14. PUBLIC HEALTH INFRASTRUCTURE

Goal

Ensure that the public health infrastructure at the state and local levels has the capacity to provide essential public health services.

Terminology

Epidemiology services – Basic components of epidemiology include surveillance of disease, injuries, and other health conditions; monitoring community health status; diagnosis and investigation of community health problems and hazards; control of communicable diseases; quality data collection, and analysis of community-based health data.

Essential public health activities – The public services described in the Public Health in America statement, including monitor health status, diagnose and investigate health problem; inform, educate, and empower people; mobilize community partnerships; develop policies and plans; enforce laws and regulations; link people to needed services; conduct evaluations; and conduct research.

Geographic information system (GIS) – A tool combining geography and computers that allows information to be viewed on maps. Large volumes of data can be explored for spatial relationships, patterns, trends, and other statistical analysis.

Population-based prevention research – Research focused on the most effective public health practices for primary, secondary, and tertiary prevention in populations.

Privacy, confidentiality, and security – Privacy refers to the protection of the individual from unwanted contact by data users. Confidentiality refers to the protection of the identity of the individual. Security refers to the protection of data from access by unauthorized users. There can be different levels of access depending on the needs of the data user and applicable laws.

Public health and environmental laboratory services - Includes health and environmental assessment, surveillance, quality assurance, training, and consultation services. Public health population-based laboratory services include a core set of tests in environmental, pathology, hematology, chemistry, and microbiology services.

Overview

The mission of public health is to prevent epidemics and the spread of disease, protect against environmental hazards, prevent injuries, promote and encourage healthy behaviors, respond to disasters and assist communities in recovery, and ensure the quality and accessibility of health services. To achieve this mission, a strong infrastructure is needed that integrates activities throughout the federal, state, and local levels. The infrastructure is the underlying base or foundation that supports planning, delivery, and evaluation of public health activities and practices.

The public health infrastructure is a complex web of practices and organizations. Unfortunately, the public health system may be deteriorating: health departments are cutting back services, technology and information systems are outmoded, emerging and drug-resistant diseases threaten to overwhelm resources, and training inadequacies threaten the capacity of the public health workforce to address new and changing health care markets. Additionally, new providers of public health services, such as managed care organizations, have emerged within communities.

Public health workers are the heart of all successful public health initiatives. They focus on populations and communities. In their efforts to ensure quality and accessible health services, they apply their knowledge of epidemiology and biostatistics and their ability to build coalitions and support systemic change. Their work transcends the individual professional and technical skills brought to public health by environmentalists, health educators, managers, microbiologists, nurses, physicians, and others. There is reason to be concerned, however, that the current public health workforce may not be fully prepared for the work that is required today and will continue to be necessary in the next century.

Schools of Public Health and accredited programs of public health are educating and training tomorrow's public health workforce, including directors of local public health departments and state public health policy developers. These emerging workers and leaders must be well grounded in the core public health functions and the essential public health services.

With the rapidly evolving health care systems, the changing face of public health, and the continually growing diversity of the workforce, all public health workers need a continuous comprehensive source of continuing education and training. Although several disciplines (nurses, physicians, dietitians and nutritionists) have continuing education requirements as a part of licensure/certification, the continuing education and training should extend to all public health workers, whether licensed or not, certified, or otherwise accredited. State and local health departments need to ensure the access and availability of continuing education or training to the entire public health workforce.

Healthy Kentuckians 2000 did not have a specific focus area on public health infrastructure. Many of the new objectives on infrastructure are developmental. Efforts

to better define, achieve, and measure objectives relating to infrastructure are the basis for this chapter.

Progress Toward Year 2000 Objectives

Update on Current Status

Hospital discharge and outpatient UB92 data collection and analysis continue to be collected even though the Kentucky Health Policy Board was dissolved in 1996. This function was placed in the Kentucky Department for Public Health (KDPH), Division of Epidemiology and Health Planning, Health Policy Development Branch.

22.1. By 1992, identify, and create where necessary, data sources necessary to track and evaluate progress toward each of the Year 2000 Kentucky and national health objectives.

Kentucky continues to participate in the Behavioral Risk Factor Surveillance System (BRFSS) to track and evaluate factors affecting health. The importance of this data for programmatic use and evaluation has been demonstrated by specifying its use in new chronic disease grants. To develop meaningful statistical samples for use by local health departments, the BRFSS has more than doubled its annual statewide sample size to 7500 for 1999. This is the largest sample size for any single state in the U.S.

Injury surveillance expanded in the areas of occupational and community injury prevention with the formation of the Kentucky Injury Prevention Research Center (KIPRC) in 1995. KIPRC is a partnership between the KDPH and the University of Kentucky. The University has designated this program as a "Center" which elevates the program to the same status as a Department with accompanying administrative, academic, and financial support.

22.2. Within one year of dissemination by the Federal government of a set of common data elements for each of the *Healthy People 2000* national health objectives priority areas, assure that these common data elements are collected in Kentucky and made available to program managers and other health professionals.

Renaissance Worldwide was awarded contracts from 1995-1997 to examine the different data sets housed and used by the KDPH. It was determined that approximately 65 different data sets exist within KDPH. Data sets were examined by the contractors and data dictionaries from each data set were developed. General recommendations were to bring uniformity to data collection through common data elements, common software use, the ability to integrate data sets into a unified system, and simplified access of data by various data users.

22.3. Within one year of dissemination by the Federal government of a set of health status indicators, assure that these indicators are collected in Kentucky and made available to program managers and other health professionals.

The Division of Epidemiology collected and assessed Kentucky data for the eighteen consensus indicators. In January, 1996, and again in 1998, documents were published and made available to program managers and health professionals.

22.4. By 1992, design, conduct, analyze, and report to the public and to health professionals a combined health interview/health examination survey of a representative sample of Kentuckians. The survey should be designed primarily to provide baseline data for the Year 2000 Objectives. A comparable survey should also be conducted in 2000, and, if resources permit, in 1995.

The Kentucky Interview and Examination Survey was conducted in late 1993 and published in 1995. This statewide survey of the health status of Kentuckians was modeled after the National Health and Nutrition Examination Survey III (NHANES). The survey assessed, as accurately as possible, the health status of Kentucky's population at one point in time. It has provided baseline data on the health status, health risks, and health care access/utilization of Kentuckians.

22.5. In 1995 and again in 2000, disseminate to the public and to health professionals an analysis of Kentucky's progress toward meeting each of the *Healthy People 2000* objectives.

This document fulfills this objective.

22.6. By 1992, design and implement an integrated environmental hazards database which includes measures of health outcomes or exposure.

Progress is being made on this objective through computerization of the reports of certain hazards, e.g. animal bites, by local health departments into the Central Data Processing computer system, and use of the new Simplified Access System and Simplified Regulatory System used by the Division of Public Health Protection and Safety.

2010 Objectives

14.1. (Developmental) **Increase to 100 percent the number of local health departments that incorporate specific competencies for public health workers into the public health personnel system.**

Target Setting Method: That which is desirable and achievable for Kentucky.

Potential Data Source: Establish a baseline of specific competencies for each classification of public health workers.

Implementation Strategy:

- Determine the current status of "competency" of the Kentucky Public Health Workforce.
- Assess the current level of proficiency in the practice of each competency.
- Develop measurable performance indicators for the identified competencies.
- Identify gaps between high-priority competencies that are needed and those competencies already present in the public health workforce.
- Establish standards of practice based on approved competencies that are incorporated in the position descriptions.
- Develop a method of assessing whether the standards are being met.

14.2. (Developmental) **Increase the number of schools training public health workers that integrate specific training in the essential public health services into their curricula.**

Target Setting Method: That which is desirable and achievable for Kentucky.

Potential Data Source:
Define the baseline for the essential public health services to be included in each discipline's curriculum in Kentucky's three schools of public health.

Implementation Strategy:

- Integrate public health education into the curriculum of discipline-specific undergraduate and graduate programs training public health workers.
- Include public health training in the curriculum of the associate degree nurse.
- Designate one full semester in community/essential services of public health in the Bachelor's program for nurses.
- Encourage the schools of public health to include a clinical internship program at the masters and doctoral levels.
- Require a minimum of one semester in Principles of Epidemiology in all discipline-specific undergraduate programs.
- Incorporate the concept of change theory into essential services.
- Provide opportunities for career ladders to nurses, health educators, and related disciplines to advance training in essential public health services.

14.3. (Developmental) **Increase by 10 percent the number of public health agencies that provide continuing education and training to 100 percent of their employees to improve performance of the essential public health services.**

Target Setting Method: That which is desirable and achievable for Kentucky.

Potential Data Sources: Professional providerships of continuing education for discipline-specific licensure/certification, State Licensure Boards, Council on Higher Education

Implementation Strategy:

- Establish a baseline for training/continuing education for 100 percent of public health workers. Determine number of hours per year as requirement for workers not required by licensure/certification to receive continuing education and/or training.
- Develop a basic, intermediate, and advanced continuing education/training curricula to train current and future public health workers in the identified competencies.
- Include funding in the general budget for continuing education and training for the public health workforce. This funding would target specific public health workers.
- The basic public health competencies should be supported where existing and developed where not yet in place.
- Implementation of the continuing education/training program for public health workers should be implemented in accordance with the Kentucky Public Health Improvement Plan and make maximum use of the existing infrastructure for training and staff development at the state level.
- All providers of continuing education/training should make maximum use of evolving technologies such as distance learning.

14.4. All state and local health departments will provide on site access to data via electronic systems and on-line information systems such as the Internet.

Target Setting Method: That which is desirable and achievable for Kentucky.

Data Source: Division of Local Health Department Operations, special surveys.

Implementation Strategy:

- Develop a secure, internet-based application for direct input of data into a central database and appropriate analytic tools for use by individuals accessing that data.
- Provide computer equipment, software, and internet connections to all health department sites.
- Provide training for state and local personnel to utilize on site data access.

14.5. (Developmental) **To ensure that all Kentuckians will have access to public health information and surveillance data while maintaining privacy, confidentiality, and security.**

Target Setting Method: That which is desirable and achievable for Kentucky

Potential Data Source: Computer web site access logs, special surveys.

Implementation Strategy:

- Place state and local public health information on a publicly accessible Internet site. Privacy, confidentiality, and security must be maintained.
- Assure that internet access is available to all Kentuckians either at home, at work, at school, or a public site, e.g. library.

14.6. Increase to 100 percent the proportion of *Healthy People 2010* objectives that can be tracked for select populations.

Target Setting Method: Same as the national target.

Data Sources: BRFSS, Vital Statistics, Reportable Disease Registry, Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS)

Implementation Strategy:

- Complete the 2000 Federal Census.
- Complete the new Vital Statistics System.
- Develop interagency demographic information sharing.

14.7. Increase to 90 percent the proportion of *Healthy People 2010* objectives that are tracked at least every 3 years, and to 60 percent the proportion of objectives that are tracked annually.

Target Setting Method: Lower than the national target, but achievable for Kentucky.

Data Sources: BRFSS, Vital Statistics, Reportable Disease Registry, CDC, NCHS

Implementation Strategy:

- Continue to collect surveillance and vital data.
- Analyze data at 1 and 3 year intervals.
- Disseminate information to health care community and public.

14.8. (Developmental**) Increase the use of geocoding in all state health data systems to promote geographical information systems (GIS) as a tool for enhanced surveillance and data information.**

Target Setting Method: Same as the national target

Potential Data Source: GIS surveillance

Implementation Strategy:

- Acquire GIS software for KDPH use.
- Train KDPH staff in use of and applications for GIS.
- Include geocoding in data collection systems.

14.9. Ensure access to an essential set of accurate, reliable, and timely population-based public health and environmental health laboratory services primarily in support of the Department of Public Health, but also in support of the Department of Mental Health and Mental Retardation, the Justice Cabinet, and the Labor Cabinet.

Target Setting Method: *Healthy People 2010* stresses that public health is in danger because insufficient attention has been given to describe the full range of essential public health laboratory services. Access to population-based services is hampered when financial incentives and personal health needs take precedence over the public health system. The Clinical Laboratory Improvement Amendments (CLIA) of 1988 have been instrumental in improving the quality of personal-health laboratory practices nationally.

Data Source: The impact on health due to personal laboratory tests or environmental laboratory tests cannot be measured independently, but must be measured in terms of benefits to the health programs served. Federal regulations enacting CLIA '88 establish compliance standards for laboratory personnel, quality assurance, and proficiency testing for all laboratories performing diagnostic clinical testing on human specimens. The Division of Laboratory Services is certified as a high complexity laboratory, obligating it to meet the most stringent requirements for quality assurance, quality control, and personnel requirements. Kentucky Revised Statutes 211.190 (8) requires the Cabinet for Health Services to establish, maintain, and operate public health laboratories. Additional Kentucky statutes govern operation of a clinical laboratory practice, analysis of milk and milk products, serological tests for syphilis, newborn screening, human immunodeficiency virus (HIV0 testing, analyses of private water supplies for bacterial and chemical contamination, radiation monitoring, testing in support of outpatient tuberculosis clinics, and rabies testing. Success can be measured by meeting the needs of public health programs served and by meeting the requirements of State and Federal statutes regulating laboratory practice for which criteria is clearly delineated.

Implementation Strategy:

- Develop and maintain an effective Laboratory Information Management System which supports both internal and external data needs.

- Continue to monitor, evaluate and update the scientific technology replacement plan with a goal of acquiring state-of-the-art scientific technology.
- Ensure adequate, appropriately trained staff for provision of requested laboratory services.
- Maintain flexibility necessary to provide laboratory support in responding to emerging public health needs.
- Promote a safe working environment.
- Achieve client satisfaction and be recognized as an essential resource.

14.10. Increase to 100 percent the proportion of local health departments that provide comprehensive epidemiology services to support core public health activities.

Target setting method: That which is desirable and achievable for Kentucky. KDPH has identified surveillance of public health and communicable disease control as core functions.

Data source: Kentucky reportable disease system, outbreak investigation reports.

Implementation Strategy:

- Train state and local personnel to perform public health surveillance.
- Train state and local personnel in communicable disease control methods.
- Provide state and local personnel with computer software, hardware, and other tools necessary to perform surveillance and disease control.
- Inform and educate the public about health issues and risk reduction.
- Inform and educate private providers about surveillance and disease control.

14.11. Increase the proportion of state and local public health agencies that make data available on public health expenditures for essential public health activities.

Target setting method: Same as the national target.

Data sources: KDPH, local health departments.

Implementation Strategy:

- Develop standardized accounting methods for reporting essential service expenditures.
- Regularly report essential service expenditures to the public and funding agencies.

14.12. (Developmental**) Facilitate greater collaboration and cooperation between public and private agencies for conducting population-based prevention research.**

Target setting method: Same as the national target.

Implementation Strategy:

- Establish formal relationships between state and local health departments and private agencies with public health and community interests. Examples are: managed care organizations, private foundations, charities, and health care product producers.
- Assist these private agencies with epidemiologic expertise.

14.13. (Developmental**) Increase the number of state and local health agencies that use summary measures of population health.**

Target setting method: Same as the national target.

Implementation Strategy:

- Assist local health departments in developing summary measures of population health.
- Provide to health departments local data that is collected statewide.
- Develop statewide summary measures of population health.

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