# 22. Immunization and Infectious Diseases

## Goal

Prevent disease, disability, and death from infectious diseases, including vaccine-preventable diseases.

## Overview

The incidence and threat of bioterrorism during the first half of the decade have greatly impacted infectious disease control in Kentucky and abroad. In response to the smallpox threat of 2002-2003, the Department for Public Health has focused its attention on public health preparedness at the state and local levels, as well as improving disease surveillance and immunization service delivery. The development and expansion of regional Epidemiologic Rapid Response Teams is one of the benefits brought about by public health preparedness and response initiatives.

Another new development within the Department for Public Health is the development and implementation of an immunization registry. In 2006, the Cabinet for Health and Family Services will pilot test a statewide, population-based immunization registry. The registry is web-enabled and will eventually be made available to all public and private immunization providers. Use of the immunization registry will be a crucial addition to public health informatics, as it will promote the success of public health preparedness activities and enhance infectious disease outbreak investigations.

The purpose of public health is to assure conditions under which optimum quality of life may be realized for all people. The primary modalities are disease prevention, detection, and intervention; health protection; and health promotion. The state Tuberculosis (TB) Control Program seeks to accomplish this purpose through organized efforts that address the physical, mental and environmental health concerns of communities and populations at risk of disease. The primary program objective is to reduce Kentucky's TB rate of 3.5 per 100,000 people to 1 per 100,000 people by the year 2010.

Adult immunization has not received major federal or state funding support, but modest increases in coverage with influenza and pneumococcal vaccines have been made. Pandemic influenza planning has moved to the forefront of the public health agenda. With the emergence of Avian Influenza (H5N1) in Southeast Asia, planning efforts have increased in an attempt to contain the potential devastation caused by a pandemic. An indirect benefit from pandemic planning is the encouragement and recommendation for the eligible adult population to be vaccinated against influenza and pneumococcal diseases.

## Summary of Progress

Considerable progress has been made in infectious disease control throughout the first half of the decade. By mid-year 2005, the Louisville Metro Health Department's immunization tracking system evolved into a population-based immunization registry that is expected to be deployed statewide early in 2006. The immunization registry is sponsored and maintained by the Department for Public Health, Cabinet for Health and Family Services. The TB rate for Kentucky continues to decrease. The state TB rate for 2004 was at an historic low of 3.1 cases per 100,000 population, compared to 3.4 in 2003. There were 127 cases reported in 2004, compared to 138 cases in 2003. Kentucky again exceeded a state objective for 2004 of reducing the verified TB case rate to 3.5 cases per 100,000 population. *Haemophilus influenzae* type b (Hib) meningitis continues to surface sporadically in unvaccinated children. Pertussis outbreaks continue to occur in unvaccinated children, but occur mostly in children outside the ages for vaccination. With the licensing in 2005 of two new "combined tetanus, diphtheria and pertussis" (Tdap) vaccines for older children and adults, (one vaccine for 10-18 years of age and another for 11-64 years of age), a decrease in pertussis is predicted among those adolescents and adults for whom previously there was no available licensed vaccine. There has been a decline in the incidence rate of hepatitis A since 2000, with the exception of 2001 (an outbreak), decreasing from 63 cases in 2000 to 31 cases in 2004. With the introduction of a regulation requiring hepatitis B immunizations for entry and attendance in 6$^{th}$ grade, a decrease in the hepatitis B incidence rate is anticipated throughout the decade.

## Progress toward Achieving Each HK 2010 Objective

### 22.1. Reduce indigenous cases of vaccine-preventable disease.

**Data Source:** The Kentucky Reportable Disease System which is now referred to as KYEPHRS (Kentucky Electronic Public Health Record System).

| Number of Cases of Disease | 1998 (Baseline) | 2004 (Mid-Decade) | 2010 (Target) |
|---|---|---|---|
| **Congenital rubella syndrome** | **0** | **0** | **0** |
| **Diphtheria (people <35 years)** | **0** | **0** | **0** |
| ***Haemophilus influenzae* type b invasive disease (Includes unknown serotype)** | **7** | **0** | **0** |
| **Hepatitis B (people <18 years)** | **4** | **0** | **0** |
| **Measles** | **0** | **0** | **0** |
| **Mumps** | **1** | **0** | **0** |
| **Pertussis (children <7 years)** | **50** | **16** | **46** |
| **Polio (wild-type virus)** | **0** | **0** | **0** |
| **Rubella** | **0** | **0** | **0** |
| **Tetanus (people <35 years)** | **0** | **1** | **0** |
| **Varicella** | **TBD** | **TBD** | **TBD** |

**HK 2010 Target:** See Chart

**Mid-Decade Status:** See Chart

**Data Needs:** Data on varicella are needed. The Division of Epidemiology and Health Planning is working toward making varicella a reportable disease. However, a change in reporting requirements is needed to do so.

**Strategies to Achieve Objective:**

- Continue to enforce all existing laws and regulations concerning immunization and reportable diseases
- Investigate (promptly) suspected cases of vaccine-preventable diseases, vaccinate or give prophylaxis to contacts, and restrict activities of infected persons to eliminate exposures
- Implement the immunization registry which will extend the immunization information system to all immunization providers statewide
- Continue to work towards legislation that would make varicella a reportable disease

## 22.2. Reduce hepatitis A cases to an incidence of no more than 1.0 case per 100,000.

**Data Source:** KYEPHRS

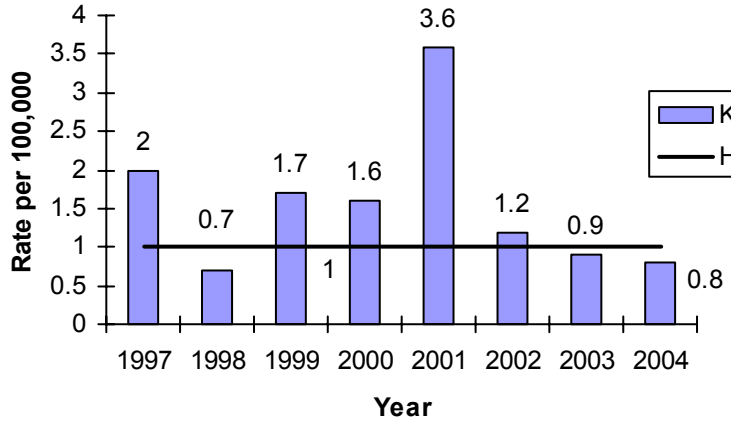


**Figure 22.1** Hepatitis A Incidence Rate per 100,000, Kentucky, 1997 - 2004 (Source: KYEPHRS)

**Baseline:** 2 per 100,000 in 1997

**HK 2010 Target:** 1 per 100,000

**Mid-Decade Status:** 0.8 per 100,000 in 2004

**Strategies to Achieve Objective:**

- Promptly investigate suspected cases and administer immune globulin to appropriate contacts
- Promote hepatitis A vaccination for illegal drug users, men who have sex with men, persons traveling to hepatitis A virus (HAV) endemic counties, persons with occupational risk (as defined by the Centers for Disease Control and Prevention), and persons with chronic liver disease
- Use hepatitis A vaccine for outbreak control in cases of outbreaks of types for which vaccine has been shown effective

### 22.3. Reduce to no more than 6 chronic hepatitis B virus infections in infants (perinatal infections).

**Data Sources:** KYEPHRS, Perinatal Hepatitis B Tracking System.

**Baseline:** 48 in 2000

**HK 2010 Target:** 6

**Mid-Decade Status:** 45 in 2004

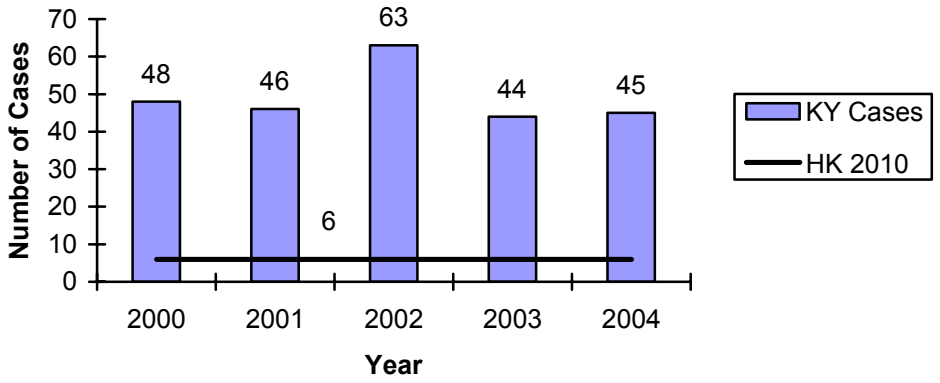


**Figure 22.2** Perinatal Hepatitis B Cases, Kentucky, 2000-2004 (Source: KYEPHRS)

**Strategies to Achieve Objective:**

- Continue legal requirements to screen pregnant women and report those infected
- Continue perinatal tracking system, including reminders for appropriate immunization and testing of infants of infected mothers
- Continue promotion of adolescent hepatitis B immunization for those not immunized earlier in life

**22.4. Reduce hepatitis B rates to zero cases per 100,000 in persons less than 18 years of age (except perinatal infections). (Baseline: 0.4 cases per 100,000 population in 1998)**

**Data Source:** KYEPHRS

**Baseline:** 0.4 per 100,000 in 1998

**HK 2010 Target:** 0 per 100,000

**Mid-Decade Status:** .03 per 100,000 in 2004

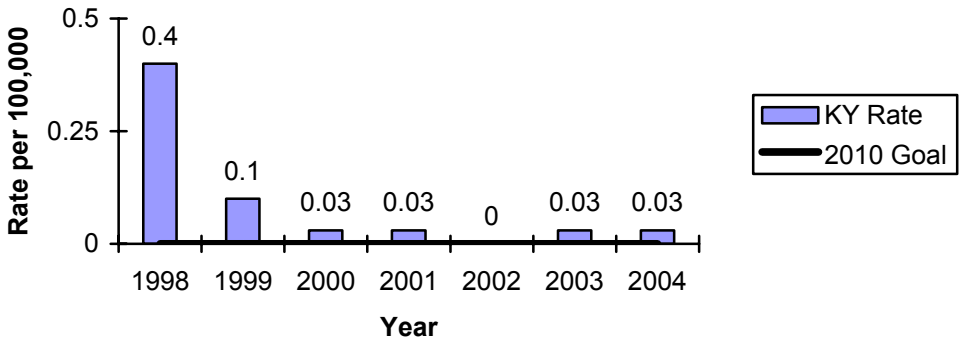


**Figure 22.3** Hepatitis B Incidence Rate per 100,000 in Persons Less than 18 Years of Age, Kentucky, 1998-2004 (Source: KYEPHRS)

**Strategies to Achieve Objective:**

- Continue legal requirement for hepatitis B immunizations for children born October 1, 1992, or later to receive hepatitis B vaccination
- Continue promotion of adolescent hepatitis B immunization for those not immunized earlier in life
- Conduct epidemiologic investigation of suspected clusters of cases and/or infections

**22.5. Reduce hepatitis B cases per 100,000 in the following age groups:**

| Age Group | Baseline 1998 | 2010 Target | 2004 Mid-Decade |
|---|---|---|---|
| 25-39 years | 3.1 | 3.0 | 0.9 |
| ≥40 years | 6.0 | 1.0 | 0.9 |

**Data Source:** KYEPHRS

**Baseline:** 25-39 years, 3.1 per 100,000in 1998
≥40 years, 6.0 per 100,000 in 1998

**HK 2010 Target:** 25-39 years, 3 per 100,000

≥40 years, 1.0 per 100,000

**Mid-Decade Status:** 25-39 years, 0.9 per 100,000 in 2004
≥40 years, 0.9 per 100,000 in 2004

**Strategies to Achieve Objective:**

- Promotion of immunization of selected high-risk groups (as determined by the Centers for Disease Control and Prevention)
- Epidemiologic investigations of suspected clusters of cases and/or infections

**22.6. Limit newly acquired hepatitis C cases to an incidence of no more than 1 case for 100,000 people. (DELETED)**

**Reason for Deletion:** Only acute hepatitis C cases are included in the reporting system

**22.7. Reduce tuberculosis to an incidence of no more than 1.0 per 100,000.**

**Data Source:** Tuberculosis Information Management System (TIMS),- a national TB Surveillance System

**Baseline:** 5.3 cases per 100,000 in 1999

**HK 2010 Target:** 1 case per 100,000

**Mid-Decade Status:** 3.1 cases per 100,000 in 2004

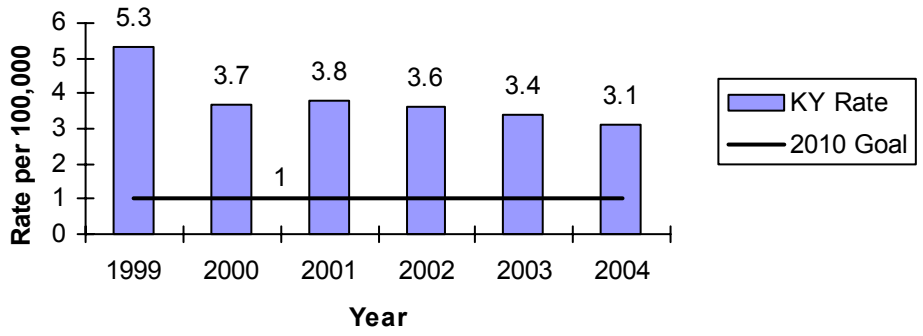


**Figure 22.4** Tuberculosis Incidence Rate per 100,000, Kentucky, 1999 – 2004 (Source: TIMS)

**Strategies to Achieve Objective:**

- Monitor and emphasize appropriateness of anti-tuberculosis drug regimens
- Maximize use of directly observed therapy
- Monitor and emphasize completion of preventive therapy and maximize use of directly observed preventive therapy
- Conduct prompt and thorough epidemiologic investigation of outbreaks
- Focus screening on groups of high-risk persons

**22.8. Limit the hospitalizations due to invasive pneumococcal infections to 49 per 100,000 in persons less than 5 years of age and to 53 per 100,000 in persons aged 65 and older.**

**22.8R. Limit the hospitalizations due to invasive pneumococcal infections to 9.8 per 100,000 in persons less than 5 years of age and to 81.7 per 100,000 in persons aged 65 and older.**

**Reason for Revision:** No baseline was stated in the original HK 2010 document. This revision includes a revised baseline that is based on an improvement to the 2000 baseline.

**Data Source:** Hospital Inpatient Discharge Database

**Baseline:** <5, 15.4 per 100,000 in 2000
65+, 93.9 per 100,000 in 2000

**HK 2010 Target:** <5, 9.8 per 100,000
65+, 81.7 per 100,000

**Mid-Decade Status:** <5, 10.8 per 100,000 in 2004
65+, 82.7 per 100,000 in 2004

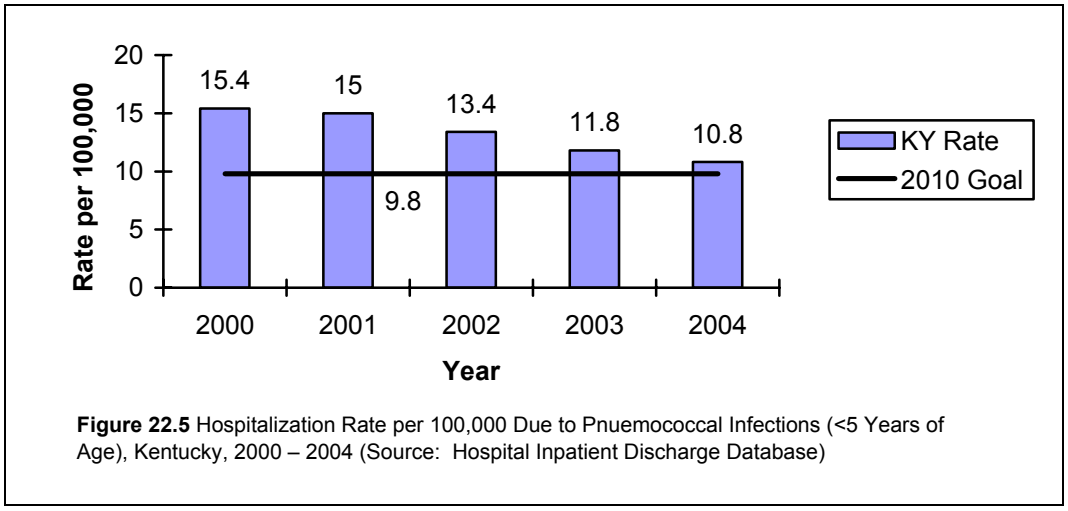


**Figure 22.5** Hospitalization Rate per 100,000 Due to Pnuemococcal Infections (<5 Years of Age), Kentucky, 2000 – 2004 (Source: Hospital Inpatient Discharge Database)

**Strategies to Achieve Objective:**

- Promote acceptance among high-risk groups of current pneumococcal vaccine
- Continue to promote and support universal use, vaccination with a safe and effective pneumococcal conjugate vaccine in infancy, in accordance with the ACIP recommended childhood vaccine schedule

**22.9. Limit hospitalizations for peptic ulcer disease to 57 per 100,000 population.**

**22.9R. Limit hospitalizations for peptic ulcer disease to 4 per 100,000 population.**

**Reason for Revision:** No baseline was stated in the original HK 2010 document. This revision includes a revised baseline that is based on an improvement to the 2000 baseline.

**Data Source:** Hospital Inpatient Discharge Database

**Baseline:** 5 per 100,000 in 2000

**2010 Target:** 4 per 100,000

**Mid-Decade Status:** 5.1 per 100,000 in 2004

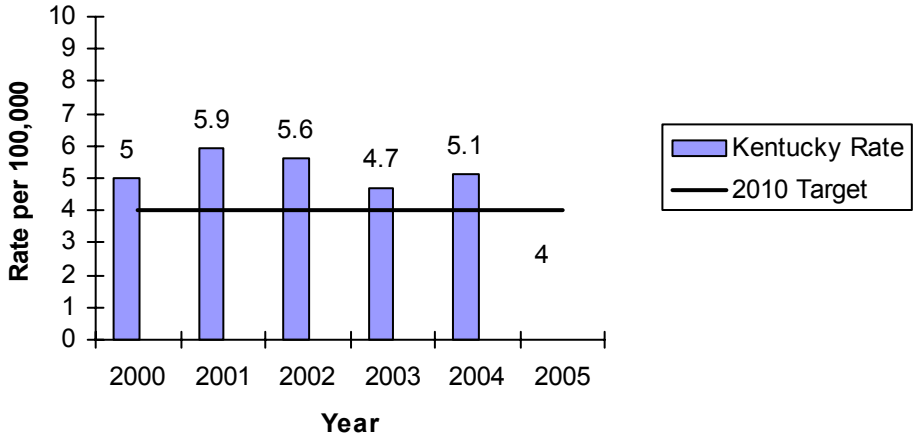


**Figure 22.6** Hospitalization Rate per 100,000 for Peptic Ulcer Disease, Kentucky, 2000-2004 (Source: Hospital Inpatient Discharge Database)

**Strategies to Achieve Objective:**

- Continue to educate health care providers and consumers concerning the possibility of a cure for ulcers using appropriate antibiotics

**22.10. Achieve immunization coverage of at least 90 percent among children 19-35 months of age for the following:**

- **4 DTaP, 3 polio, 1 MMR, 3 Hib, 3 Hepatitis B**
- **1 dose of varicella vaccine.**
- **Also known as 4:3:1:3:3:1**

**Data Source:** National Immunization Survey.

| 4:3:1:3:3:1 Coverage Rate | Baseline2000 | 2010 Target | Mid-Decade Status 2004 |
|---|---|---|---|
| U.S. National | 72.8±0.9% | 90% | 74.5±.09% |
| Kentucky | 77.0±5.2% | 90% | 81.2± 5.9% |

**Strategies to Achieve Objective:**

- Continue enforcing all existing laws and regulations concerning immunization, including the varicella regulation introduced in 2002
- Extend the immunization information system to all immunization providers statewide and promote its use for reminder and recall by way of a population based immunization registry

**22.11. Achieve immunization coverage of 95 percent of children in licensed day care facilities and children in kindergarten for the following immunization-preventable diseases:**

**Data Source:** Annual School Survey completed by the Immunization Program

| Type of Immunization | Licensed Day Care Facilities<br><br>Baseline and Mid-Decade Status (2004) | Kindergarten<br><br>Baseline and Mid-Decade Status (2004) | 2010 Target |
|---|---|---|---|
| **Diphtheria-tetanus-pertussis (4 doses, at least 1 on or after age 4)** | **91%** | **96.3%** | **95%** |
| **Measles, mumps, rubella (2 doses for kindergarten, 1 dose for children over 16 months of age in day care)** | **93.9%** | **95.6%** | **95%** |
| ***Haemophilus influenzae* type b (if under 5 years of age)** | **95.7%** | **96.3%** | **95%** |
| **Hepatitis B (3 doses)** | **94.6%** | **95.8%** | **95%** |
| **Varicella** | **90.1%** | **84.5%** | **95%** |
| **Polio (3 doses)** | **92.8%** | **96.3%** | **95%** |

**HK 2010 2010 Target:** See chart

**Baseline and Mid-Decade Status:** See chart

**Strategies to Achieve Objective:**

- Same as for Objective 22.10

**22.12. Increase to the following targets the rate of immunization coverage among the following adult groups.**

**Data Sources:** Behavioral Risk Factor Surveillance System (BRFSS) for non-institutionalized adults; special surveys for long-term care and nursing homes.

| Group and Vaccine | Baseline | 2010 Target | Mid-Decade Status |
|---|---|---|---|
| Non-institutionalized adults 65 years of age or older | | | |
| Influenza vaccine | 60.9 (2001) | 75% | 64.9% (2004) |
| Pneumococcal vaccine | 55.1 (2001) | 70% | 57.7% (2004) |
| Institutionalized adults in long-term care facilities or nursing homes | | | |
| Influenza vaccine | N/A | 90% | 84.1% (2004) |
| Pneumococcal vaccine | N/A | 90% | 74.6% (2004) |

**Baseline:** See chart

**2010 Target:** See chart

**Mid-Decade Status:** See chart

**Strategies to Achieve Objective:**

- Educate health care providers and consumers concerning adult immunization
- If voluntary implementation in long-term care facilities and nursing homes does not appear likely to achieve the target, consider introduction of a regulation.

**22.13. Maintain to at least 75 percent, the proportion of all tuberculosis patients who complete curative therapy within 12 months.**

**Data Source:** TIMS

**Baseline:** 92.7 percent completed therapy in 1999

**HK 2010 Target:** 75 percent will complete therapy

**Mid-Decade Status:** 93.8 percent completed therapy in 2003

**Strategies to Achieve Objective:**

- Monitor and emphasize appropriateness of anti-tuberculosis drug regimens
- Maximize use of directly observed therapy

**22.14. Increase to at least 75 percent the proportion of contacts, including other high-risk persons with tuberculosis infection (as defined by the Centers for Disease Control and Prevention), who complete courses of preventive therapy.**

**Data Source:** TIMS

**Baseline:** 58.2 percent completed therapy in 2000

**HK 2010 Target:** 75 percent complete therapy

**Mid-Decade Status:** 63.5 percent completed therapy in 2003

**Strategies to Achieve Objective:**

- Monitor and emphasize completion of preventive therapy
- Maximize use of directly observed preventive therapy

**22.15.** (Developmental). **Decrease to 50 the number of inappropriate rabies post-exposure prophylaxis, as defined by the current Advisory Committee on Immunization Practices (ACIP) guidelines.**

**Data Source:** KYEPHRS

**Baseline:** 111 in 2000

**HK 2010 Target:** 50

**Mid-Decade Status:** 75 in 2004

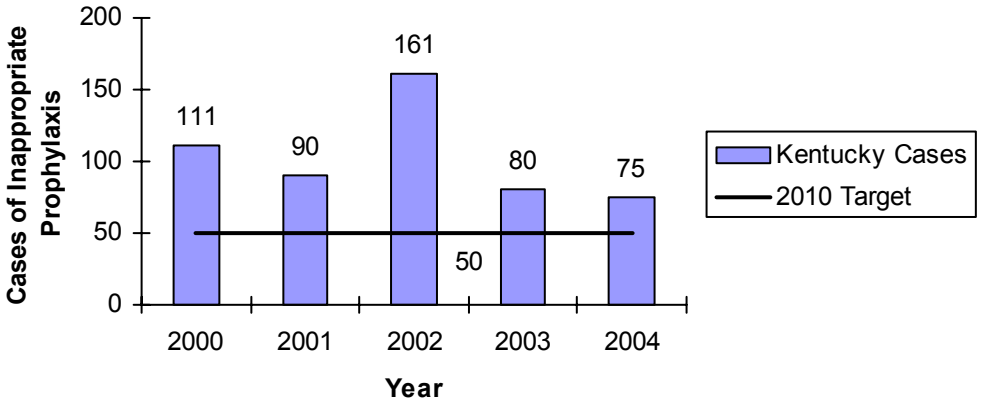


**Figure 22.7** Inappropriate Rabies Post-Exposure Prophylaxis, Kentucky, 2000-2004 (Source: KYEPHRS)

**Data Needs:** More consistent reporting and follow-up of cases

**Strategies to Achieve Objective:**

- Education of health care providers on rabies prophylaxis

**22.16.** (Developmental) **Increase to 50 percent the number of immunization providers who have systematically measured the immunization coverage levels in their practice population.**

**Data Source:** KYEPHRS

**Baseline:** Data are not currently available

**Target:** 50 percent

**Mid-Decade Status:** Data are not currently available

**Data Needs:** Currently, there are no data collected on the number of health care facilities that provide immunization, but with the implementation of the population based immunization registry that will be part of KYEPHRS, it will be possible to complete coverage level assessments on the providers who choose to participate in the registry.

**Strategies to Achieve Objective:**

- Continue to require at least annual coverage assessments of public immunization providers and bi-annual coverage assessments of VFC participating private providers

- Encourage private providers to perform assessments and offer assistance in the process
- Encourage participation in the immunization registry when available and/or consider legislation requiring participation

**22.17.** (Developmental) **Increase to 90 percent the number of children enrolled in a fully functional population-based immunization registry (birth through age 5).**

**Data Source:** Kentucky Immunization Program – Registry Coordinator

**Mid-Decade Status:** In the 2006, the Cabinet for Health and Family Services will pilot test a population-based immunization registry. The registry is web-enabled and will be made available to all public and private immunization providers statewide in the future. Professional education will be provided to promote use of the registry and to emphasize the need for children under six years old to be appropriately vaccinated and documented in the registry. The registry will possess full functionality to improve vaccine safety surveillance, to track routine vaccination coverage levels for adolescents, and to track the proportion of adults who are vaccinated annually against influenza and pneumococcal disease. The system architecture is designed to exchange information with other healthcare delivery systems in order to support essential public health functions in the Commonwealth of Kentucky and other states.

**Strategies to Achieve Objective:**

- Extend the availability of the immunization information system to all immunization providers statewide
- Emphasize benefits of the system to providers, e.g., easily available information on prior immunizations and automatic printing of immunization certificates

**22.18. Maintain at zero the number of cases of vaccine-associated paralytic polio.**

**Data Source:** KYEPHRS

**Baseline:** 0 in 2000

**HK 2010 Target:** 0

**Mid-Decade Status:** 0 (There have been no reported cases of vaccine-associated paralytic polio in Kentucky during this decade.)

**Strategies to Achieve Objective:**

- Oral Polio vaccine (OPV) is no longer available in the United States; only IPV (Inactivated Polio Vaccine) is available.
- Educate providers to be aware that other countries continue to provide OPV, and watch for signs of vaccine-associated paralytic polio in immigrants and report it as such

**22.19. Reduce to 48 hours the time it takes for a laboratory to confirm and report 75 percent of new tuberculosis cases who have not started drugs at the time of specimen collection.**

**22.19R. Increase to 75 percent the proportion of lab specimens on new tuberculosis cases that are confirmed in 48 hours or less.**

**Reason for Revision:** The objective was revised to more accurately reflect the laboratory data collected and reported on tuberculosis cases.

**Data Source:** Laboratory Standard Operating Procedure Manual

**Baseline:** 50 percent in 48 hours in the year 2000
In 2000 the TB smear tests were being read in the Virology section. Reading of TB smear tests was transferred to the TB laboratory in January, 2003.

**HK 2010 Target:** 75 percent in 48 hours

**Mid-Decade Status:** 72% in 48 hours in the year 2005.
All smears are read and reported within 24 hours of specimen receipt; however, not all smears are positive. Those smears that are not positive require culture confirmation before treatment can be started. In accordance with the Mycobacteriology Laboratory Standard Operating Procedure Manual, all sputum specimens submitted for tuberculosis confirmation are processed using the Fluorchrome/acid-fast direct smear test and results are confirmed and reported to the submitting facility within 24 hours of receipt of the specimen.

**Strategies to Achieve Objective:**

- Routine use by state public health laboratory of best available and affordable state-of-the-art tests
- Encourage other laboratories either to use such tests or to use the state public health laboratory

## Terminology

**Emerging infectious diseases:** Diseases of infectious origin whose incidence in humans has increased within the past two decades or threatens to increase in the near future. Recognition of an emerging disease can occur because the disease is present in the population for the first time, the disease has been detected for the first time, or links between an infectious agent and a chronic disease or syndrome have been identified only recently, or the disease or infectious agent is increasing.

**Influenza high-risk populations:** (1) Persons older than 65 years; and (2) persons with chronic underlying disorders of the cardiovascular, pulmonary, or renal systems, as well as those with metabolic diseases (including diabetes mellitus), severe anemia, and compromised immune function.

**Inappropriate rabies post-exposure prophylaxis:** Any actions that are contrary to current recommendations described by the Centers for Disease Control and Prevention (CDC) (1991. Rabies prevention-United States, 1991. *MMWR* 40: RR-3, pp.1-19).

## References


- Recommendations of the Advisory Committee on Immunization Practices (ACIP) (issued on various dates by the Centers for Disease Control and Prevention).
- 2003 Red Book: Report of the Committee on Infectious Diseases, 26th edition, American Academy of Pediatrics.


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# 22. Immunizations and Infectious Diseases – Summary Tables

| Summary of Objectives for Immunizations and Infectious Diseases | Baseline | HK 2010 Target | Mid-Decade Status | Progress | Data Source |
|---|---|---|---|---|---|
| 22.1. Reduce indigenous cases of vaccine-preventable disease. | | | | | KYEPHRS |
| Congenital rubella syndrome | 0 (2000) | 0 | 0 (2004) | Target Achieved | |
| Diphtheria (people <35 years) | 0 | 0 | 0 | Target Achieved | |
| *Haemophilus influenzae* type b invasive disease (Includes unknown serotype) | 7 | 0 | 0 | Target Achieved | |
| Hepatitis B (people <18 years) | 4 | 0 | 0 | Target Achieved | |
| Measles | 0 | 0 | 0 | Target Achieved | |
| Mumps | 1 | 0 | 0 | Target Achieved | |
| Pertussis (children <7 years) | 50 | ≤46 | 16 | Yes | |
| Polio (wild-type virus) | 0 | 0 | 0 | Target Achieved | |
| Rubella | 0 | 0 | 0 | Target Achieved | |
| Tetanus (people <35 years) | 0 | 1 | 0 | Target Achieved | |
| Varicella | TBD | TBD | TBD | TBD | |
| 22.2. Reduce hepatitis A cases to an incidence of no more than 1.0 case per 100,000. | 2/ 100,000 (1997) | ≤1/ 100,000 | 0.8/ 100,000 (2004) | Target Achieved | KYEPHRS |
| 22.3. Reduce to no more than 6 chronic hepatitis B virus infections in infants (perinatal infections). | 48 (2000) | ≤6 | 45 (2004) | Yes | KYEPHRS |
| 22.4. Reduce the hepatitis B rate to zero cases per 100,000 in persons less than 18 years of age (except perinatal infections). | 0.4/ 100,000 (1998) | 0 | 0 (2004) | Yes | KYEPHRS |
| 22.5. Reduce hepatitis B cases per 100,000 in the following age groups: | | | | | |
| 25-39 years | 3.1/ 100,000 (1998) | ≤3/ 100,000 | 0.9/ 100,000 (2004) | Target Achieved | KYEPHRS |
| >40 years | 6/ 100,000 (1998) | ≤1/ 100,000 | 0.9/ 100,000 (2004) | Target Achieved | KYEPHRS |
| 22.6. (DELETED) | | | | | |
| 22.7. Reduce tuberculosis to an incidence of no more than 1.0 per 100,000. | 5.3/ 100,000 (1998) | ≤1/ 100,000 | 3.1/ 100,000 (2004) | Yes | TIMS |

| Summary of Objectives for Immunizations and Infectious Diseases | Baseline | HK 2010 Target | Mid-Decade Status | Progress | Data Source |
|---|---|---|---|---|---|
| 22.8. Limit the hospitalizations due to invasive pneumococcal infections to 9.8 per 100,000 persons less than 5 years of age and to 81.7 per 100,000 persons aged 65 and older. | | | | | |
| <5 | 15.4/ 100,000 (2000) | ≤9.8/ 100,000 | 10.8/ 100,000 (2004) | Yes | HOSP |
| 65+ | 93.9/ 100,000 (2000) | ≤81.7/ 100,000 | 82.7/ 100,000 (2004) | Yes | HOSP |
| 22.9. Limit hospitalizations for peptic ulcer disease to 4.0 per 100,000 population. | 5/ 100,000 (2000) | ≤4.0/ 100,000 | 5.1/ 100,000 (2004) | No | HOSP |
| 22.10. Achieve immunization coverage of at least 90 percent among children 19-35 months of age for the following:<br>-4 DTaP, 3 polio, 1 MMR, 3 Hib, 3 hepatitis B<br>-1 dose of varicella vaccine<br>Also known as 4:3:1:3:3:1. | 77.0% ±5.2% (2000) | ≥90% | 81.2% ±5.9% (2004) | Yes | National Immuniza-tion Survey |
| 22.11. Achieve immunization coverage of 95 percent for children in licensed day care facilities and children in kindergarten for the following: | (2004) | | (2004) | | Annual School Survey |
| **Kindergarten**<br>Diphtheria-tetanus-pertussis (4 doses, at least 1 on or after age 4) | 96.3% | ≥95% | 96.3% | Target Achieved | |
| Measles, mumps, rubella (2 doses for kindergarten, 1 dose for children over 16 months of age in day care) | 95.6% | ≥95% | 95.6% | Target Achieved | |
| *Haemophilus influenzae* type b (if under 5 years of age) | 96.3% | ≥95% | 96.3% | Target Achieved | |
| Hepatitis B (3 doses) | 95.8% | ≥95% | 95.8% | Target Achieved | |
| Varicella | 84.5% | ≥95% | 84.5% | No | |
| Polio (3 doses) | 96.3% | ≥95% | 96.3% | Target Achieved | |
| **Licensed Day Care Facilities**<br>Diphtheria-tetanus-pertussis (4 doses, at least 1 on or after age 4) | 91% | ≥95% | 91% | No | |
| Measles, mumps, rubella (2 doses for kindergarten, 1 dose for children over 16 months of age in day care) | 93.9% | ≥95% | 93.9% | No | |

| Summary of Objectives for Immunizations and Infectious Diseases | Baseline | HK 2010 Target | Mid-Decade Status | Progress | Data Source |
|---|---|---|---|---|---|
| *Haemophilus influenzae* type b (if under 5 years of age) | 95.7% | ≥95% | 95.7% | Target Achieved | |
| Hepatitis B (3 doses) | 94.6% | ≥95% | 94.6% | No | |
| Varicella | 90.1% | ≥95% | 90.1% | No | |
| Polio (3 doses) | 92.8% | ≥95% | 92.8% | No | |
| 22.12. Increase to the following targets the rate of immunization coverage among the following adult groups. | | | | | |
| **Non-institutionalized adults 65 years of age or older** | | | | | BRFSS |
| Influenza vaccine | 60.9% (2001) | ≥75% | 64.9% (2004) | Yes | |
| Pneumococcal vaccine | 55.1% (2001) | ≥70% | 57.7% (2004) | Yes | |
| **Institutionalized adults in long-term care or nursing homes** | | | | | Special surveys for long-term care |
| Influenza vaccine | 84.1% (2004) | ≥90% | 84.1% (2004) | N/A | |
| Pneumococcal vaccine | 74.6% (2004) | ≥90% | 74.6% (2004) | N/A | |
| 22.13. Maintain at least 75 percent the proportion of all tuberculosis patients who complete curative therapy within 12 months. | 92.7% (1999) | ≥75% | 93.8% (2003) | Target Achieved | TIMS |
| 22.14. Increase to at least 75 percent the proportion of contacts, including other high-risk persons with tuberculosis infection (as defined by the Centers for Disease Control and Prevention), who complete courses of preventive therapy. | 58.2% (2000) | ≥75% | 63.5% (2003) | Yes | TIMS |
| 22.15. (Developmental) Decrease to 50 the number of inappropriate rabies postexposure prophylaxis, as defined by current Advisory Committee on Immunization Practices (ACIP) guidelines. | 111 (2000) | ≤50 | 75 (2004) | Yes | KYEPHRS. |
| 22.16. (Developmental) Increase to 50 percent the number of immunization providers who have systematically measured the | Data not available | ≥50% | Data not available | TBD | KYEPHRS |

| Summary of Objectives for Immunizations and Infectious Diseases | Baseline | HK 2010 Target | Mid-Decade Status | Progress | Data Source |
|---|---|---|---|---|---|
| immunization coverage levels in their practice population. | | | | | |
| 22.17. (Developmental) Increase to 90 percent the number of children enrolled in a fully functional population-based immunization registry (birth through age 5). | No registry available | ≥90% | Pilot to begin in 2006 | No | |
| 22.18. Reduce to zero the number of cases of vaccine-associated paralytic polio. | 0 | 0 | 0 | Target Achieved | KYEPHRS |
| 22.19R. Increase to 75 percent the proportion of lab specimens on new tuberculosis cases that are confirmed in 48 hours or less. | 50% in 48 hours (2000) | 75% in 48 hours | 72% in 48 hours (2005) | Yes | Laboratory Standard Operating Procedure Manual |

R = Revised objective
N/A = Only baseline data are available. Not able to determine progress at this time.
TBD = To be determined. No reliable data currently exist.