

**Health Priority: Existing, Emerging, and Re-emerging Communicable Diseases
Objective 1: Statewide Communicable Disease Surveillance and Response
(Template)**

Long-term (2010) Subcommittee Outcome Objective:

Assure the timely detection of, and effective response to, communicable diseases.

1a: By 2010, at least 85 percent of communicable disease reports will be received by the local or state public health agency within the timeframe specified by HFS 145.04(3)(a) and HFS 145.04(3)(b).

1b: By 2010, 100 percent of local health departments will have documented capacity to respond to outbreaks of communicable disease as defined in HFS 140.

Long-term outcome objective updated as of: Sept 2004

Wisconsin Baseline	Wisconsin Sources and Year
None. Objectives (1a) and (1b) are developmental objectives.	

Federal/National Baseline	Federal/National Sources and Year
National Notifiable Disease Surveillance System (NNDSS)	1999 - Annual Summary of Notifiable Diseases – Table 1: Reported Cases by Month; Table 3: Reported Cases by Age Group; Table 4: Reported Cases by Sex.

<p>National Electronic Telecommunications System for Surveillance (NETSS).</p> <p>Acquired Immunodeficiency Syndrome (AIDS); Anthrax; Botulism; Brucellosis; Chancroid; Chlamydia trachomatis, genital infections; Cholera; Coccidioidomycosis; Cryptosporidiosis; Cyclosporiasis; Diphtheria; Ehrlichiosis; Encephalitis, Arboviral; Enterohemorrhagic Escherichia coli; Giardiasis; Gonorrhea; Haemophilus influenzae, invasive disease; Hansen disease (leprosy); Hantavirus pulmonary syndrome; Hemolytic uremic syndrome, post-diarrheal; Hepatitis, viral, acute; HIV infection; Legionellosis; Listeriosis; Lyme disease; Malaria; Measles; Meningococcal disease; Mumps; Pertussis; Plague; Poliomyelitis, paralytic; Psittacosis; Q Fever; Rabies; Rocky Mountain spotted fever; Rubella; Rubella, congenital syndrome; Salmonellosis; Shigellosis; Streptococcal disease, invasive, Group A; Streptococcal toxic-shock syndrome; Streptococcus pneumoniae, drug resistant, invasive disease; Streptococcus pneumoniae, invasive in children <5 years; Syphilis; Tetanus; Toxic-shock syndrome; Trichinosis; Tuberculosis; Tularemia; Typhoid fever; Varicella (deaths only); Yellow fever.</p>	<p>1999 - Annual Summary of Notifiable Diseases – Table 1: Reported Cases by Month; Table 3: Reported Cases by Age Group; Table 4: Reported Cases by Sex.</p>
---	---

Related USDHHS Healthy People 2010 Objectives			
Chapter	Goal	Objective Number	Objective Statement
8 – Environmental Health	Promote health for all through a healthy environment.	8-28	(Developmental) Increase the number of local health departments or agencies that use data from surveillance of environmental risk factors as part of their vector control programs.
13 - HIV	Prevent human immunodeficiency virus (HIV) infection and its related illness and death.	13-10	(Developmental) Increase the proportion of inmates in State prison systems who receive voluntary HIV counseling and testing during incarceration.
		13-11	Increase the proportion of adults with tuberculosis (TB) who have been tested for HIV.
		13-12	(Developmental) Increase the proportion of adults in publicly funded HIV counseling and testing sites who are screened for common bacterial sexually transmitted diseases (STDs) (chlamydia, gonorrhea, and syphilis) and are immunized against hepatitis B virus.
		13-13	Increase the proportion of HIV-infected adolescents and adults who receive testing, treatment, and prophylaxis consistent with current Public Health Service treatment guidelines.
14 - Immunization and Infectious Diseases	Prevent disease, disability, and death from infectious diseases, including vaccine-preventable diseases.		No DHHS objective is specific to this area.
23 – Public Health Infrastructure	Ensure that Federal, Tribal, State, and local health agencies have the infrastructure to provide essential public health services effectively.	23-5	(Developmental) Increase the proportion of Leading Health Indicators, Health Status Indicators, and Priority Data Needs for which data—especially for select populations—are available at the Tribal, State, and local levels.

Related USDHHS Healthy People 2010 Objectives			
Chapter	Goal	Objective Number	Objective Statement
		23-8	(Developmental) Increase the proportion of Federal, Tribal, State, and local agencies that incorporate specific competencies in the essential public health services into personnel systems.
		23-10	(Developmental) Increase the proportion of Federal, Tribal, State, and local agencies that provide continuing education to develop competency in essential public health services for their employees.
		23-11	(Developmental) Increase the proportion of State and local agencies that meet national performance standards for essential public health services.
		23-13	(Developmental) Increase the proportion of Tribal, State, and local agencies that provide or assure comprehensive laboratory services to support essential public health services.
		23-14	(Developmental) Increase the proportion of Tribal, State, and local public health agencies that provide or assure comprehensive epidemiology services to support essential public health services.
25 – Sexually Transmitted Diseases	Promote responsible sexual behaviors, strengthen community capacity, and increase access to quality services to prevent sexually transmitted diseases (STDs) and their complications.	25-13	Increase the proportion of Tribal, State, and local sexually transmitted disease programs that routinely offer hepatitis B vaccines to all STD clients.

Related USDHHS Healthy People 2010 Objectives			
Chapter	Goal	Objective Number	Objective Statement
		25-14	(Developmental) Increase the proportion of youth detention facilities and adult city or county jails that screen for common bacterial sexually transmitted diseases within 24 hours of admission and treat STDs (when necessary) before persons are released.

Definitions	
Term	Definition
Operating system of surveillance	The collective mechanisms, instrumentalities, modalities, and procedural methodologies necessary for the ongoing systematic collection, collation, analysis, and interpretation of data; and the dissemination of information to those who need to know in order that action may be taken.
Capital resources	Tangible physical and electronic goods and property, including real and intellectual property. Examples may include computer hardware and software; communications equipment; facilities for work, storage, and patient care space; office and medical supplies and equipment; transportation vehicles and equipment; and the financial assets necessary to obtain, maintain, and utilize such goods and property as they are needed.
Qualified epidemiologist	An individual whose training and experience in the professional discipline fields of epidemiology and public health, satisfy requirements established by, and has received certification from, the Wisconsin Division of Public Health.
Pathogen differentiation	Clinical laboratory analyses which distinguish between and characterize closely related disease causing organisms, based on genotype (hereditary factors of a given organism) and/or serotype (types of antibodies produced by the body in response to a given organism).
State/local public health preparedness system for bioterrorism and disease outbreaks	The system of planned and coordinated capacity of state and local public health agencies; hospitals and medical clinics; emergency government, emergency response, and criminal justice agencies; and other appropriate stakeholders, which has been formed and collectively equipped to respond to major public health emergencies.
Timeliness of reporting	The length of time between a clinical or laboratory diagnosis of a case, and receipt of a report.
Completeness of report	The information received on a case report form adequate for

Definitions	
Term	Definition
data	public health follow up and investigation. Note: Core data fields will vary depending on the type of disease or condition, and definition of core data fields will change over time.

Rationale:

Effective and timely control of communicable diseases can only be assured if there is a comprehensive system of disease surveillance in place and the corresponding capacity exists for swift and appropriate response to disease occurrence. This is an essential capacity for the state/local public health system. This system must not only respond to the routine occurrence of communicable disease outbreaks over the course of any given year, but also prepare for the potential occurrence of a major epidemic or even pandemic of an emerging infectious disease, or the “low probability-high threat” scenario, of intentional release of a bioterrorist pathogen, with potential for rapid spread within a population, and devastating effects on infected individuals and the community at large. The readiness to deal effectively with potential population-wide mass infectious disease events--possibly from pathogens that are rare or atypical in present public health and medical system experience--will require the state and local public health agencies to establish working relationships with nongovernmental entities and to develop functional capabilities which are of a scope and degree of sophistication that are well in advance of the normal and traditional requirements for communicable disease control. The benefits of going forward with a broad-based systemic surveillance expansion and transformation initiative are threefold: (1) to establish a system which provides early detection and public protection equally against both naturally occurring and intentionally induced infectious disease threats; (2) to introduce system enhancements in a manner which is rationally planned and proactively initiated, rather than a reactive response to an already occurring emergency situation; and, (3) to establish a system in which optimal achievement of objectives occurs in the most cost-effective manner to the public.

Outcomes:

Short-term Outcome Objectives (2002-2004)

- By December 31, 2004, Wisconsin will have an operating system of surveillance for all major, reportable communicable diseases which will also include components of sentinel surveillance for new and emerging pathogens which are not yet reportable by law, and for acts of bioterrorism. The system will perform the six core activities of: (1) detection; (2) registration; (3) confirmation (both epidemiological and laboratory); (4) reporting; (5) analyses; and (6) feedback.
- By December 31, 2004, the state/local public health preparedness system for bioterrorism and disease outbreaks will have and will demonstrate the capability for acute (epidemic-type) responses to naturally occurring or terrorist-initiated infectious disease events.

Inputs: *(What we invest – staff, volunteers, time money, technology, equipment, etc.)*

- Time and effort of state and local public health staff.
- Federal/state funding of hardware, software, and information system technical support for disease reporting and surveillance data collection and storage.

- Federal/state funding of public health laboratory human and capital resources sufficient to maintain adequate, routine, and emergency testing capacity for state and local health department testing, and sufficient state-of-the-art technical assistance and reference laboratory capacity to assist and backup private clinical laboratories performing infectious disease testing analyses.
- An adequate statutory and legal base for disease reporting and surveillance activities.
- The cooperative commitment of private health care providers to participate in public health infectious disease control activities.

Outputs: *(What is done – workshops, meetings, product development, training. Who is reached – community residents, agencies, organizations, elected officials, policy leaders, etc.)*

- The Wisconsin Division of Public Health will assist local health departments and local medical/clinical group practices to develop an orientation to communicable disease reporting and control programs for newly employed physicians and other appropriate clinical staff.
- The Wisconsin Division of Public Health and the Wisconsin State Laboratory of Hygiene will establish and maintain an epidemiologic system, which directly and through the coordinated efforts of local providers is capable of providing early detection of and response to any infectious disease outbreaks or acts of bioterrorism which would threaten the health and safety of the state's citizens.
- The Wisconsin Division of Public Health will establish qualifications for "Qualified Public Health Epidemiologists" in Administrative Rule HFS 139 and will establish a registry of those who are employed in local health departments and the corresponding number of local health departments which employ one or more "qualified epidemiologists."
- The Wisconsin Division of Public Health will establish and maintain ongoing state mechanisms for training and credentialing local health department staff in epidemiology to increase the capacity of local health departments to perform epidemiological surveillance and investigations.
- The Wisconsin Division of Public Health will revise Administrative Rule HFS 145, and, if necessary, draft proposed statute revisions to require disease reports to include specified locator information on the infected individual.

Medium-term Outcome Objectives (2005-2007)

- By January 31, 2005, 100 percent of cases of E. coli .0157, hepatitis C, tuberculosis, and HIV infection will be reported to the appropriate public health authority within the timeframe which is specified in the Wisconsin Administrative Code.
- By June 30, 2005, the Division of Public Health will utilize an electronic reporting and surveillance system for all reportable communicable diseases.
- By January 31, 2006, the percentage of the total number of laboratory-confirmed cases of E. coli .0157, hepatitis C, tuberculosis, and HIV infection that are reported to the appropriate public health agencies will increase by 50 percent or will equal 95 percent or greater of the total number of cases.

- By March 31, 2006, 80 percent of medical/clinical group practices will have implemented an orientation for newly employed clinicians on state disease reporting requirements and systems within the group practice to ensure compliance.
- By March 31, 2007, 100 percent of local health departments will either employ, share through an epidemiological consortium, or contract for the services of an individual who is credentialed by the Wisconsin Division of Public Health as an epidemiologist.
- By October 31, 2007, all hospital emergency departments will electronically report all cases of reportable diseases and all patients with selected symptoms or nonspecific syndromes which are suggestive of bioterrorist or epidemic pathogens to the Division of Public Health within 8 hours of clinical determination.
- By October 31, 2007, Wisconsin clinical laboratories will electronically report positive test results for reportable diseases within 4 hours of having identified and confirmed the pathogen.

Inputs: (*What we invest – staff, volunteers, time money, technology, equipment, etc.*)

- Time and effort of state and local public health staff.
- State funding of hardware, software, and electronic information system technical support for disease reporting and surveillance data collection and storage.
- State funding of public health laboratory human and capital resources sufficient to maintain adequate routine and emergency testing capacity for state and local public health department testing and sufficient state-of-the-art technical assistance and reference laboratory capacity to assist and backup private clinical labs performing infectious disease testing analyses.
- An adequate statutory and legal base for disease reporting and surveillance activities.
- The cooperative commitment of private health care providers to participate in public health infectious disease control activities.

Outputs: (*What is done – workshops, meetings, product development, training. Who is reached – community residents, agencies, organizations, elected officials, policy leaders, etc.*)

- The Wisconsin Division of Public Health will create and maintain an electronic communicable disease reporting system with interactive and analytic capabilities as defined and accepted by the Wisconsin Public Health Data Steering Committee for use by all clinical and laboratory providers and all local health departments in the state.
- All reporters will receive appropriate training on how to use the electronic system.
- Local health departments will receive all communicable disease reports electronically, and will have the ability to electronically store and analyze the information received, in order to inform and expedite response actions.

Long-term Outcome Objectives (2008-2010)

- By March 31, 2008, Wisconsin clinical group practices will electronically report cases of reportable diseases within 4 hours of having made the diagnosis.

- By December 31, 2008, the public health communicable disease surveillance system will provide complete real-time information of the status and occurrence of infectious diseases of public health significance in every local public health jurisdiction in the state.
- By March 31, 2009, the percentage of all cases of laboratory-confirmed reportable diseases which are reported to the appropriate public health authority will increase by 50 percent.
- By December 31, 2009, the state/local public health preparedness system for bioterrorism and disease outbreaks will have and will demonstrate the capability for planned (management-type) responses to naturally occurring or terrorist-initiated infectious disease events, including the continual anticipatory development and updating of all personnel, material, and knowledge-based resources likely to be necessary to respond to potential future events.

Inputs: (*What we invest – staff, volunteers, time money, technology, equipment, etc.*)

- Time and effort of state and local public health staff.
- State funding of hardware, software, and electronic information system technical support for disease reporting and surveillance data collection and storage.
- State funding of public health laboratory human and capital resources sufficient to maintain adequate routine and emergency testing capacity for state and local public health department testing and sufficient state-of-the-art technical assistance and reference laboratory capacity to assist and backup private clinical labs performing infectious disease testing analyses.
- An adequate statutory and legal base for disease reporting and surveillance activities.
- The cooperative commitment of private health care providers and other relevant stakeholders to participate in public health infectious disease control activities.

Outputs: (*What is done – workshops, meetings, product development, training. Who is reached – community residents, agencies, organizations, elected officials, policy leaders, etc.*)

Activities:

- Both the Wisconsin Division of Public Health and local health departments will use laboratory information on pathogen differentiation to respond to the occurrence of significant communicable disease events occurring within respective jurisdictions and to coordinate response to outbreaks which cross jurisdictions.
- Laboratory specimens of selected reportable pathogens will receive appropriate differentiation testing to identify outbreaks of the selected diseases.
- The Wisconsin Division of Public Health will promulgate protocols to define an “outbreak” condition for each reportable disease and describe the public health actions and response steps necessary to counter it.
- Local health departments will routinely review communicable disease reports for differentiation information, to identify related disease clusters occurring within the local jurisdiction and evidence of disease transmission occurring across jurisdictions.

Participation/Reach:

- Department of Health and Family Services Division of Public Health Bureau of Communicable Diseases
- Local health departments
- Clinical laboratories
- Clinical/medical group practices
- Communicable disease clinicians and institutional infection control practitioners

Evaluation and Measurement:

In addition to the measurable outcomes noted above, the overall statewide surveillance system will be evaluated using *Updated Guidelines for Evaluating Public Health Surveillance Systems* (CDC-MMWR. July 27, 2001). These guidelines recommend that the surveillance system be evaluated in terms of 9 attribute areas (Simplicity, Flexibility, Data Quality, Acceptability, Sensitivity, Predictive Value Positive, Representativeness, Timeliness, and Stability) and suggests methodology for evaluating each.

Crosswalk to Other Health and System Priorities in Healthiest Wisconsin 2010

An improved, more effective and responsive disease surveillance and control system will be heavily reliant on state-of-the-art, real time communication systems, linking diagnosing disease reporters to the public health surveillance system. Such systems will require not only the best available electronic communication technology, but also a workforce of skilled technicians and analysts to operate, maintain, and upgrade the system. Both of these will rely on the availability of financial resources to capitalize and sustain operations. Technological, financial, and human resource issues should be considered under the infrastructure (system) priorities of *Healthiest Wisconsin 2010* in order to assure strong public health system capacity.

Significant Linkages to Wisconsin's 12 Essential Public Health Services

Monitor health status to identify community health problems: A communicable disease surveillance system, by definition, monitors the community and general population through a variety of both passive and active observation measures in order to detect occurring infectious disease outbreaks at the earliest possible moment.

Identify, investigate, control, and prevent health problems and environmental health hazards in the community: The purpose of a disease surveillance system is the early warning portion of an overall communicable disease control strategy and is intended as the set of trigger mechanisms which mobilize and direct the public health epidemiological and disease containment apparatus to the point at which a contagious disease was detected.

Promote community partnerships to identify and solve health problems: To be effective, a disease surveillance and response system must be an ongoing coordinated working partnership between private sector clinicians who serve as disease reporters and local and state public health agencies who serve as the investigatory and disease control responders to the reports. In major populationwide disease outbreak and bioterrorism situations, local private providers may also be called on to function beyond simply disease reporters and to serve as community care givers, or in other ways to help contain the spread of infection.

Connection to the Three Overarching Goals of Healthiest Wisconsin 2010

Protect and Promote Health for All: Disease epidemics and intentional bioterrorist acts pose a substantive body of anticipatable and preventable or controllable threats to the entire resident population of the state, municipal, and regional populations within the state.

Eliminate Health Disparities: Effective response to, and containment of, a major communicable disease event will require that all persons involved, regardless of income or insurance status, ethnic or cultural characteristics, or regional location, will have equal access to readily available and complete diagnostic and treatment services.

Transform Wisconsin's Public Health System: The communicable disease control sector of the public health system will need to be substantively changed and upgraded to respond to threats from emerging infectious diseases, including enhancements to the numbers and credentials of internal disease control staff, and the expansion of functional working relationships with external governmental and nongovernmental partner organizations.

Key Interventions and/or Strategies Planned:

Achievement of this objective will require organized efforts:

- To inform and engage laboratory and clinician reporting partners in this effort.
- To develop and implement the mechanisms and infrastructure necessary for an interactive statewide electronic communication system for disease reporting and communication.
- To maintain a current and cogent state and local legal base for disease reporting and follow up.

References:

American Society for Microbiology. (June 21, 1999). *Congressional Briefing Infectious Disease Threats: As We Enter the 21st Century What Can We Do?* Available online at: <http://www.asmsusa.org/pasrc/pdfs/eidbriefing.pdf>

Bean, N.H., & Martin, S.M. (2001). Implementing a Network for Electronic Surveillance Reporting from Public Health Reference Laboratories: An International Perspective. *Emerging Infectious Disease*, 7(5):773-779.

BioMed Central Public Health. (January, 2002). *Conceptual framework of public health surveillance and action and its application in health sector reform*. Available online at: <http://www.biomedcentral.com/1471-2458/2/2>.

Centers for Disease Control and Prevention. (2001). *Emerging Infectious Diseases*. Sept-Oct 2001 (prepublication copy). Available online at: <http://www.cdc.gov/ncidod/eid/vol7no5/bean.htm>

Centers for Disease Control and Prevention. (2001). Updated Guidelines for Evaluating Public Health Surveillance Systems. *Morbidity and Mortality Weekly Report (MMWR)*. 50(RR13);1-35. Available online at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5013a1.htm#top>.

Centers for Disease Control and Prevention. National Center for Infectious Diseases. *Surveillance Resources*. Available online at: <http://www.cdc.gov/ncidod/osr/index.htm>

Centers for Disease Control and Prevention. National Center for Infectious Diseases. (October, 1998). *Preventing Emerging Infectious Diseases: A Strategy for the 21st Century*. <http://www.cdc.gov/ncidod/emergplan/plan98.pdf>

Council of State and Territorial Epidemiologists. (January, 1998). *Epidemiological Capacity of State Health Agencies: A Guide for Assessment*. Available online at: <http://www.cste.org/Epi%20cap%20final%20report.pdf>.

Groww, P.A. (1998). Practice Guidelines for Infectious Diseases: A Rationale for a Work in Progress. *Clinical Infectious Diseases*. 26(5):1037-41. Available online at: http://www.journals.uchicago.edu/IDSA/guide/MY52_1037.pdf

Pezzino, G. (ed.). (April, 2001). *A Guide to the Implementation of the National Electronic Disease Surveillance System (NEDSS) in state public health agencies*. Council of State and Territorial Epidemiologists. Available online at: http://www.cste.org/NNDSSSurvey/Downloads/NEDSS_Book_Final.pdf

Public Health's Infrastructure-A Status Report. Prepared for The Appropriations Committee of the United States Senate by the Centers for Disease Control and Prevention. 2001. http://www.naccho.org/files/documents/cdc_report_to_congress_3-01.pdf.

U.S. Department of Health and Human Services. (May, 2001). *HHS Initiative Prepares for Possible Bioterrorism Threat*. [fact sheet]. Available online at: <http://www.hhs.gov/news/press/2001pres/01fsbioterrorism.html>

U.S. General Accounting Office. (February, 1999). *Emerging Infectious Diseases: Consensus on Needed Laboratory Capacity Could Strengthen Surveillance*. Available online at: <http://www.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=gao&docid=f:he99026.txt.pdf>

U.S. General Accounting Office. (September 2000). *West Nile Virus Outbreak: Lessons for Public Health Preparedness*. Available online at: <http://www.gao.gov/new.items/he00180.pdf>