

# 3

## Immunization Information Systems

### Overview

The program goal is to increase to 95% the proportion of children under age 6 enrolled in a fully operational immunization registry or immunization information system (IIS) by the year 2010. In 1993, the Centers for Disease Control (CDC) Immunization Services Division (ISD) began awarding planning grants to develop IIS in every state. Since then, federal funds have been awarded to promote and support the development of IISs throughout the U.S. as a key resource for immunization programs and their stakeholders. IISs are tools that enhance the capacity for providing the information needed to improve and sustain high levels of coverage.

IIS are population-based computerized information systems that have been implemented at the state or local levels and are an important tool for tracking immunization records of an ever-increasing mobile population. IISs consolidate vaccination records for persons with multiple providers, provide vaccination needs assessments, generate reminder/recall notices, produce official vaccination records, and provide practice- and population-based vaccination coverage assessments.

### References

*Some key documents are listed below and all are available on the CDC/NCIRD IIS website at: [www.cdc.gov/vaccines/programs/iis/default.htm](http://www.cdc.gov/vaccines/programs/iis/default.htm). A complete bibliography of peer-reviewed publications maybe seen at: <http://www.cdc.gov/vaccines/programs/iis/pubs/default.htm>.*

- Development of Community- and State-Based Immunization Registries (NVAC)
- Community Immunization Registries Manual, Chapter II: Confidentiality (CDC/AKC)
- Implementation Guide for Immunization Data Transactions using Version 2.3.1 of the Health Level Seven (HL7) Standard Protocol (CDC) (Implementation Guide Version 2.1, September 2002)
- Recommended Core Data Set for State Immunization Information Systems (CDC)
- Technical Development Guidance (revised Programmers Evaluation Guide) (CDC)
- Progress in Development of Immunization Registries - United States 2005 (MMWR December 15, 2006)
- Registry Standards of Excellence in Support of an Immunization Program (American Immunization Registry Association's Programmatic Registry Operations Workgroup, October 15, 2002)
- Vaccines for Children Program Operations Guide:  
<http://www.cdc.gov/vaccines/programs/vfc/operations-guide.htm>
- All other chapters of 2008-2012 Immunization Program Operations Manual (IPOM)

## Program Requirements

### 3.1 Strive to achieve the program goal of enrolling at least 95 percent of children under six years of age in a fully operational IIS.

#### Required activities

3.1a. Annually increase the percentage of children participating in the IIS using strategies such as linking to other public health programs and health information systems (e.g. WIC, lead, newborn metabolic screening, newborn hearing as well as daycare centers, Head Start programs and elementary schools) to achieve the program goal of enrolling at least 95 percent of children under six years of age in a fully operational IIS.

*Performance measure:* Percentage (increase) of children <6 years of age in the IIS catchment area with 2 or more immunizations recorded in the IIS. Progress made will be measured using the Immunization Information System Annual Report and other methods.

*Target:* Progress toward 95% set by individual programs (CDC/NCIRD national objective)

#### Recommended activities

3.1b. If applicable, develop a plan for increasing IIS participation of adolescents 11 – 18 years of age using strategies such as linking with other public health programs and health information systems (e.g. Medicaid, STD clinics, as well as schools, military, juvenile facilities, health plans, electronic health records and the Indian Health Service).

*Performance measure:* Percentage (increase) of adolescents 11 – 18 years of age in the IIS catchment area with 2 or more immunizations recorded in the IIS. Progress made will be measured using the Immunization Information System Annual Report and other methods.

*Target:* Progress toward 75% set by individual programs

3.1c. If applicable, develop a plan for increasing IIS participation of adults >18 years of age using strategies such as linking with other public health programs and other health information systems (e.g. health plans, electronic health records, hospitals, and nursing homes and long term care facilities).

*Performance Measure:* Percentage (increase) of adults >18 years of age in the IIS catchment area who are participating in the IIS. Progress made will be measured in the Immunization Information System Annual Report.

*Target:* Progress toward 50% set by individual programs.

**3.2 Produce an annual detailed report that documents how each immunization program component demonstrates IIS data use to support immunization program activities. At a minimum, the report should describe the use of IIS data to identify areas where immunization coverage is low, assess immunization practices and coverage status, document IIS vaccination histories used to assist with the investigation of vaccine-preventable disease, describe IIS data caveats such as participation rate limitations, document number of children one dose away from being up to date, use of vaccine inventory and control data, and number of AFIX assessments done with IIS data.**

Required activities

3.2a. Increase the percentage of public and private provider sites participating in the IIS. Collaborate with provider organizations and other stakeholders in the IIS catchment area to assist with provider recruitment, planning, and implementation.

*Performance Measure:* Percentage of public provider sites that routinely submit immunization events to the IIS on children <6 years of age

*Target:* Progress toward 100% set by individual programs

*Performance Measure:* Number and percentage of private provider sites submitting immunization events to the IIS on children <6 years of age

*Target:* Progress toward 95% set by individual programs

3.2a.i. Evaluate IIS provider participation progress by measuring (1) provider recruiting and training efforts at the regional, health district, or county level, (2) frequency of provider submissions of data, (3) completeness of provider submissions, and (4) provider use of specific IIS features.

*Performance Measure:* Percentage of immunization records received and processed by the IIS within 30 days, percentage of provider patients with data in the IIS since enrollment, percentage of provider immunization histories in the IIS that are complete

*Target:* 90% of records received and processed within 30 days, 80% of provider patients in the IIS, and 90% immunization record completeness in the IIS.

3.2b. Use IIS to assess immunization coverage by a) provider practice, 2) geographic area (e.g., counties), 3) series up-to-date status, and 4) pockets of need using tools such as Geographic Information System (GIS).

*Performance Measure:* Percentage (increase) of immunization coverage for children 19-35 months of age and children <6 years of age in the IIS catchment area who are participating in the IIS. Progress made will be measured using the Immunization Information System Annual Report and other methods.

*Target:* Progress toward 90% for children 19-35 months of age and 95% for children < 6 years of age set by individual programs.

3.2c. Use IIS to generate grantee management reports such as:

- IIS coverage reports (e.g. coverage by series, up-to-date status, doses missing, pockets of need, Hepatitis B birth dose analysis)
- Immunization/IIS program operations (e.g. vaccine inventory, vital records upload, linkage lookups, doses administered, immunization rate analysis, AFIX assessments, MOGE)
- Provider participation (e.g. percent of providers reporting to IIS, provider list, number of IIS lookups, number of facilities requesting immunization records through IIS, VFC eligibility).

*Performance Measure:* A methodology to use IIS to assess immunization coverage levels is developed and incorporated into the VFC/AFIX site visit and reflected in the written AFIX/VFC Standards Policy (IPOM Ch. 4)

*Target:* 100% of grantees use IIS to assess immunization coverage levels for AFIX/VFC assessments

*Performance Measure:* IIS use is incorporated into case investigation guidelines when documenting the vaccination status of cases and controls and reflected in the written case investigation guidelines (IPOM Ch. 9)

*Target:* 100% of grantees use IIS in case investigations to document vaccination status of cases and controls

*Performance Measure:* IIS data used for purposes such as doses administered reporting, vaccine recall, and VFC eligibility (IISAR 75b- 2006). Progress made will be measured using the Immunization Information System Annual Report and other methods.

*Target:* 100% of grantees use IIS data for doses administered reporting, vaccine recall, and VFC eligibility

**3.3 Conduct an evaluation of the IIS operations and subject data to an independent objective analysis (e.g., review of IIS operations and data by third party assessments to certify readiness, evaluate selected measures of data quality, or use of the data in a regional or national analysis.)**

Required activities

3.3a. Participate in CDC national IIS data queries such as new vaccine uptake, data quality measures, etc.

Recommended activities

3.3b. Conduct an evaluation of IIS use in a pandemic influenza exercise or a public health emergency such as Hurricane Katrina.

### **3.4 Update and implement a business plan for the IIS.**

#### Required activities

- 3.4a. Develop an ISD-approved two-year business plan to ensure reaching the IIS program goal. The plan should include: a vision statement; goals; objectives; a needs assessment; a management and staffing plan; an implementation plan; timelines with action steps and key milestones as well as assigned responsibilities; a project monitoring and evaluation plan; and a two-year budget. The plan must also specifically address: 1) Achievement and maintenance of the twelve National Vaccine Advisory Committee (NVAC)-approved Functional Standards for immunization registries; 2) A continued increase in the proportion of children from birth through five years of age enrolled in the registry and with two or more immunizations recorded in the registry; and 3) A continued increase in the proportion of active immunization provider sites using registries (i.e., public and private provider sites both enrolled and submitting immunization data). The plan should be updated at least annually.
- 3.4b. A previously submitted and approved business plan must be referenced and updated. The updated business plan must reference the need for the project or activity; a description of the project or intervention; a management and evaluation plan; a timeline with action steps and assigned responsibilities; the benefit to the IIS; a budget and budget justification; and a description of how the project or intervention will benefit or support the immunization program in addressing program priorities and policies, pandemic influenza preparedness, adult immunization, vaccine ordering and management, and adverse events reporting.

### **3.5 Implement and maintain IIS in accordance with the National Vaccine Advisory Committee functional recommendation/standards of operation.**

#### Required activities

- 3.5a. Evaluate IIS progress towards meeting the 12 functional standards of operations. See functional standards on page 5.  
*Performance measure:* Percentage of functional standards attained. Progress made will be measured in the Immunization Information System Annual Report.  
*Target:* 100% implementation of all 12 functional standards

### **Functional Standards for IIS**

- Electronically stores data on all NVAC-approved core data elements
- Establishes an IIS record within six weeks of birth for each newborn child born in the catchments area
- Enables access to and retrieval of immunization information in the IIS at the time of the encounter
- Receives and processes immunization information within one month of vaccine administration
- Protects the confidentiality of medical information
- Ensures the security of medical information
- Exchanges immunization records using Health Level Seven (HL7) standards
- Automatically determines the routine childhood immunization(s) needed, in compliance with current recommendations of the ACIP, when an individual presents for a scheduled immunization
- Automatically identifies individuals due/late for immunization(s) to enable the production of reminder/recall notifications
- Automatically produces immunization coverage reports by providers, age groups, and geographic areas
- Produces official immunization records
- Promotes accuracy and completeness of IIS data

### **3.6 Additional Activities**

#### Recommended activities

3.6a. IIS funded through ISD, like all systems funded through CDC grants, contract and cooperative agreements, must comply with the Public Health Information Network (PHIN) standards and specifications.

This document can be found on the cdc website at:

<http://www.cdc.gov/vaccines/vac-gen/policies/ipom/downloads/chp-03-immz-info-sys.pdf>