

**Immunization Registry
Strategic Plan
2002-2007**

Immunization Registry Support Branch

National Immunization Program

Centers for Disease Control and Prevention

U.S. Department of Health and Human Services



Revised as of April 2, 2003



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Executive Summary

In July 2001, the National Immunization Program (NIP) committed to the development of a 3-5 year strategic plan to ensure reaching the 2010 immunization registry national objective – to increase to 95% the proportion of children (ages 0 - <6 years) participating in a fully operational, population-based immunization registry¹.

The strategic plan was to provide a roadmap of activities required to reach the 2010 registry objective. Although the plan was to focus on NIP's responsibilities, it was acknowledged that achieving the 2010 registry objective would depend on the experience, shared vision, and collaboration of all immunization registry partners. Thus, although the plan was envisioned to be broad in scope and outline all national activities required to meet the registry objective, many of the identified activities would be applicable to the state and local levels.

With assistance from Soza and Company, Ltd., a three-step development process was identified: 1) an analysis of the current environment in NIP and the Immunization Registry Support Branch (IRSB) (NIP's lead immunization registry activity); 2) the creation of a draft plan reached by consensus; and 3) the achievement of plan buy-in from the registry community at the national, state, and local levels, as well as from senior NIP management.

Analysis of the Current Environment: In late 2001, the analysis was completed. Twenty-one individuals were interviewed, including 16 from NIP and five from NIP's close registry partners (All Kids Count, American Immunization Registry Association, Committee on Immunization Registry Standards and Electronic Transactions, and Every Child by Two). The results of the analysis, including NIP and IRSB strengths and weaknesses, were presented at the second meeting of the core group of planners to assist them in drafting the strategic plan.

Creation of a Consensus Document: Participation by a broad representation of all registry partners was considered critical to the creation of a consensus document. Thus, approximately 50 representatives of NIP and its partners, including registry developers, informatics experts, immunization providers, immunization program managers, federal stakeholders, software developers, and non-governmental organizations, were chosen as planners. The 50 were divided into two groups: a "core" group to write the draft plan, and a "document review" group to provide input as the plan was developed.

Three meetings of the core group were held in Atlanta between November 2001 and March 2002. Outcomes of the first meeting included draft mission and vision statements for IRSB, and agreement on the plan's consensus process. The second core group meeting identified 10 focus areas², and began drafting their associated goals, objectives, performance measures, and action items. This draft plan was then posted on a secure web site to allow anonymous review by the document review group. These comments were discussed and incorporated at the third core group meeting when the draft plan was completed. This plan was again made available for comment by the document review group, and revised via conference calls of core group members in April 2002. The plan was then submitted to senior managers at NIP for their approval and buy-in.

¹ US Department of Health and Human Services. Immunizations and infectious diseases. In: Healthy People 2010 (conference ed, vol 1). Washington, DC: US Department of Health and Human Services, 2000:14-41--2. Available at <http://www.health.gov/healthypeople>. Accessed January 16, 2002.

² These focus areas are: partnerships, provider participation, education, data quality, data use, privacy and confidentiality, technical capabilities, integration, IRSB staff, and funding.

Strategic Plan Achievement: As intended, the plan is ambitious and broad. However, each of its activities is considered critical to achieving the registry national objective. Consequently, registry partners agreed, success will depend on several things:

- Commitment from NIP and its registry partners to achieving the objectives outlined in the plan.
- Acknowledgment that additional resources will be required by NIP and its registry partners to fulfill all of the plans described activities.
- Allocation of, and accountability for, these resources.
- Strong managers who use the plan to guide activities.

Although the dedication and hard work of public health professionals throughout the U.S. have resulted in immunization registry progress in every state, only 24% of children are participating in population-based immunization registries³. Activities outlined in the plan should result in increasing this percentage to 95% by 2010. Imagine the morbidity and mortality prevented if that goal is achieved.

³ Centers for Disease Control and Prevention. Immunization Registry Use and Progress – United States, 2001. MMWR. 2002;51:53-56.

Immunization Registry Support Branch Vision and Mission Statements

VISION STATEMENT: Health information systems are the cornerstone of immunization delivery in the 21st century.

Health information systems that contain accurate immunization information are a key tool in rising and sustaining immunization coverage levels in the U.S. Achieving the strategic plan's goals will be critical to ensuring that these systems are incorporated into the routine practice of immunization providers.

MISSION STATEMENT: Maximize protection against vaccine-preventable diseases by leading the advancement of immunization information systems.

Immunization information systems help to maximize protection against vaccine-preventable diseases by providing accurate data on which to make informed immunization decisions. By facilitating the development, implementation, and acceptance of these systems, immunization providers will have the data they need to make the best immunization decisions.

Focus Area 1: Partnerships

Many national organizations have lent their names to registry development. What is needed now is a commitment from these organizations and others to do more to promote development of a nationwide system of fully operational registries. The goal is to identify and engage all organizations that are Immunization Information Systems (IIS) stakeholders to be vocal and active in their support of IIS. For purposes here, organizations would be further characterized as either an endorsing organization (one that formally supports IIS by establishing a resolution or producing letters of support) or as a partner organization (one that identifies areas where the organization can positively impact IISs and then commits to tasks indicated). Organizations will also be asked to identify a “steward” to be responsible for promoting and managing an organization’s efforts and resources towards the use of IISs.

Identifying new IIS stakeholders will be an on-going activity. Stakeholder lists will be revisited annually to identify and pursue organizations to become endorsing and partnering organizations. Although these activities will be conducted at the national level, registry projects will be encouraged to conduct similar activities at the state or local level.

Goal: <i>Forge new, and strengthen existing, partnerships with Immunization Information System (IIS) stakeholders to implement the plan</i>		
Objective: Identify all stakeholder organizations and elicit their commitment to work toward Healthy People 2010 IIS objective		
Strategies	Performance Measure	Timeline
Action Step 1: Contact each organization that has endorsed IIS through resolutions or letters of support and ask it to review the strategic plan and commit to tasks that it can undertake, whereupon the organization becomes a partner organization	Increase the number of known stakeholders that are partner or endorsing organizations.	Ongoing
Action Step 2: Identify a steward in each new partner organization and connect that steward to appropriate personnel at IRSB and existing partners to assist in monitoring tasks		
Action Step 3: Annually evaluate participation of partner organizations and determine who is missing from stakeholders and pursue relationships		
Concerns/Constraints:		
<ul style="list-style-type: none"> • Adequate funding to IRSB and partners 		

Focus Area 2: Provider Participation

Immunization provider participation is critical to the success of IIS, as the National Vaccine Advisory Committee (NVAC) recognized in 1994⁴ and 1998⁵ reports. Providers need to be informed of the benefits of IISs and encouraged to use them as a standard of care.

Efforts are underway to establish a Provider Participation Team (an internal team of NIP staff) and a Health Care Provider Participation Work Group (a group of providers and representatives from medical and professional organizations), to identify issues and seek solutions that will increase provider participation in IISs. This Team and Work Group will investigate current practices among providers using IIS and will collect and disseminate information that best supports provider use of and reliance on IIS. Focus areas will include Advocacy, Education, Marketing and Research in order to develop recommendations to assist IISs as they work toward higher provider participation rates.

Goal: <i>Promote the use of IIS as a standard practice in the delivery of health services</i>		
Objective: Identify, develop, and promote strategies to support recruitment and retention of immunization providers participating in IIS		
Strategies	Performance Measure	Timeline
Action Step 1: Support an ongoing external workgroup (Health Care Provider Participation Work Group (HCPWG) that will meet this objective	Percent of public and private providers participating in IIS (nationwide)	Ongoing
Action Step 2: Collect and share information and strategies (best practices, etc.) used to recruit and retain provider participation in IIS		
Action Step 3: Monitor changing business practices and needs of providers		
Action Step 4: Working together, the HCPWG and Provider Participation Team (PPT) will create and implement recommendations and tools (e.g., marketing plan) for enhancing provider participation		
Action Step 5: Facilitate collaboration with stakeholders, including vendors of practice management systems, to resolve technical and non-technical barriers to participation		
Concerns/Constraints:		
<ul style="list-style-type: none"> • Adequate funding 		

⁴ National Vaccine Advisory Committee Subcommittee on Vaccination Registries. Developing a national childhood immunization information system: Registries, reminders, and recall. Dept. Health and Human Services, Washington DC, 1994.

⁵ National Vaccine Advisory Committee. Report on the development of community- and state-based immunization registries. National Vaccine Advisory Committee, 1998.

Focus Area 3: Education

The sharing of information among all stakeholders is critical to the success of the entire strategic plan. The intent of this focus area is to establish the commitment to the exchange of information and to develop strategies to facilitate this exchange. The efforts here will tie together action steps from across the strategic plan and will provide the structure to ensure successful dissemination of information.

Goal: Educate stakeholders about the use and benefits of IIS		
Objective 1: Develop and implement specific strategies for stakeholder education, including developing a central mechanism for sharing educational materials and best practices		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Identify educational needs/issues</p> <ul style="list-style-type: none"> • Consult with Focus Area stewards to identify education needs associated with the action steps in their area of the IRSB strategic plan <p>And/or</p> <ul style="list-style-type: none"> • Consult with IRSB partners (AIRA, ECBT, etc. – refer to Partnership focus area) to identify: <ol style="list-style-type: none"> 1) IIS informational needs and preferences, 2) Previous successes and failures, 3) IIS information dissemination methods already in use (AIRA knowledge sharing, best practices), and 4) IIS audiences. • Inventory information dissemination methods currently in use at NIP • Identify other Divisions within NIP to information dissemination and/or immunization registries, document their tools and audiences. • Maintain dialogue with Office of Communications to stay abreast of communication policies, new methods and opportunities. • Identify partner roles in fulfilling educational needs Perform educational needs analysis regularly (once, twice per year?) 	<p>Percent of stakeholders who receive requested information on IIS status</p> <p>Percent of stakeholder education issues on which strategies have been developed</p>	Ongoing

Goal: Educate stakeholders about the use and benefits of IIS		
Objective 1: Develop and implement specific strategies for stakeholder education, including developing a central mechanism for sharing educational materials and best practices		
Strategies	Performance Measure	Timeline
<p>Action Step 2: Create/identify educational plan/process to address needs</p> <ul style="list-style-type: none"> • Survey partners on preferred method of receiving information (weekly/monthly e-mail, web site) • Develop plan based on information gathered • Present draft plan to IRSB and partners, gather input <p>Examples:</p> <ul style="list-style-type: none"> • Development of protocol for sharing of information (communication plan) • Development of procedures for development of new web site content and its periodic evaluation for accuracy, archiving of old content. 		
<p>Action Step 3: Facilitate the implementation of education strategies to address identified needs</p> <ul style="list-style-type: none"> • Work with focus area stewards and partners as necessary to implement educational tools/strategies, to include: • Participate/provide input in planning of programmatic aspects of the Annual Immunization Registry Conference (plenary agendas, workshop topics) 		
Concerns/Constraints:		

Goal: Educate stakeholders about the use and benefits of IIS		
Objective 2: Develop and implement specific strategies for internal NIP staff education, including developing a central mechanism for sharing educational materials for IRSB staff		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Identify educational needs/issues</p> <ul style="list-style-type: none"> Consult with IRSB staff to identify educational needs/issues, to include identification of previous successes and failures in communication 		
<p>Action Step 2: Create/identify educational plan/process to address needs</p> <p>Explore mechanisms for regular and timely dissemination of information among IRSB staff</p> <ol style="list-style-type: none"> 1)NIP Intranet 2)Regular project updates at Team and Branch meetings 3)Development of communication plan/protocols for sharing of information (i.e. timeliness, distribution lists) 		
<p>Action Step 3: Implement education strategies to address identified needs</p> <ul style="list-style-type: none"> Develop training curriculum/written documentation of protocols Identify needed steps to implement newly defined protocols 		
Concerns/Constraints:		

Focus Area 4: Data Quality

Data quality is critical to provider participation. Without data that are accurate, timely, and complete, providers will have little incentive to share their immunization data with a registry, or to rely on the registry for “gold standard” data. This focus area addresses methods to ensure that registry data are of the highest quality.

To be accurate, registry data must include only those vaccines that a child has received, and not be duplicated in more than one record for each child. To be timely, registry data must be established for each child born in the registry’s catchment area within 6 weeks of birth, and be received and processed by the registry within 1 month of vaccine administration. To be complete, registry data must have information on vaccine type, vaccine manufacturer, vaccination date, and vaccine lot number for each vaccine recorded, represent all individuals in the registry’s target population, and contain all vaccines that a child has received, regardless of the provider.

Several tools have been developed, or are being developed by the IRSB to assist immunization grantees with data quality evaluations. These tools include:

- 1) A modification to the National Immunization Survey (NIS) such that consent is solicited to enable provider record comparisons with registry records and tracking the proportion of a registry’s target population that is included in a registry; and
- 2) A set of de-duplication test cases that will assess the effectiveness of a registry’s efforts to identify duplicate records.

Action items outlined are based on these tools, and are consistent with methodologies specified in the registry certification process.

<i>Goal: Have IIS data be the "gold standard" for all stakeholders</i>		
Objective 1: Ensure quality data by identifying, developing, implementing, and promoting standardized data quality methodologies		
Strategies	Performance Measure	Timeline
Action Step 1: Promote the assessment of registry data accuracy	Percent of grantees that have assessed the accuracy of their registry’s data using all of the 3 accuracy indicators: Sensitivity of the registry’s automated (pre-human intervention) de-duplication process Specificity of the registry’s automated (pre-human intervention) de-duplication process Percent of duplicates in registry’s database	Ongoing
Action Step 2: Promote the assessment of registry data completeness	Percent of grantees that have assessed the completeness of their registry’s data using all of the 3 completeness indicators:	

Goal: Have IIS data be the "gold standard" for all stakeholders		
Objective 1: Ensure quality data by identifying, developing, implementing, and promoting standardized data quality methodologies		
Strategies	Performance Measure	Timeline
	<p>Percent of sampled children with at least 2 immunizations in the registry (population completeness)</p> <p>Percent of sampled children in registry with complete immunization histories (immunization history completeness)</p> <p>Percent of non-missing/ non-nonsense non-historical data of the nine NVAC core data elements</p>	
Action Step 3: Promote the assessment of registry data timeliness	<p>Percent of grantees that have assessed the timeliness of their registry's data using both of the 2 timeliness indicators:</p> <p>Percent of registry records established within 6 weeks of birth</p> <p>Percent of vaccines administered that were received and processed by the registry within 1 month of administration</p>	
Action Step 4: Promote data quality improvement methodologies	<p>Percent of grantees with established measures for obtaining, maintaining, and sustaining high data quality (ex. Data quality studies, policies, protocols, training, generating reports)</p> <p>Percent of grantees with data quality policies and procedures</p> <p>Percent of grantees utilizing registry data to identify opportunities for improving data quality and taking action based on findings</p>	
Concerns/Constraints:		

Focus Area 5: Data Use

The goals and objectives under this section focus on data use. They seek to address the issue that IIS need to be utilized in order for the full benefits of the system to be realized. The action steps identified by the planning committee address some of the current uses of IIS data while keeping future options open as new and innovative data uses are explored in the coming years.

Goal: <i>Use IIS data for decision making</i>		
Objective 1: Identify and promote effective uses of IIS data		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Measure the proportion of immunization grantees that have used their IIS data for vaccine management, provider quality assurance, service delivery, consumer information, disease surveillance, and vaccination coverage assessment per the Programmatic Registry Operations Workgroup Project (PROW) immunization registry standards of excellence</p> <ul style="list-style-type: none"> • Collect some of this information through the ISD Annual Report • Work with ISD to ensure that registries are utilized during the AFIX process; use the VFC provider site visit questionnaire as a data source; partner with the ISD clinic provider assessment workgroup. AFIX staff could encourage registry data use for frequency breakdowns in “Feedback,” data entry/comparison of providers with peers in “Incentives,” and advertise collaboration (e.g., registry bulletin board) for “Exchange”; use registry to identify providers most in need of improving rates • Work with VODS team to improve CDC vaccine ordering systems to give more incentives for registries to use vaccine management (by 2004-2005) • Work with provider participation focus area to research provider needs and what data providers would want to use. Work with partnerships and education focus areas to “sell” provider organizations and HMOs/hospitals (e.g., AAP, AAFP, etc.) on registry use • Evaluate data use in registries and document examples of data use best practices focusing on the AIRA/PROW Standards of Excellence • Partner with ISD, ESD, and the Center for Innovation in Health Information Systems to research how integrating systems can encourage 	Percent of immunization grantees that have used their IIS data for decision-making	2003-2007

Goal: Use IIS data for decision making		
Objective 1: Identify and promote effective uses of IIS data		
Strategies	Performance Measure	Timeline
IIS data use (e.g., integration of health systems for data use by multiple agencies such as WIC, MMIS, NEDSS, etc.)		
<p>Action Step 2: Ensure that 317 Immunization grant applications review takes into account previous IIS data use</p> <ul style="list-style-type: none"> • Work with ISD/POB to incorporate registry data use into the ISD Immunization Program Operations Manual with examples from Level 1 of the PROW standards of excellence • Work with ISD/POB to ensure that the 317 grant guidance performance measures (under Activity 3.1, Registry Functions) incorporate data use (i.e., grant activities in this section work towards achieving Level 1 standards of excellence in the PROW standards of excellence document) 		2004-2007
<p>Action Step 3: Promote data use through the immunization registry sentinel sites project with analysis of quarterly reports and ad-hoc studies and ensure funding of sentinel sites</p> <ul style="list-style-type: none"> • Incorporate financial incentives to improve data quality and reporting capabilities to ensure active participation and reliable output • Promote results of sentinel sites studies at national conferences and in ECBT or AIRA publications; work with Education focus area to do this • Conduct more ad-hoc studies using the immunization registry sentinel sites • Produce an annual sentinel site report/Power Point presentation for distribution on the CDC/NIP/Registry website and at the annual Immunization Registry Conference • Post sentinel site research questions or a copy of the quarterly report on the CDC/NIP/Registry website so other registries can begin to think of queries to run on their registry datasets • Ensure high data quality and technical functioning of sentinel sites by partnering with Data Quality focus area to ensure that data quality 		Ongoing

Goal: <i>Use IIS data for decision making</i>		
Objective 1: Identify and promote effective uses of IIS data		
Strategies	Performance Measure	Timeline
measures are incorporated in sentinel site research questions and performance measures and encouraging these sites to become certified registries		
Action Step 4: Promote data use by funding data use research, conducting research, and publishing journal articles on data use		Ongoing
Concerns/Constraints: <ul style="list-style-type: none"> Partner goals and timelines may conflict with the action steps and timelines of this focus area; financial constraints may delay the achievement of these action steps 		

Focus Area 6: Privacy & Confidentiality

IIS are successful only to the extent that they maintain the trust of participants. Maintaining the privacy of individuals and the confidentiality of health-related information by instituting and enforcing stringent measures is a key task for IIS. The variety of regulations on privacy across communities complicates this issue. IIS personnel in these communities rely on leadership from NIP/IRSB to help overcome barriers to the exchange of records among different IIS and private providers.

IRSB facilitated the development of specifications and guidelines that are outlined in the updated "Community Immunization Registries Manual: Chapter II: Confidentiality," a resource to assist immunization grantees with implementing effective protection of privacy and confidentiality. The chapter provides a comprehensive discussion, addressing such issues as confidentiality policies, user agreements and confidentiality statements, notification, choice, access to and disclosure of registry information, penalties, and data retention and disposal. This chapter, in the context of applicable laws and regulations, can provide a substantial basis for IIS efforts to maintain participant trust.

The action items outlined below are designed to support a process for IIS to address the legal and policy barriers to data exchange.

Goal: <i>Provide support in the formulation of responses to applicable law</i>		
Objective 1: Identify and share laws* applicable to IIS		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Implement a process to collect state laws and regulations and disseminate to stakeholders</p> <p><u>Collection:</u></p> <ul style="list-style-type: none"> • Check state websites for current legislation and regulations • Check Health Privacy Project website for current state privacy laws • Obtain school entry laws from ISD and review for provisions impacting IIS • Research remaining laws in law library • Email all Registry Coordinators and/or Immunization Program Managers to send or verify current legislation or regulations • Determine feasibility of requiring grantees to provide annual report on changes in IIS legislation (e.g. IRAR, grant app.) • Develop process for updating information and keeping track of change • Maintain tracking of sources of legislation. 	<p>Percent of grantees with current legislation or regulation on file with IRSB, including applicable legislation or regulation from all jurisdictions within grantee encatchment areas</p>	<ul style="list-style-type: none"> • Ongoing • Coordination with Education and broader dissemination planned for 2003-2004

Goal: <i>Provide support in the formulation of responses to applicable law</i>		
Objective 1: Identify and share laws* applicable to IIS		
Strategies	Performance Measure	Timeline
<u>Dissemination:</u> <ul style="list-style-type: none"> • Update current chart on web on registry related state legislation; Include link to appropriate state legislation or regulation, if available • Determine appropriate stakeholders for dissemination • Coordinate with Education 		
Concerns/Constraints:		

Goal: <i>Provide support in the formulation of responses to applicable law</i>		
Objective 2: Monitor current federal legislative and rule-making activity that could impact IIS		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Provide timely feedback on current federal legislative/rule-making activity and disseminate to stakeholders</p> <p><u>Monitor federal legislative/ rule-making activity :</u></p> <ul style="list-style-type: none"> • Attend National Committee on Vital and Health Statistics (NCVHS) Meetings, including Subcommittee on Privacy and Confidentiality meetings; Additional staff can listen to meeting through web • Attend other relevant meeting/ conferences (e.g. NCVHS hearings with public health testimony, HIPAA summit) • Serve as NIP representative to CDC HIPAA Workgroup • Attend CDC Privacy Rule Forum seminars on HIPAA • Attend annual Public Health and Law conference • Monitor Office for Civil Rights (OCR) website • Coordinate with Technical Steward • Coordinate legislative tracking with NIP/OD 	Percent of quarterly reports on federal legal activity impacting registries that are submitted by P & C steward for Percent of quarterly reports on federal legal activity impacting registries that are submitted by P & C steward for dissemination	<ul style="list-style-type: none"> • Ongoing • Quarterly reports to begin in 2003-2004 fiscal year

Goal: Provide support in the formulation of responses to applicable law		
Objective 2: Monitor current federal legislative and rule-making activity that could impact IIS		
Strategies	Performance Measure	Timeline
<p><u>Dissemination:</u></p> <ul style="list-style-type: none"> • Prepare and submit quarterly report for branch chief and further dissemination; Develop schedule for report submission • Define stakeholders; determine who receives report • Privacy and Confidentiality calls • Updates on Program Managers’ Immunization Registry Work Group (PMIRWG) calls • Circulate relevant documents (e.g. updated OCR guidance) • Presentations at conferences- e.g. IRC, NIC • “Every Child By Two” quarterly update • Coordinate with Education 		
Concerns/Constraints:		

Goal: Provide support in the formulation of responses to applicable law		
Objective 3: Assess the extent to which IIS meets privacy and confidentiality guidelines		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Develop the criteria for certification of the minimum functional standard for privacy and confidentiality</p> <ul style="list-style-type: none"> • Convene Confidentiality Workgroup (CWG) • Coordinate with TWG • Perform evaluation of confidentiality policy for those applying for certification and for those not applying for certification 	Percent of immunization grantees with completed evaluation reports on their compliance with P/C and CWG guidelines (Chapter 2 of Community Immunization	<ul style="list-style-type: none"> • Develop criteria 2002-2003 • Evaluate confidentiality policies – begin in FY 2003

Goal: <i>Provide support in the formulation of responses to applicable law</i>		
Objective 3: Assess the extent to which IIS meets privacy and confidentiality guidelines		
Strategies	Performance Measure	Timeline
	Registries Manual) Percent of immunization grantees not applying for certification who have confidentiality policies reviewed by the CWG.	
Concerns/Constraints:		

Goal: <i>Provide support in the formulation of responses to applicable law</i>		
Objective 4: Identify and address legal barriers to enable inter- and intra-state IIS data exchange		
Strategies	Performance Measure	Timeline
Action Step 1: Develop and disseminate potential solutions to the legal barriers that inhibit inter- and intra-state IIS data exchange <ul style="list-style-type: none"> • Develop assessment tool; monitor regional Governors' Association websites • Develop and disseminate policy recommendations for national interstate IIS data exchange; Identify priorities and develop strategies based upon assessment; Pre- conference meetings 	Percent of immunization grantees that have addressed legal barriers to inter- and intra-state data exchange	To be determined Objective will be reevaluated to determine feasibility
Concerns/Constraints:		

Focus Area 7: Technical Capabilities

Technology should be the means to an end, and not an end in itself. Accordingly, the IRSB will promote the development and use of IIS that employ the best technology in order to attain and maintain high rates of immunization through the provision of timely and accurate immunization data. IRSB will accomplish this by identifying appropriate technology in industry and among IIS, sharing the best practices so identified, providing technical assistance to IIS, and maintaining standards for IIS.

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 1: Monitor, evaluate, and report emerging industry trends that will influence IIS operations		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Identify existing staff, recruit new staff, or obtain contract support with appropriate skills and competencies to perform this objective</p> <ul style="list-style-type: none"> • Monitor and evaluate industry trends by reviewing industry IT literature, attending conferences (e.g., AMIA), attending HL7 workgroup meetings, NCVHS, MMIS, and other relevant sources • Report on relevant emerging IT trends and advances as they are analyzed • Disseminate a report annually discussing industry trends and potential impact on IIS 	<p>Number of sources monitored and evaluated</p> <p>Number of emerging trends informal reports (oral and written) disseminated</p> <p>Annual report disseminated</p>	Ongoing
Concerns/Constraints:		

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 2: Monitor, evaluate, develop, and share IIS progress and best practices		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Perform annual assessment of each 317-grantee</p> <ul style="list-style-type: none"> • Conduct site visits to assess technical functions and to determine best practices of registries • Review grant applications to evaluate appropriateness of technical 	<p>Number of site visits conducted</p> <p>Percent of best practices disseminated to registries</p>	Ongoing

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 2: Monitor, evaluate, develop, and share IIS progress and best practices		
Strategies	Performance Measure	Timeline
expenditures proposed, facilitate and develop best practices, and provide feedback to ISD <ul style="list-style-type: none"> Analyze and disseminate national progress and/or topical data on an annual basis through CIRSET and through other appropriate means Promote architecture and engineering practices to promote best practices. 	Percent of annual assessments of each 317 grantee	
Concerns/Constraints: Travel concerns		

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 3: Provide technical assistance to promote the advancement of IIS projects in the U.S.		
Strategies	Performance Measure	Timeline
Action Step 1: Provide timely recommendations/technical assistance to grantees <ul style="list-style-type: none"> Participate with CIRSET members in promoting a standard use of HL7 Participate with HL7 Users Group to eliminate barriers to record exchange Review specifications from registries and vendors to ensure adherence to the implementation guide. Provide feedback. Maintain master copy of implementation guide to update as necessary Research messaging standards and protocols and develop solutions to needs identified by registries or their vendors Research transport options and guide registries to adopt standard solutions Research security options and guide registries to adopt standard solutions Communicate with vendors to encourage their implementation of standard messages 	Percent of registries using standards for record exchange Percent of site visit recommendations provided within 2 weeks of site visit	Ongoing

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 3: Provide technical assistance to promote the advancement of IIS projects in the U.S.		
Strategies	Performance Measure	Timeline
<ul style="list-style-type: none"> Identify and partner with organizations involved in information technologies supportive to IIS advancement to expand technical assistance opportunities 		
Concerns/Constraints:		

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 4: Maintain a set of standards for functioning and using IIS and communicate changes		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Support TWG, CIRSET, and the certification entity with appropriate resources</p> <ul style="list-style-type: none"> Finalize certification process, complete pilot testing, present results of pilots Establish the certifying body Finalize the operating procedures for the certifying body, schedule certification subgroups <p>Support the certifying body</p> <p>Receive application for certification</p> <p>Conduct initial assessment of application and supporting materials.</p> <p>Analyze data base cohort and frequency distribution</p> <p>Finalize instructions for data collectors</p>	Percent of changes to IIS standards that are communicated within 2 weeks of final approval	Ongoing

Goal: *Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data*

Objective 4: Maintain a set of standards for functioning and using IIS and communicate changes

Strategies	Performance Measure	Timeline
<p>Coordinate site visit for data collectors</p> <p>Assemble data for certification decision</p> <p>Prepare recommendation for certification</p> <p>Prepare feedback for registry applicant</p> <p>Dedicate staff to participate in the development, maintenance, and implementation of standards to represent registry interests</p> <ul style="list-style-type: none"> • Develop subject matter expertise in <ol style="list-style-type: none"> 1) HL7 Versions 2.3.1 and 3 2) XML and related standards (eBXML, SOAP, etc.) 3) The Public Health Data Model and the NEDSS system as it relates to registries 4) HIPAA transactions as they affect immunization registries 5) Vaccine-related informatics products and technical assistance to users of the products • Maintain HL7 vaccine code set (CVX) (research newly licensed vaccines to determine whether new codes are needed, respond to inquiries from users); HL7 manufacturer code set (MVX) (research changes in companies and represent current industry); and, CPT/CVX mapping <p>Monitor vaccine related code sets and vocabularies and initiating appropriate activities</p> <p>Monitor contractors who develop HL7 tools for use by registries</p> <p>Review and evaluate specifications for the HL7 tools to ensure consistency</p>		

Goal: <i>Promote integrated, secure, easy-to-use immunization information systems that contain timely and quality data</i>		
Objective 4: Maintain a set of standards for functioning and using IIS and communicate changes		
Strategies	Performance Measure	Timeline
<p>with the implementation guide</p> <p>Encourage record exchange between providers and registries and among registries by convening groups to discuss issues and resolve problems</p> <p>Encourage record exchange between providers and registries and among registries by working with vendors to resolve</p>		
Concerns/Constraints:		

Focus Area 8: Integration

The sustainability of IIS may be dependent upon their ability to integrate with other health information systems. Vertical systems supported by categorical funding streams have proven to be only one more challenge to the already overburdened health care provider. Because these "silo" systems have only a limited public health scope, they are difficult to market and sustain. Individuals have multiple health needs that could benefit from coordinated, electronic health information systems.

Although widespread integration of IIS with other appropriate health information systems is not anticipated in the next three to five years, IIS should be developed to facilitate such integration.

Goal: Promote appropriate integration and linkages of IIS in health information systems

Objective: Promote active collaboration with all appropriate federal information technology-related projects that can help to advance IIS operations

Action Step 1: Identify a group to participate in the development of options for integrating IIS and other health information systems using open system architecture and accepted standards

<i>Goal: Promote appropriate integration and linkages of IIS in health information systems</i>		
Objective 1: Promote active collaboration with all appropriate federal information technology-related projects that can help to advance IIS operations		
Strategies	Performance Measure	Timeline
<p>Action Step 1: Identify a group to participate in the development of options for integrating IIS and other health information systems using open system architecture and accepted standards</p> <ul style="list-style-type: none"> • Identify potential organizations (e.g., NAPHSIS, Registry reps., CMS, WIC) 	<p>Percent of identified feasible options that have been made available to IIS developers</p>	<p>Year 2 and 3</p>
<p>Action Step 2: Identify appropriate open standards and foster their adoption by developers</p> <p>Develop guidelines document identifying and advocating use of appropriate standards by IIS</p>	<p>Percent of integration systems partners approached regarding the adoption of open standards</p>	<p>Ongoing</p>

Goal: <i>Promote appropriate integration and linkages of IIS in health information systems</i>		
Objective 1: Promote active collaboration with all appropriate federal information technology-related projects that can help to advance IIS operations		
Strategies	Performance Measure	Timeline
<p>Action Step 3: Meet with health information systems partners to obtain commitment to using open standards in their systems development</p> <p>Hold developer meeting at Immunization Registry Conference to discuss adoption of open standards. Travel to meet individually with health information systems partners</p>		Year 3
<p>Action Step 4: Identify and promote IIS integration with other CDC systems development activities and products.</p> <ul style="list-style-type: none"> • Identify other NIP systems development activities • Review BT plans • Meet to discuss possible collaboration between registries and BT and BT funding opportunities • Track NEDSS IT functions and specifications to identify impact on IIS; Attend NEDSS stakeholders meetings; • Participate in VPD/NEDSS development efforts to ensure consistency with IIS 		Ongoing
<p>Action Step 5: Identify and promote IIS integration with HHS public health systems development activities and products.</p> <ul style="list-style-type: none"> • Identify potential integration opportunities within HHS (e.g., NAPHSIS, CMS); Attend other HHS agency conferences (e.g., MMIS) • Track standards being used by other public health systems being developed • Determine whether integration with these systems is appropriate and what barriers exist 		Ongoing
Concerns/Constraints:		

Focus Area 9: Immunization Registry Support Branch Staff

Accomplishing the immunization registry national objective is contingent upon the commitment and participation from registry partners nationwide, both in the public and private sectors. At CDC, the IRSB in the NIP has responsibility for facilitating the accomplishment of this national objective. As a result, sufficient IRSB staff is needed with the appropriate skills and knowledge to facilitate reaching the plan’s focus area goals.

Shortly after the strategic plan is finalized, an IRSB gap analysis will be conducted where plan responsibilities are compared with existing IRSB staff skills and knowledge. It is critical that IRSB use its current staff for optimal results, and secure additional well-trained and experienced personnel. To facilitate, IRSB must foster an open, creative and accountable environment.

Goal 1: Obtain sufficient staff and accompanying resources to support all objectives of the strategic plan		
Objective: Assess current staff responsibilities and reorganize to maximize strategic plan support		
Strategies	Performance Measure	Timeline
Action Step 1: Conduct staffing gap analysis and submit resource requests as necessary to meet strategic plan goals	Percent of immunization grantees and registry developers rating IRSB as excellent or outstanding on a Likert measure (i.e., unacceptable, marginally successful, fully successful, excellent, outstanding)	April 2003
Action Step 2: Coordinate staffing assignments such that a minimum of 2 staff are capable of supporting each strategic plan objective		
Concerns/Constraints:		

Goal 1: Obtain sufficient staff and accompanying resources to support all objectives of the strategic plan		
Objective: Assess current staff responsibilities and reorganize to maximize strategic plan support		
Strategies	Performance Measure	Timeline
<ul style="list-style-type: none"> If resources are not available, prioritization of plan goals and objectives needs to be made and partners need to be informed that progress is contingent upon resources. 		

Goal 2: Ensure staff has appropriate skills, knowledge, and opportunity to support the objectives of the strategic plan		
Objective 1: Provide timely training to ensure all staff have technical and programmatic skills needed to support strategic plan objectives		
Strategies	Performance Measure	Timeline
Action Step 1: Perform training needs assessment and gap analysis	Percent of training courses attended that were identified in individual employee training plans	Ongoing
Action Step 2: Develop training plans for each staff member		
Action Step 3: Identify training resources		
Concerns/Constraints:		

Goal 2: Ensure staff has appropriate skills, knowledge, and opportunity to support the objectives of the strategic plan		
Objective 2: Create an environment that encourages openness and innovation and facilitates sharing of experience and knowledge among branch members		
Strategies	Performance Measure	Timeline
Action Step 1: Identify and implement methods of sharing experience, knowledge, ideas, and policies within IRSB	Percent of IRSB staff rating IRSB environment	Ongoing

Goal 2: <i>Ensure staff has appropriate skills, knowledge, and opportunity to support the objectives of the strategic plan</i>		
Objective 2: Create an environment that encourages openness and innovation and facilitates sharing of experience and knowledge among branch members		
Strategies	Performance Measure	Timeline
Action Step 2: Develop training plans for each staff member	as excellent or outstanding on a Likert measure (i.e., unacceptable, marginally successful, fully successful, excellent, outstanding)	
Action Step 3: Identify training resources		
Concerns/Constraints: <ul style="list-style-type: none"> All staff will be made accountable for identifying and implementing methods of sharing experience, knowledge, and ideas within IRSB. Administrative and management staff will be made accountable for sharing administrative/management policies with IRSB staff. 		

Focus Area 10: Funding

Three distinct areas are covered under the funding focus area: immunization information system development and maintenance funding; accountability of fund recipients; and internal funding of the IRSB.

The first section addresses the availability of funds to support immunization information systems. While the federal, state, and local governments have provided the majority of the funding for these systems to date, it is recognized that funding sources need to be diversified in order to provide stable funding for immunization information systems. The steps identified under this section address the identification, cultivation, and utilization of additional funding sources.

In the second section, the plan seeks to address one of the weaknesses inherent in the current funding of immunization information systems. Internal and external stakeholders identified a lack of accountability as a critical area to be addressed in the strategic plan. The steps identified are intended to improve the accountability of immunization information system projects in those areas where the IRSB and NIP can have a direct impact.

The third issue addresses the need for sufficient resources within the Immunization Registry Support Branch in order to support the goals and objectives of the strategic plan. Although the strategic plan includes objectives and actions for a variety of stakeholders, the Immunization Registry Support Branch must maintain sufficient resources to address the areas of the strategic plan where it is either the main implementation group or where it has oversight of other activities.

Goal 1: <i>Assist projects in obtaining diverse, sustainable sources of funding for IIS</i>		
Objective 1: Identify existing and potential funding sources and the processes required to get the funding		
Strategies	Performance Measure	Timeline
Action Step 1: Document costs, cost offsets, cost effectiveness, and cost benefits of IIS	Percent of identified potential collaborations attempted Percent of new and existing sources with application processes made available to grantees	Immediate and Ongoing
Action Step 2: Identify and develop relationships with public and private entities with an interest in funding IIS		
Action Step 3: Inform and assist grantees with applying for funding		
Action Step 4: Evaluate collaborations between projects and funding sources to determine if additional relationships need to be developed		

Goal 1: Assist projects in obtaining diverse, sustainable sources of funding for IIS		
Objective 1: Identify existing and potential funding sources and the processes required to get the funding		
Strategies	Performance Measure	Timeline
Concerns/Constraints: <ul style="list-style-type: none"> Ongoing information on registry cost offsets, cost effectiveness, and cost benefits is crucial. A sustainable process for collecting these data on an ongoing basis needs to be implemented Sufficient IRSB staff is needed to facilitate this activity. These efforts should include attempting to identify funding for state systems integration 		

Goal 1: Assist projects in obtaining diverse, sustainable sources of funding for IIS		
Objective 2: Participate in 317-grant review process to affect funding decisions regarding IIS		
Strategies	Performance Measure	Timeline
Action Step 1: Evaluate 317 funding proposals to determine whether they would achieve the objectives stated	Percent of grant applications reviewed with IRSB recommendations	Annually
Action Step 2: Make recommendations to Immunization Services Division (ISD) program consultants on 317 funding proposals		
Action Step 3: Obtain results of the grant process from ISD program consultants	Percent of IRSB recommendations addressed in 317 funding applications	
Concerns/Constraints:		

Goal 2: Ensure efficient use of NIP IIS funds		
Objective: Hold projects accountable for NIP IIS funds awarded		
Strategies	Performance Measure	Timeline
Action Step 1: Evaluate funding proposals to determine whether they would achieve the objectives stated	Percent of funded objectives achieved	Annually
Action Step 2: Annually evaluate activities specified in grant application		Ongoing
Action Step 3: Include evaluation results in the recommendations for future funding requests		Annually
Concerns/Constraints:		
<ul style="list-style-type: none"> IRSB evaluators must have the skills needed to perform reviews of 317 and VFC applications, as well as cooperative agreements. ISD must be committed to this IRSB evaluation role 		

Goal 3: Obtain sufficient funding for IRSB to support goals of the strategic plan		
Objective: Obtain CDC management support in the budgetary process to ensure sufficient branch funding		
Strategies	Performance Measure	Timeline
Action Step 1: Quantify objectives that will not be realized due to lack of funding	Percent of strategic plan's objectives that were not achieved because of lack of funding	Quarterly
Action Step 2: Increase visibility of IIS champions		Immediate and ongoing
Concerns/Constraints:		
<ul style="list-style-type: none"> Staff turnover/details, champion availability 		

Evaluation of Progress and of the Plan

Strategic plans are not static documents. Progress toward accomplishing objectives should be measured and compared to the plan. If difficulties are encountered in achieving objectives, corrective action should be taken. Over time, successes and difficulties create changed conditions that call for review and updating of plans.

Measuring Progress toward Objectives

In the Immunization Registry Strategic Plan, performance measures are associated with objectives to track progress toward completing objectives. The description of each performance measure includes:

- Indicator—what is measured and the scale used
- Numerator and denominator—how ratio measures are computed
- Frequency—how often the measure is taken
- Goal—what level of performance would indicate the objective has been met
- Source—who collects the measurements

The person responsible to take a measure will expeditiously report the results to those managers who could take corrective action. The collector will also report the results to a single collection point within IRSB (to be named) and these results will be disseminated to registry partners on an annual basis.

Evaluating the Plan

On an annual basis, IRSB will review the entire plan and update the plan as appropriate. In addition, elements of the strategic plan will be updated whenever significantly changed conditions dictate.

Acronym List

AAP	American Academy of Pediatrics	MHRA	Medical and Health Research Association
AAFP	American Academy of Family Physicians	MMIS	Medicaid Management Information System
AIRA	American Immunization Registry Association	NAPHSIS	National Association of Public Health Statistics
AFIX	Assessment, Feedback, Incentives, eXchange	NEDSS	National Electronic Disease Surveillance System
AMIA	American Medical Informatics Association	NIC	National Immunization Conference
CDC	Centers for Disease Control and Prevention	NIP	National Immunization Program
CIRSET	Committee on Immunization Registry Standards and Electronic Transactions	NIS	National Immunization Survey
DMD	Data Management Division	NVAC	National Vaccine Advisory Committee
eBXML	Electronic Business using eXtensible Markup Language	NVPO	National Vaccine Program Office
ECBT	Every Child By Two	OD	Office of the Director
ESD	Epidemiology and Surveillance Division	P/C	Privacy and Confidentiality
FTE	Full Time Equivalent	POB	Program Operations Branch
HCPWG	Health Care Provider Participation Work Group	PPT	Provider Participation Team
HL7	Health Level Seven	PROW	Programmatic Registry Operations Workgroup
HIPAA	Health Insurance Portability and Accountability Act	SOAP	Simple Object Access Protocol
IIS	Immunization Information Systems	SODA	Systems Operations and Design Activity
IRAR	Immunization Registry Annual Report	TWG	Technical Working Group
IRC	Immunization Registry Conference	VFC	Vaccines for Children
IRSB	Immunization Registry Support Branch	WIC	Special Supplemental Nutrition Program for Women, Infants, and Children,
ISD	Immunization Services Division	XML	eXtensible Markup Language
IT	Information Technology		

