-Field and Well Being Paradigm of Health"**
Blum defined health as an interlocking combination of physical, psychological and social well-being. The major determinants of health include health care, genetics, environment, and behavior and lifestyle (transparency master 1).

- **Health care** has the least effect on health. Although access to health care when we get sick is important, the parts of the health care system that make the biggest contribution to good health are the preventive services -- such as immunizations and prenatal care and the early diagnosis and treatment of illnesses or injuries to prevent death or disability.

- **Genetics** include the things passed from generation to generation -- things such as the color of our hair and eyes. A few health problems are also genetic. In many cases, a genetic health problem cannot be prevented, but disability or death can be prevented if the health problem is identified and treated early. However, advances in Human Genome mapping and genetic engineering may greatly expand the number of hereditary diseases that can be prevented.

- **Environment** includes those things around us, both before and after birth, that have a positive or negative affect on our health. Before we are born, the things our mothers ate or drank and the drugs or medicines they used affected our health. After birth, the quality (safeness) of our air, water, food and housing have a major effect on our physical health. Other things in our environment, such as too much stress or loud noise, may affect both our physical and mental health.

- **Behavior**, including our lifestyle choices, have a greater effect on our health than all other things combined. Our knowledge about how to promote health and prevent illnesses or injury, and our choices about putting this knowledge into practice at work, home and in our community are things that affect our community [4].

Canada has developed a national health promotion program that operationalizes Blum's framework at the philosophical, policy and programmatic levels. After reviewing subsequent research of successful health promotion efforts, including Canada's, the IOM has expanded Blum's framework into a systems model having nine inter-related determinants of health. The model proposes that health is caused by the mutual interaction among the social environment, physical environment, genetic environment, health care, disease, health and function, well-being, and individual response (behavior and biology).

**Exercise 1** Identify the various Cooperative Extension programs and initiatives that address the determinants of health. (See Resources and Websites Handout)
Systems Frameworks
Anderson and Carter provide a useful framework for understanding social systems [2]. Within their framework, each social entity – whether individual, family, group, community or society – is a holon, meaning that it is simultaneously a part and a whole. The social entity (e.g., a human being) is a whole with identifiable boundaries. Furthermore, the holon has parts or subsystems (e.g., body organ systems) and at the same time is part of one or more larger whole units or suprasystems (e.g., community and society). All parts of a holon are inter-related, and changes in any part of the system, including the subsystem and suprasystem, will affect all other parts of the system. Furthermore, the holon is greater than the sum of all its parts. For example, each individual is a unique person rather than a summation of body organ systems influenced by the family and external social systems.

Exercise 2
In small groups, identify one state or national change in economic, educational, social or health policy. Discuss the impact of this change that you have observed on “(1) the health of individuals, (2) the status of families, (3) the well-being of major population groups in your community/county/state, and (4) Cooperative Extension policy, structure and programs.

The term focal system is used to designate the specific holon that is the focus of each program. The traditional focal systems for Extension health education have been individual, family, group or community/county. Although the ultimate goal of health education is to improve the health of individuals, the IOM recommends that the appropriate focal system for health education and other health promotion/disease prevention programs is the community or societal system. Let us examine three systems more closely – the individual/personal health system, the family health system, and the community health system.

Individual/Personal Focal System
Using Handout 1, fill in the subsystems and suprasystems for yourself as the focal system. On the back of the handout, identify other characteristics about yourself that are not segments of your subsystems or suprasystems. When you are done, your diagram may include some of the following:

- Subsystems: digestive system/gastro-intestinal, nervous system, endocrine system, genito-urinary system (venereal & renal systems), circulatory system/cardio-vascular system, respiratory system, musculo-skeletal system, skin/connective tissue, etc.

- Suprasystems: family (immediate and extended), work, church, civic and community groups/organizations, health care system, school, Internet or other communication systems, legal system, welfare system, cultural/racial/ethnic group, etc.
Focal system characteristics: personality, somatic health status, psychosocial health status, spiritual health status, stage of growth and development, level of literacy/educational status, knowledge and skills, beliefs and values, roles and activities, behaviors, etc.

When planning health education programs for the individual focal system, it is important to tailor the program fit each individual participant. The suprasystem provides the context for learning about health behaviors and for achieving, maintaining, and/or restoring health, while the status of the subsystem provides indicators of the individual’s genetic make-up and health promoting/disease preventing behaviors. The suprasystem may also provide access to the individual and provide the location and medium for the delivery of health education programs. The individual focal system characteristics define the type of health education being planned. For example, planning health education for individuals should be a joint venture in which both the individual and the health educator actively participate. However, the age (e.g., infant or very young child) or mental health status (e.g., confused) of the individual may necessitate solo planning by the health educator. Furthermore, the content of the program should fit with the individual’s stage of growth and development, existing knowledge, prior experience, skills, and beliefs and values. Other characteristics, such as the individual's somatic health status and level of literacy, may affect the format of the programs. For example, health education materials for individuals who cannot read may be in pictorial or audio-visual format rather than text-based format. For both audio-visual and text-based format, the material should be in a language (word selection, as well as national language and/or dialect) that the individual understands.

A health education framework that provides a framework for planning health education programs for individual focal systems is the Health Belief Model. The Health Belief Model, which will be discussed in depth later in this chapter, indicates that health behavior is influenced by individual perceptions about a given health problem (actual or potential), by internal and external modifying factors, and by the relative weight of perceived benefits and barriers.

**How People Learn**

Tests have shown that people remember:
- 20 percent of what they hear,
- 40 percent of what they hear and see,
- 80 percent of what they discover for themselves.

**Family Focal System**

Using Handout 2, fill in the subsystems and suprasystems for your fam-
family (either current or family of origin) as the focal system. On the back of the handout, identify other characteristics of yourself that are not segments of your subsystems or suprasystems. When you are done, your diagram may include some of the following:

- **Subsystems:** individual family members

- **Suprasystems:** health care system, community/societal system, church, civic and community groups/organizations, school, Internet or other communication systems, legal system, economic system, etc.

- **Focal system characteristics:** roles and relationships among family members, stage of family development, family beliefs and values, etc.

A tool sometimes used to help individuals and families understand the systems approach to health is the eco-map. An eco-map is a diagram of the external agencies, organizations and community structure to which the individual relates. The individual or family is represented by a circle in the center of the diagram. The center circle is surrounded by a larger ring of circles. Each circle contains the name of one of the agencies, organizations or community structures with which the individual or family is interacting. The direction (one way or mutual) of the interaction is shown by directional arrows linking the circles to the individual/family system. The frequency or strength of the association is represented by the number (ranging from one to three arrows) and direction of arrows linking each circle to the family unit.

**Community/Societal System**

Using Handout 3, fill in the subsystems and suprasystems for your community or county as the focal system. On the back of the handout, identify other characteristics of the community/county that are not segments of the subsystems or suprasystems. When you are done, your diagram may include some of the following:

- **Subsystems:** government, business and industry, communication, health, social services, transportation, safety, recreation, housing, sanitation, education, etc.

- **Suprasystems:** state/national health care system, state/national/global economic development, state/national policy and legislation

- **Focal system characteristics:** local history, community values, shared activities, etc.

There are several community health frameworks that are used for health edu-
A framework used by many health professionals is Anderson and McFarlane’s "Community As Partner" model [1]. The heart of the model is the community core (Figure 2) showing the community subsystems that have an impact on individual and population health.

Figure 2. Community Health Core: Subsystems
Another useful framework is Connor’s Social Compass [5]. The Social Compass (Figure 3) indicates elements that affect each of the community’s subsystems and, therefore, the categories of information about the subsystem – or about the focal system as a whole – that should collected and used when planning community-level change.
A third framework, the PRECEDE-PROCEED framework, will be described in greater depth later in the chapter. PRECEDE-PROCEED is a comprehensive health planning model that links the type of health education program that is planned to observations about community indicators of social well-being, health status, environmental conditions, lifestyle and health behaviors, and factors contributing to the health behaviors. In addition to providing a template for a systems approach to health education, the PRECEDE-PROCEED framework shows the linkages and potential data sources connecting assessment, program design, and evaluation design [7].

A variety of additional frameworks for health promotion are used in the public health sector. The Assessment Protocol for Excellence in Public Health (APEXPH), a planning approach used extensively by health departments, combines an epidemiological approach to assessment with a community organization for program planning. The Planned Approach to Public Health (PATCH) is a community organization approach based on the PRECEDE-PROCEED framework. The Healthy Cities and the Healthy Communities frameworks are community development approaches to health promotion that target the determinants of health.

When stating its preference for addressing health promotion and protection by working with the community focal system, the IOM observed that improving health is a shared responsibility of health care providers, public health officials, and a variety of other factors in the community (e.g., Cooperative Extension) who can contribute to the well-being of individuals and populations.

<table>
<thead>
<tr>
<th>Exercise 2 Scenario</th>
<th>As part of your activities in Extension health education, you are involved in planning a community-wide health promotion campaign.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify your potential partners in community-level health promotion at the county level, the state level, the national level, and the international level.</td>
<td></td>
</tr>
<tr>
<td>2. Identify the various Cooperative Extension programs and initiatives that fit with a systems approach to health promotion and health education.</td>
<td></td>
</tr>
</tbody>
</table>
References


To develop empowered learners, the Extension educator must have an understanding of behavior change theories and their application in achieving learner outcomes. Human behavior is very complex. Researchers concerned with behavior change have long been interested in questions of how people seek, use and process information. Behavior theories attempt to explain why people act as they do. Health education programs are more likely to benefit the learner if they are guided by a theory of human behavior.

Why do some people change their health behavior and others don't? Effective health education programs must be designed to insure participants are aware they need to change, aware of how they can change, and aware of what types of tools that might help them improve their health. Behavior changes, such as weight loss, smoking cessation or daily exercise, generally require time to firmly change and establish a new habit. Educational programs designed to change behavior must understand the learner and processes that influence a learner's ability to change.

There is a wide range of theories that focus on individual health behaviors, which for the most part have been borrowed from other disciplines including social and behavioral psychology, communication theory, and, most recently, social marketing. A detailed description of each theory is beyond the scope of this discussion. The theories described in this session were chosen because of their global application to Extension health education programming.

The Health Belief Model, Stages of Change Model and Consumer Information Processing Theory Model address individual characteristics that influence behavior such as knowledge, attitudes, beliefs and personality traits. These models are referred to as individual-level health behavior models. A model building on the ecological perspective is the Social Learning Theory (SLT) Model. This model examines the individual existing within social environments and is referred to as an interpersonal-level health behavior model. The premise of SLT is that people are influenced by, and are influential in, their social environments. Diffusion of Innovations Theory and Community Organization Theory are community-level health behavior models. These models provide a framework for understanding how social systems function and change and how communities and organizations can be energized to act.
1. Individual-Level Health Behavior Models

The Health Belief Model
The Health Belief Model (HBM) attempts to predict health-related behavior in terms of certain belief patterns. The model is used to explain and predict preventive health behavior as well as sick-role and illness behavior [3]. In other words, explain noncompliance to health recommendations. The model postulates that:

- Health behavior of all kinds is related to a general health belief that one is susceptible to health problems.
- Health problems have undesirable consequences.
- Health problems and their consequences usually are preventable.
- Barriers or costs have to be overcome if health problems are to be overcome.

A person’s motivation to undertake a health behavior can be divided into three main categories:

1. **Individual perceptions**: Factors that affect the perception of illness or disease and address the importance of health to the individual, perceived susceptibility (perception of the likelihood of experiencing a condition that adversely affects one’s health), and perceived seriousness (perception of the difficulties the disease would cause) such as pain, disability, loss of work time, financial burden, or death.

2. **Modifying factors**: These factors include demographic variables such as age, gender, ethnicity and educational level; perceived threat of the disease; and cue to action created through such events as mass media campaigns, advice from others, illness of friend or family member, diagnosis of a disease, or a newspaper article. The ultimate decision to engage in the behavior is influenced by these modifying factors. These account for a person’s "readiness to act."

3. **Likelihood of action**: Addresses the perceived benefits minus perceived barriers in undertaking the health action. The learner conducts an unconscious cost-benefit analysis that must weigh the positive aspects of the action against the potential negative aspects of the action such as dangerous, unpleasant, inconvenient, expensive, time-consuming, etc.

The HBM addresses the importance of designing educational programs that affect the learner’s perceptions. People understand the seriousness of many health conditions, but they often do not perceive themselves as susceptible. Overcoming this perception is a prerequisite to healthy lifestyles. Complicating
this task of the educator is the plethora of advertising and media that reinforces negative perceptions about a health behavior such as quick weight loss programs or products. The HBM can be used to help develop health messages that persuade people to make healthy decisions.

For example, the HBM can be used to design effective health messages concerning chronic diseases such as diabetes. Before a person can accept the diagnosis of diabetes and manage the disease, he must believe he has the disease (is susceptible); that diabetes can lead to blindness, heart disease and amputations (severity is great); and that following the prescribed treatment regime such as taking medicine, losing weight and measuring blood sugar will reduce risks (benefits) without negative side effects (barriers). Publications, diaries, charts and contracts can serve as a means for supporting adherence (cues to action). If the person has difficulty following the recommendation, developing short-term goals can help build up confidence to succeed (self-efficacy). Table 1 summarizes the application of these concepts.

Table 1. Health Belief Model

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Susceptibility</td>
<td>One's opinion of chances of getting</td>
<td>Define population(s) at risk, risk levels; personalized risk based on a person's self assessment of behavior; heighten perceived susceptibility if too low</td>
</tr>
<tr>
<td>Perceived Severity</td>
<td>One's opinion of the seriousness of a condition and its long-term effects</td>
<td>Specify consequences of the risk and condition</td>
</tr>
<tr>
<td>Perceived Benefits</td>
<td>One's opinion of the efficacy of the advised action to reduce risk or seriousness of impact</td>
<td>Define action to take -- how, where, when; clarify the positive effects to be expected -- why</td>
</tr>
<tr>
<td>Perceived Barriers</td>
<td>One's opinion of the tangible and psychological costs of the advised action</td>
<td>Identify and reduce barriers through reassurance, incentives and assistance</td>
</tr>
<tr>
<td>Cues to Action</td>
<td>Strategies to activate “readiness to act”</td>
<td>Provide how-to information, promote awareness, use reminders</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Confidence in one's ability to take action</td>
<td>Provide skill training and guidance in performing action in small steps</td>
</tr>
</tbody>
</table>
The Stages of Change: The Transtheoretical Model

There are six well-defined stages of change: precontemplation, contemplation, preparation, action, maintenance, and termination [4]. Although nearly all change begins with precontemplation, only the most successful ends in termination. The most successful self-changers follow the same path for every problem. The learner can be at different stages of change for different problems. The stages of change are not linear, but rather spiral. Learners begin by proceeding from contemplation to preparation to action to maintenance. Most, however, slip up at some point, returning to contemplation or sometimes even the precontemplation stage, before renewing their efforts. The average self-changer recycles many times. For example, most people who try to quit smoking, lose weight or begin an exercise program, report three or four serious attempts before they succeed. New Year resolutions are typically made for five consecutive years or more before the maintenance stage is achieved. Below is a detailed description of each stage.

1. **Precontemplation: Not Even Thinking about Changing**
   Precontemplation indicates an active resistance to change. Before changing, people must recognize a need to change. For example, people who smoke may deny smoking is bad for their health. To move a smoker to the next stage requires providing them with enough appropriate information or talking with someone who "has been there." Building their awareness is the main task of the educator at this stage.

2. **Contemplation: Thinking about Changing**
   Some people know they have unhealthy behaviors and devote a considerable amount of time thinking about making changes. They begin to gather information about the behavior and how it may be affecting their lives now and in the future. In the contemplation state, a person may look for sources of support, the pros and cons of making a change, and begin setting realistic goals. A smoker may begin to realize the cost of smoking a package of cigarettes by determining how much money they would have if the money spent on cigarettes was put into savings. Once enough information is gathered, they usually move to preparation. Programming for people in the contemplation stage should address motivating the learner by presenting options available to assist in making the change.

3. **Preparation: Getting Ready**
   People in the preparation stage are usually planning to take action within a month. They plan the action they will take and make a firm commitment to carry out the plan. The plan usually includes telling others they are going to make a health behavior change as well as letting family and friends know what they can do to help. A date to begin action is also chosen. Action plans are tools to assist the learner at this stage.
4. **Action: Making a Change**

Change begins here. During action, people learn to control their behavior. They plan ways to deal with barriers such as time constraints, unrealistic goals and unsupportive people. Adjustments are made to their plan when needed, and more realistic goals are restated if necessary. Also, the learner needs to have strategies for dealing with relapse or slips when they happen.

5. **Maintenance: Maintaining Change**

Once a goal has been met, for example weight loss, the maintenance stage begins. An important part of maintenance is for the learner to stay committed by listing barriers during the action stage and accepting credit for accomplishments. New strategies for prevention relapse may need to be identified again to prevent going back to unhealthy behavior. Both social and environmental temptations are continually scrutinized. Some people remain in the maintenance stage for years and may never move to termination. Programs may offer periodic opportunities to meet again in ever extending time intervals. People who maintain their new health behaviors have learned the new behavior so well it is now "automatic" or habitual.

6. **Termination: Established Change as Part of Lifestyle**

How does one know if they are in the termination stage? Research has shown there are at least four criteria for the termination stage.

- A new self-image. The learner feels at ease with the relationship between self and the new behavior.
- No temptation in any situation. The fear of relapse is gone when the individual is faced with situations that once were temptations to resume the old, such as over eating at a restaurant.
- Solid self-efficacy. A genuine confidence in knowing one will never engage in the problem behavior again.
- A healthier lifestyle. The learner is living a healthier lifestyle to sustain health.

The process of change depends on doing the right things at the right times. Therefore, the key to successful change is knowing what stage the learner is in for the specific health problem. Research has shown that people who try to accomplish changes they are not ready for set themselves up for failure. These six stages of change are not easy to accomplish. People often resist change, but those who really want healthier behaviors may be able to make permanent changes. Successful health education programs must support the learner moving through these stages by providing time for building the learner’s progress through these stages. The educator should build behav-
ior changes in small steps, allowing the learner as many as possible to build up confidence in the behavior change process. Forcing people to move too quickly to action is the most common reason for failure.

Table 2. Stages of Change Model

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>Unaware of problem, hasn't thought about the change</td>
<td>Increase awareness of need for change, personalize information about risks and benefits</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Thinking about change in the near future</td>
<td>Motivate and encourage to make specific plans</td>
</tr>
<tr>
<td>Preparation</td>
<td>Making a plan to change</td>
<td>Assist in developing concrete action plans, setting gradual goals/short-term goals</td>
</tr>
<tr>
<td>Action</td>
<td>Implementation of specific action plans</td>
<td>Assist with feedback, problem solving, social support and reinforcement</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Continuation of desirable actions or repeating periodic recommended step(s)</td>
<td>Assist in coping, reminders, finding alternatives, avoiding slips and relapses</td>
</tr>
<tr>
<td>Termination</td>
<td>Changing is now habitual -- unconscious behavior</td>
<td>Self-motivated by positive, habitual behavior</td>
</tr>
</tbody>
</table>

Consumer Information Processing (CIP) Theory

Information is necessary but not sufficient for encouraging people to adapt healthful behaviors. Central assumptions of CIP are that:

- Individuals are limited in how much information they can process.
- In order to increase the usability of information, they combine bits of information into "chunks" and create decision rules to make choices faster and more easily.

People will use information if it is available, seen as useful and new, and format-friendly. CIP concepts apply to formative evaluations to determine if the target audience finds the program materials attractive, interesting and easy to use [3]. Table 3 describes the application of CIP.
Table 3. Consumer Information Processing Model

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Processing Capacity</td>
<td>Individuals’ limitations in the amount of information they can acquire, use and remember</td>
<td>Choose the most important and useful points to communicate, whether orally or in print material.</td>
</tr>
<tr>
<td>Information Search</td>
<td>Processing of acquiring and evaluating information; affected by motivation, attention and perception</td>
<td>Provide information so it take little effort to obtain; draws consumer’s attention and is clear.</td>
</tr>
<tr>
<td>Decision Rules</td>
<td>Rules of thumb are developed and used to help consumers select among alternatives.</td>
<td>Learn key ways to synthesize information in ways that have meaning and appeal for the audience.</td>
</tr>
<tr>
<td>Consumption Learning</td>
<td>Internal feedback based on outcome of choices, and use in future decisions.</td>
<td>Keep in mind that people have probably made related choices in the past, and are not “empty vessels.”</td>
</tr>
<tr>
<td>Information Environment</td>
<td>Amount, location, format, readability, and processibility of relevant information.</td>
<td>Design information tailored to the audience; place it conveniently for use.</td>
</tr>
</tbody>
</table>

2. Interpersonal-Level Health Behavior Model

Theory of Interpersonal Health Behavior: Social Learning Theory Model (SLT)

A basic premise of SLT is that people learn not only through their own experiences, but also by observing the actions of others and the results of those actions [1]. In other words, behavior, personal factors and the environmental influences all interact continuously. SLT synthesizes concepts and process from cognitive, behavioristic and emotional models of behavior change. It is very complex and includes many key concepts. Five key concepts used to shape the behavior change process include:

1. **Reciprocal Determinism**: This means that behavior and the environment are reciprocal systems and that the influence is in both directions. So the environment shapes, maintains and constrains behavior; however, the learner is not passive in the process, he or she can create and change the environment. New knowledge, new skills and changed values can lead the learner to be an advocate within his or her immediate environment. For example, if the learner has a positive attitude about exercise, that may lead him or her to exercise. As he or she exercises more and more, that behavior causes him or her to rethink and strengthen his or her attitudes toward exercise.
2. **Behavioral Capability**: This maintains that the learner needs to know what to do and how to do it. A program should include clear instructions and skill training for the learner. Written materials in the form of take-home handouts reinforce the "how to" practiced during the program.

3. **Expectations**: This refers to the results that the learner thinks will occur as a result of learning. The curriculum must address the expectations of the learner. The trainer identifies these expectations at the beginning of the program. If some expectations are not met in the program, the trainer can guide the learner in meeting those expectations through other community health resources.

4. **Self-efficacy**: This refers to the learner's self-confidence and competence in his or her ability to change a specific health behavior or make a health decision. The learner needs to believe that he or she can do something about his or her health. It is the lack of confidence and competence about health issues that breaks down a person's ability to be an advocate for his or her health and the health of his or her family as he or she interacts with the health care system.

Self-efficacy is the most important concept in SLT. The advantages of greater self-efficacy include higher motivation in the face of obstacles and better chances of persisting over time. Five strategies can be used by trainers to increase self-efficacy:

- The learner identifies personal health actions to change or improve at the beginning of the learning process. This includes examining how willing he or she is to make the necessary changes or improvements. Self-assessment is a critical component of the curriculum.

- Knowledge is imparted, a variety of decision making strategies are discussed, and skills are practiced through group discussion, demonstrations, group activities, and individual self-assessments. This process provides the learner with the tools to address a particular health action and develop an action plan.

- The learner develops an action plan that stresses setting small, incremental goals. When someone achieves a small goal, like exercising for 10 minutes each day, his or her self-efficacy increases. Thus, the next goal (longer periods each day, five days in a row) seems achievable, and his or her persistence is greater.

- The action plan identifies specific, measurable goals; a person who supports the learner in attainment of the goals; a reward system for
recognizing success; and strategies for tracking progress. The action plan serves as a written behavioral contract.

- The written action plan lends to monitoring and reinforcement which reduces anxiety about one's ability to achieve a behavior change, thus increasing self-efficacy. Keeping a journal or chart is a useful tool to help track daily progress.

5. **Observational Learning or Modeling:** People learn about what to expect through the experiences of others. This is referred to as "modeling." Taking time in the program for both the trainer and participants to share experiences for success as well as failure for a particular health action are very useful to the learning process.

6. **Reinforcement:** Reinforcement is a response to a person's behavior that affects whether or not the behavior will be repeated. Positive reinforcement, often called "rewards," increases the chances that behaviors will be repeated. Negative reinforcements include punishment and lack of any response. Health education programs that provide tangible rewards or praise and encourage self-reward support people to establish positive habits. Extrinsic rewards to help motivate behavior change should be used with caution to avoid developing dependence on external reinforcements. They are often useful as motivators for continued participation but not for sustaining long-term change. Token reward systems and refundable deposits have been used successfully to increase participation rates and reduce attrition in programs involving multiple sessions such as smoking cessation, physical activity and weight management programs.

In summary, SLT assumes that the learner and the environment interact continuously. It is important to recognize that SLT clearly addresses both the psychosocial factors that determine health behavior and strategies to promote behavior change. Table 4 describes the application of this model.

3. **Community-Level Health Behavior Models**

**Diffusion of Innovations Theory (DIT)**
Diffusion is defined as the process by which an innovation is communicated through certain channels (networks with members, norms and social structures) over time among members of society. Innovation is an idea, practice, service or other object that is perceived as new by an individual or other unit of adoption. It is a major challenge in health education to disseminate new prevention, early detection, and treatment methods and to increase the use of programs and curricula that have been found to be successful.
DIT attempts to translate new health-related research findings or effective interventions into widespread behavior change for the good of society. Examples of new effective interventions include:

- A mobile mammography unit goes where the women are and saves these women the travel time and money necessary to take off work and go to a mammography facility (relative advantage).

- Providing the flu shot at work sites, schools and pharmacies reaches audiences that often avoid getting the flu shot because of inconvenience of going to the doctor for the vaccine (relative advantage).

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocal Determinism</td>
<td>Behavior changes result from interaction between person and environment; change is bidirectional</td>
<td>Involve the individual and relevant others; work to change the environment, if warranted</td>
</tr>
<tr>
<td>Behavior Capability</td>
<td>Knowledge and skills to influence behavior</td>
<td>Provide information and training about the action</td>
</tr>
<tr>
<td>Expectations</td>
<td>Beliefs about likely results of action</td>
<td>Incorporate information about likely results of action in advice</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Confidence in ability to take action and persist in action</td>
<td>Point out strengths; use persuasion and encouragement; approach behavior change in small steps</td>
</tr>
<tr>
<td>Observational Learning</td>
<td>Beliefs based on observing others like self and/or visible physical results</td>
<td>Point out others’ experience, physical changes; identify role models to emulate</td>
</tr>
<tr>
<td>Reinforcement</td>
<td>Responses to a person’s behavior that increase or decrease the chances of recurrence</td>
<td>Provide incentives, rewards, praise; encourage self-reward; decrease possibility of negative responses that deter positive changes</td>
</tr>
</tbody>
</table>

DIT addresses how new ideas, products and social practices spread within a society or from one society to another [3]. Some of the most important characteristics of innovations are their relative advantage (is it better than what was there before?), compatibility (does it fit with the intended audience?), complexity (ease of use), trialability (can it be tried out first?) and observability (visibility of results). Table 5 describes the application of this theory.
A culturally sensitive health video is more acceptable to the intended audience (compatibility).

A diabetes home testing kit may seem like a good idea, but if it is too difficult to use, most people with diabetes will avoid using it. Changing to a digital blood pressure monitor may be used more often because it is easier to use and understand than the stethoscope type model (complexity).

An open introductory session can attract more employees to register for a multiple-session work site wellness program than a course that permits only preregistration (trialability).

Presenting data about the number of women who are cancer survivors due to self-exams and mammograms provides a concrete sense of the value of breast cancer screening (observability).

Community Organization Theory
Community Organization Theory (COT) has its roots in theories of social networks and support. This theory emphasizes the role of community participation in solving health problems [2]. Many health education organizations use coalition structures for activating and involving community members, including the target audience, to identify common health problems or goals, mobilize resources, and develop and implement strategies for reaching goals. This is a useful tool for reaching underserved populations.
Five key concepts are used in COT (Table 6). The process of empowerment is intended to stimulate problem solving and activate community members. Community competence is an approximate community-level equivalent of self-efficacy plus behavioral capability, thus, the confidence and skills to solve problems effectively. Participation and relevance go together. They both involve citizen activation and a collective sense of readiness for change. Issue selection concerns identifying "winnable battles" as a focus for action, and critical consciousness stresses the active search for root causes of problems. Because of the creative and strategic nature of COT, it can lead to major health and health care advances in public support, funding and policies.

Table 6. Community Organization Theory

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowerment</td>
<td>Process of gaining mastery and power over oneself/one’s community to produce change</td>
<td>Give individuals and communities tools and responsibilities for making decisions that affect them</td>
</tr>
<tr>
<td>Community Competence</td>
<td>Community’s ability to engage in effective problem solving</td>
<td>Work with community to identify problems, create consensus and reach goals</td>
</tr>
<tr>
<td>Participation and Relevance</td>
<td>Learners should be active participants, and work should “start where the people are”</td>
<td>Help community set goals within the context of pre-existing goals, and encourage active participation</td>
</tr>
<tr>
<td>Issue Selection</td>
<td>Identifying winnable, simple and specific concerns as focus of action</td>
<td>Assist community in examining how they can communicate the concerns and whether success is likely</td>
</tr>
<tr>
<td>Critical Consciousness</td>
<td>Developing understanding of root causes of problems</td>
<td>Guide consideration of health concerns in broad perspective of social problems</td>
</tr>
</tbody>
</table>

Significance of Behavior Change Models to Extension Educators

Theory is a system of principles that attempt to explain how certain things happen. The theories described attempt to explain why people act as they do. Health education programs are more likely to benefit participants and accomplish expected behavior outcomes if they are guided by a theory of human behavior. In examining the components among the above models, four factors surface as influential on health behavior:

1. Perceptions of expected benefits. People have to get something in exchange for engaging in the behavior.
2. **Perceptions of expected costs.** People have to pay some cost to undertake the behavior.

3. **Community-level effect.** People—as individuals—do things if other people are doing them, even if their personal consequences are not all that favorable. People as a collective body can impact the health of their communities.

4. **Ability to affect outcomes, or self-efficacy.** People need to feel confident that they can make the behavior change, and communities need to feel they can impact the need for behavior change activities. This provides the seeds for empowerment.

The Extension educator must recognize that the learner comes to the learning environment with these forces guiding their ability to change behavior. Additionally, these theories identify the following factors that should be included in any health education program.

- **Knowledge:** A person must have information about a topic—facts, controversies, problems.
- **Self-efficacy:** A person must believe they have the ability to change their behavior and impact their health.
- **Skills:** A person must have and be able to use skills that will promote health.
- **Environmental support and influence:** The social environment (peers, family, school, work, home and community) must support and encourage the newly changed behaviors in order for the learner to be able to use the skills in daily living.

Table 7 summarizes the focus and key concepts of each of the theories described in this session. This table can be used to help in choosing multiple theories to help understand and address a specific health issue. These theories can be used for designing needs assessments, diagnosing educational delivery problems, and shaping the design of the intervention.
In summary, these theories are tools for the Extension educator to use in planning a health education program. By using a combination of levels, a comprehensive approach can be used to impact health behavior of a community as well as the individual.

Table 7. Summary of Theories: Focus and Key Concepts

<table>
<thead>
<tr>
<th>Model Level</th>
<th>Theory</th>
<th>Focus</th>
<th>Key Concepts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Level</td>
<td>Health Belief Model</td>
<td>Persons’ perception of the threat of a health problem and the appraisal of recommended behavior(s) for preventing or managing the problem</td>
<td>Perceived susceptibility Perceived severity Perceived benefits of action Perceived barriers to action Cues to action Self-efficacy</td>
</tr>
<tr>
<td></td>
<td>Stages of Change Model</td>
<td>Individual’s readiness to change or attempt to change toward healthy behaviors</td>
<td>Precontemplation Contemplation Preparation Action Maintenance Termination</td>
</tr>
<tr>
<td></td>
<td>Consumer Information Processing Model</td>
<td>Processing by which consumers acquire and use information in their decision making</td>
<td>Information processing Information search Decision rules Consumption and learning Information environment</td>
</tr>
<tr>
<td>Interpersonal Level</td>
<td>Social Learning Theory</td>
<td>Behavior is explained via a three-way, dynamic reciprocal theory in which personal factors, environmental influences and behavior continually interact</td>
<td>Behavioral capability Reciprocal determinism Expectations Self-efficacy Observational learning Reinforcement</td>
</tr>
</tbody>
</table>
References


Along with health behavior theories, health program planning models are essential to designing, implementing and evaluating effective health education programs. Two well-developed planning models that can be used to integrate diverse theoretical frameworks are Social Marketing and PRECEDE-PROCEED.

1. **Social Marketing Model**

Social marketing is defined as the design, implementation and control of programs seeking to increase the acceptability of a social idea or practice in a target group [2]. The principles and techniques of marketing are used to increase the effectiveness of programs designed to produce a social change. It uses concepts of market segmentation, consumer behavior research, concept development, communication, facilitation, incentives, and exchange theory to maximize target audience responses. This process can be used to promote healthy lifestyles or to teach specific changes in health behavior [1]. It is a viable tool in health promotion campaigns such as the National Diabetes Education Program, Diabetes and Flu/Pneumococcal Campaign, or National Poison Prevention Week. When properly designed, these campaigns can influence knowledge, attitudes and behaviors.

Knowledge change is easily achieved through social marketing. Social marketing is also effective in producing an action change such as getting the flu shot. But social marketing is least effective in behavioral change such as modification in food, smoking, exercise or drinking habits or value change.

Social marketing most often is used to accomplish three objectives:

1. Disseminate new data and information on practices to individuals; for example, informing the public about the role of medications in controlling the pain of arthritis.

2. Offset the negative effects of a practice or promotional effort by another organization or group; for example, combating the promotion testimonial-based arthritis treatments such as copper bracelets or collagen pills.

3. Motivate people to move from intention to action; for example, motivating the public to take control of their arthritis.

The marketing process or "mix" can be summarized by the "four Ps" of marketing management: the right **Product** backed by the right **Promotion** and put in the right **Place** at the right **Price**.

- **Product**: In health education the product is a specific health message promoting knowledge awareness or a specific behavior. To be marketed
successfully, the health message—**product**—must be developed with the needs and interests of the target audience in mind. A stress management program designed for adults will not be appropriate for the needs and interests of teenagers wanting to learn how to manage stress in their lives. Also, there may be a subgroup or segment with particular characteristics or profiles within the target audience such as teens who participate in 4-H clubs, teenage girls who are in a specific age group, or student athletes. The perceived barriers should appear small compared to the perceived benefits. The health message, “Get the Flu Shot Not the Flu!,” is an example of addressing benefits and barriers.

**Promotion:** The **promotion** component addresses how to make the program visible and attractive. Pretesting the product with a sample of the target audience provides information on the appropriateness of the product’s name and customer appeal. Pilot testing increases the likelihood of the products success.

**Place:** This relates to the distribution of the product through channels (sites where the target audience frequents) to reach the target audience. For example, channels for promotion or distribution of arthritis education include senior centers, grocery stores, banks, physician offices, churches, malls, work sites, service club meeting sites, and other sites where middle-aged and senior adults frequent. The fourth component, price, relates to the cost of participation in the program.

**Price:** The price addresses costs. Price includes both tangible and non-tangible costs to engage in an action or program. These costs may be expressed in many ways, including money, time, level of difficulty or discomfort, fear, or energy. Programs that are received well by the target audience are promoted by using clear statements about the relationship between costs and benefits for the participant.

Media is a major tool in social marketing and includes television, radio, newspapers, newsletters, brochures, billboards, posters, bumper stickers, buttons, t-shirts, etc. Other promotional tools may include:

- food demonstrations and tasting parties
- speakers’ bureaus
- health screenings at sites convenient to the target audience such as a flu shot at the pharmacy or grocery store
- booths and exhibits
- cooking contests with prizes for recipes that demonstrate health-promoting foods
- health poster contests for children through their schools
health fairs targeting a segment of the population
promotion of "disease of the month" campaigns such as National Osteoporosis Month or National High Blood Pressure Month with a multimedia campaign of community activities

The social marketing process consist of seven steps: planning (identification of target audience including segmentation of the target audience, marketing mix, objectives, and resources); selecting channels and materials; developing the program; pretesting effectiveness (formative and process evaluation) - what worked and what didn't and why; implementation (conduct activities); and refinement of the program based on the evaluation results, monitoring and evaluation.

2. The PRECEDE-PROCEED Model
The PRECEDE-PROCEED model provides a comprehensive, systematic planning process which seeks to empower individuals with understanding of motivation and skills and active engagement in community affairs to improve the quality of life [3]. This model recognizes that lasting behavior change is voluntary.

There are nine phases to this model. The first five phases are diagnostic. These phases assess the social, epidemiological, behavioral and environmental, educational and organizational, and, finally, administrative and policy issues relevant to the health education program. The remaining four phases address the implementation and evaluation of the health education program. Table 7 describes the nine phases and shows where health behavior change theory models apply.

Table 7. PRECEDE-PROCEED Planning Model

<table>
<thead>
<tr>
<th>Phases</th>
<th>Definition</th>
<th>Theory Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1 Social Diagnosis</td>
<td>Analysis of self-determined needs, wants, resources and barriers in the target community</td>
<td>Community Organization Theory</td>
</tr>
<tr>
<td>Phase 2 Epidemiological Diagnosis</td>
<td>Assessment of health problems (mortality and morbidity) and their risk factors: sociodemographic, educational and environmental influences</td>
<td></td>
</tr>
<tr>
<td>Phase 3 Behavioral and Environmental Diagnosis</td>
<td>Assessment of specific behavior and environmental factors for the program to address</td>
<td>Stages of Change Model, Social Learning Theory, Community Organization</td>
</tr>
</tbody>
</table>
### Phases

<table>
<thead>
<tr>
<th>Phases</th>
<th>Definition</th>
<th>Theory Application</th>
</tr>
</thead>
</table>
| **Phase 4 Educational and Organizational Diagnosis** | Analysis of predisposing (knowledge, attitude, cultural beliefs, readiness to change), enabling (resources, supportive policies, assistance and services) and reinforcing (rewards or incentives) conditions which immediately affect behavior | Health Belief Mode  
Consumer Information Processing  
Social Learning Theory  
Diffusion of Innovations |
| **Phase 5 Administrative and Policy Diagnosis** | Analysis of resources needed and available in the organization including barriers and supports | Diffusion of Innovation |
| **Phase 6 Implementation** | Conducting the program |  |
| **Phase 7 Process Evaluation** | Evaluating the program components, pilot testing to debug problems |  |
| **Phase 8 Impact Evaluation** | Determining the immediate effect of the program |  |
| **Phase 9 Outcome Evaluation** | Determining the long-term effect of the program |  |

### The Health Education Program Plan

Regardless of what planning model is used, there are essential elements common to the designing a health education program targeting a specific health problem. The essential components of a program plan include the following:

- **Establishing a planning group:** This may or may not be needed depending on the program focus. Planning groups can include both internal and external members of the organization. External members may include other health professionals, stakeholders, volunteers, and members of the target audience. The planning group may be a county coalition or health council that has identified a health problem unique to the community and wants to pool county resources to address the problem. The advantage of a planning group is the multi-disciplinary nature, the
variety resources (educational, professional and dollars), different channels to the target audience, and experience with the target audience. The disadvantage to planning groups is that they require extra time to mobilize the group in order to reach consensus in the develop of the program plan.

**Stating goals:** These are broad statements that define what the health education program is expected to accomplish. Long and short-term goals need to be recognized. Short-term goals can be accomplished such as protecting the community against the influenza virus through immunization. It is a short-term goal and can be easily stated in behavioral terms. But a goal of improving the health status of a community is a timeless goal and will not be accomplished in a reasonable amount of time. The short-term goals help achieve the long-term goals of a program. The following are examples of long and short-term goals:

- **Long-term goal:** Reduce mortality from cardiovascular diseases by altering the knowledge, attitudes and behaviors among postmenopausal women regarding blood pressure screening and the risk factors for heart disease.

- **Short-term goal:** Reduce sedentary behaviors among post-menopausal women by providing an exercise program.

**Stating objectives:** These are statements that map out the learner’s or planner’s tasks needed to reach a goal. They may include the direction, magnitude and measurement of change. Objectives state the specific knowledge, attitudes and behavior changes needed to achieve the goal. These objectives should be **specific, measurable, assigned to a specific target audience, realistic, and reflect a specific timeframe (SMART).** They set the agenda for program evaluation. Tools for writing objectives are included in the Appendix. The following are examples of learner objectives:

Upon completion of the program (Timeframe)...

- participants (assigned to a specific target audience) will describe the relationship between early detection and successful control of high blood pressure. (Knowledge objective that is specific, measurable and realistic)

- participants will state the numerical range for normal blood pressure and high blood pressure. (Knowledge)

- participants will list two ways they plan to control their high blood pressure. (Behavior)
• participants will state at least two ways that high blood pressure is
treated. (Knowledge)

• participants will list at least two types of high blood pressure medica-
tions. (Knowledge)

• participants will accurately use a digital blood pressure monitor.
(behavior)

• participants will appreciate the importance of taking high blood pres-
sure medication as prescribed by helping a loved one take their blood
pressure medication. (attitude)

✓ Identifying methods: These are the means through which the changes
will be made. Methods identify the vehicle for education such as mass
media, videos, role playing, community development, case studies, lec-
ture-discussion, self-assessments, and skill development.

✓ Identifying resources and barriers: Specific resources in the target
community may be used for the program to bring about change. Barriers
are the forces that are expected to work against the program.

✓ Developing the evaluation plan: Procedures for determining whether
the program performed as planned are defined. Program indicators are
defined based on the learner objectives. Indicators are markers of the
accomplishments by the learner. The evaluation plan is based on the
program objectives and indicators and are designed before the program
is implemented.

✓ Implementing the plan: Procedures for promoting the program, recruit-
ing the target audience, and conducting the program activities are
described.

✓ Evaluating the program: Evaluation can range from simple to complex,
from consideration of the most basic elements of the program to abstract
implications. The more complex the evaluation, the greater the costs, the
level of professional expertise, and time requirements.
References

