1. **What is the Immunization Integration Program?**

   The Immunization Integration Program (IIP) advances the integration of immunization-related capabilities in electronic health records (EHRs) and other clinical software by recognizing those products that demonstrate inclusion of those capabilities through testing.

   The IIP is operated by HIMSS in collaboration with the Drummond Group, under a Centers for Disease Control and Prevention (CDC), National Center for Immunization and Respiratory Diseases (NCIRD) contract with Chickasaw Health Consulting, LLC (CHC).

2. **How does the IIP work? What is included in the IIP?**

   The IIP supports inclusion of immunization-related capabilities in EHRs and other clinical software in three ways:
   - Facilitating agreement on priority immunization-related software capabilities that align with clinical workflows;
   - Enabling software developers to voluntarily test and achieve recognition of their products for inclusion of immunization capabilities; and
   - Providing guidance to improve usability of immunization-related software functions.

   Immunization-related software capabilities – informed by significant input from clinicians, EHR developers, immunization information systems (IIS), and other key stakeholders – as well as usability guidance, test tools, instructions for testing and achieving recognition, and the list of recognized software products are all available on the HIMSS Immunization Integration Program [website](https://www.himss.org).

3. **What are the benefits of having immunization-related capabilities in EHRs?**

   Integrating immunization-related capabilities within EHRs and other clinical software is expected to improve clinical and patient decision-making by providing more timely access to immunization histories and forecasts and enhancing information sharing between EHRs and immunization registries.

   CHC recently completed a survey of clinicians, EHR developers and vendors, IIS, and other key stakeholders to understand their views on the value of having
immunization-related capabilities in EHRs. An overview of their insights is provided below.

**Benefits for Clinicians and Other Immunization Providers:**
- Enable them to deliver better care to their patients
- Reduce burden associated with:
  - Reporting to immunization registries
  - Carrying out responsibilities associated with the Vaccines for Children Program
  - Reporting on immunization-related performance measures
  - Providing immunization-related information to my patients or their caregivers
- Enhance their ability to meet Meaningful Use requirements under the CMS EHR Incentive Programs or MACRA

**Benefits for EHR and Other Clinical Software Developers:**
- Enable their customers who are clinicians and other immunization providers, to deliver better care to their patients
- Reduce the burden associated with developing and implementing software changes associated with reporting to immunization registries (as required under the CMS EHR Incentives Programs or MACRA and related Standards and Certification Criteria)

**Benefits for Immunization Information Systems:**
- Enable them to receive more immunization-related information from clinicians and other immunization providers
- Improve the timeliness of receipt of immunization-related information from clinicians and other immunization providers
- Improve the data quality of immunization-related information received from clinicians and other immunization providers
- Reduce the burden associated with the receipt of immunization-related information from clinicians and other immunization providers
- Reduce the burden associated with the transmission of immunization-related information to clinicians and other immunization providers
- Enable testing and/or implementation of IIS-EHR interfaces more efficiently

**Benefits for Those Who Pay for Healthcare:**
- Enable clinicians and other immunization providers to deliver better care to their patients
- Improve the accuracy and timeliness of reporting on immunization-related performance measures
- Improve the quality and safety of healthcare and/or health outcomes
- Decrease the cost of care
- Improve the patient experience of care

**Benefits for Individuals:**
- Help them access their immunization histories more quickly and conveniently
- Improve the accuracy of their immunization information
4. What software capabilities are recommended by the IIP?

The IIP recommends 47 immunization-related software capabilities that span eight clinical workflows (summarized below), to support an end-to-end process for immunization management:

1. **Registering and identifying a patient** (to assure the provider and the registry are communicating about the same patient);

2. **Managing external query, response, and reconciliation** (to enable bidirectional data sharing with immunization registries, providing more accurate data for managing patient care);

3. **Managing information for clinical decision-making** (to enable the right immunization at the right time for patients);

4. **Managing inventory** (to assist with managing private vaccine and government guarantee program stock);

5. **Administering and reporting immunizations** (to assure accurate, non-obtrusive data entry, enabling patient management and reporting to immunization registries);

6. **Managing cohorts of patients** (to encourage timely vaccinations and help manage any vaccine recalls);

7. **Managing adverse events** (to identify safety issues, help prevent future adverse events, and support reporting); and

8. **Providing patient access to immunization information** (to help patients and their caregivers access their immunization histories).

A full description of each of the 47 software capabilities recommended by the IIP, along with related guidance, can be found [here](#) on the HIMSS Immunization Integration Program website.

5. How were the immunization-related software capabilities developed?

The IIP software capabilities were informed by multiple interviews, several working sessions, and online surveys over the course of four years, involving clinicians, EHR and other clinical software developers, IIS, usability experts, and other key stakeholders. The capabilities and testing tools were also informed by assessments of existing software and pilot tests involving several commercial software products.

HIMSS and CHC continue to gain input from clinicians, EHR and other clinical software developers, IIS, and other key stakeholders through multiple means including:

- Solicitation of input through the HIMSS IIP website;
- An online forum open to software developers preparing for or participating in testing;
- Debriefing calls with each software developer that goes through testing and recognition; and
Deliberations of and guidance from a multi-stakeholder Technical Advisory Panel, who reviews input received from the many source identified above and makes recommendations for changes to the capabilities, guidance, test tools, and recognition requirements.

6. What does IIP Recognition mean? What capabilities must a software product contain to be recognized?

IIP recognition is granted under IIP Guidelines [need a link to guidelines/requirements for recognition] to those software products that demonstrate at least 24 of the 26 immunization-related software capabilities recommended for testing under the Program, which span all eight clinical work flows. Those software products achieving recognition must demonstrate through testing, compliance with five core capabilities, and 19 of the 21 remaining optional capabilities. The list of software capabilities included in IIP testing and recognition is provided below. A more detailed description of each of these capabilities, is located here. Corresponding test scripts can be accessed here.

**Immunization-Related Software Capabilities included in Testing, Organized by Clinical Workflow:**

1. **Register and Identify Patient**
   - 1.1: Register New Patients
   - 1.2: Select New Patient

2. **Manage External Query, Response, and Reconciliation**
   - 2.2: Real Time Request/Receive Patient Immunization History*
   - 2.3: Compare Public Health Immunization Registry (IIS) Immunization History to EHR Immunization History*
   - 2.4: Request/Receive Patient Immunization Data and Identify Source

3. **Manage Information for Clinical Decision-making**
   - 3.1: View Immunization Forecast*
   - 3.2: Review Reconciled Immunization Forecast
   - 3.4: Modify Antigen Recommendation Based on Active Diagnoses
   - 3.6: Receive Dose Not Indicated Alert for Single Vaccine Order

4. **Manage Inventory**
   - 4.4: Notify of Vaccine Dose Expiration

5. **Administer and Report Immunization**
   - 5.1: Produce Standard Patient Immunization History Report
   - 5.2: Record Vaccine Administration Deferral
   - 5.3: Record Past Immunizations
   - 5.4: Notify of Vaccine Dose Ineligibility
   - 5.6: Enter Vaccination Order
   - 5.7: Review Patient Administration History*
5.8: Link Standard Codes to Immunization Data
5.9: Record Vaccine Administration
5.11: Transmit Standard Patient Immunization History Report*
5.14: Produce Immunization Forecast Report

6. Manage Cohort
   6.1: Produce Population-Level Report

7. Manage Adverse Events
   7.1: Identify Adverse Event
   7.3: Notify of Previous Adverse Event
   7.4: Notify IIS of Update from Adverse Event

8. Provide Patient Access
   8.1: Provide Access to Patient Immunization Record

*Core (required) capabilities

7. Why aren’t all immunization-related software capabilities in the IIP tested?

Currently IIP Recognition requires successful testing against up to 26 of the 47 immunization-related software capabilities recommended by the Program. Many of those capabilities not yet tested require more advanced functionalities or greater collaboration between clinical care and public health to align standards and processes.

Over time, and with the guidance of the IIP Technical Advisory Panel, the IIP will introduce, pilot test, and incorporate additional testing requirements – drawing from the remaining 21 software capabilities recommended but not yet tested.

8. Who conducts the testing? How are recognition decisions made?

The Drummond Group conducts software testing under the IIP. Tests are conducted by Drummond Group trained proctors who follow established test scripts and protocols. Proctors document the system under test (SUT) performance. Deviations, if any, are assessed for allowable exceptions. If deviations are deemed unacceptable, they are documented and the SUT is informed of the details that must be retested. Once all deviations are corrected, the SUT is deemed compliant with testing requirements.

Recognition decisions are rendered by HIMSS based on successful completion of tests by the SUT in accordance with the IIP Guidelines.

9. How will I know if my software is recognized? Where can I find the list of recognized products?

HIMSS lists all recognized software products on the Immunization Integration Program website.

10. How does the IIP relate to the ONC Health IT Certification Program? Do IIP-recognized products meet the immunization requirements of the ONC Health IT Certification Program? What does it mean for the IIP to be an “ONC-approved alternative testing method”?
The HIMSS IIP has been approved by the Office of the National Coordinator for Health IT (ONC) within the Department of Health and Human Services (HHS) as an alternative testing method for the ONC Health IT Certification Program.

Five of the core testing requirements under the IIP align with Certification Criteria within (f)(1) Transmission to Immunization Registries, within the ONC Health IT Certification Program.

IIP’s approval by ONC as an alternative testing method means that those software products that achieve IIP recognition can “get credit” for having successfully tested against the ONC Health IT Certification (f)(1) Certification Criteria. ONC-Approved Health IT Certification Bodies can now rely upon IIP Recognition for – and therefore will not need to also test for – compliance with (f)(1) Certification Criteria.

11. Why would software developers and vendors go through IIP Recognition if they have already received ONC Health IT Certification?

The IIP is designed to support increased alignment of EHR and other clinical software with eight clinical workflows – developed with considerable input from numerous practicing clinicians – for improved end-to-end clinical processes for immunization management.

Achieving recognition under the IIP will enable software developers and vendors to demonstrate value-added capabilities to their customers – practicing clinicians.

Integration of IIP-recommended immunization capabilities within EHRs are expected to:

- Enable clinicians to deliver better care to patients;
- Make it easier for clinicians to administer appropriate vaccines that comply with clinical guidelines;
- Reduce clinician burden associated with reporting to immunization registries, reporting on immunization-related performance measures, participating in the Vaccines for Children Program, and providing immunization-related information to patients;
- Increase knowledge and acceptance of vaccines among patients and their caregivers; and
- Improve vaccine tracking and safety.

Software developers and vendors that achieve IIP recognition should also expect – over time – to reduce the burden associated with achieving effective information sharing with the multitude of IIS or immunization registries in the U.S., which often have different requirements.

12. Which national standards are being leveraged by the IIP?


13. How do the IIP capabilities relate to other standards and standard-setting efforts, such as HL7?

The HL7 Public Health Workgroup is currently working on an updated version of the HL7 Immunization R1 standard, anticipating a ballot in May 2018. The IIP program maintains close collaboration with the HL7 Public Health Workgroup in this effort to encourage greater collaboration among clinical care and public health workflows.

Also, the IIP software capabilities were informed by requirements in the HL7 EHR Functional Model (version 2) and the AHRQ Children’s EHR Format. The IIP maintains contact with new efforts by the HL7 EHR Workgroup to create an EHR Functional Model Profile R2: Immunization Functional Profile, available at http://www.hl7.org/Special/committees/ehr/projects.cfm?action=edit&ProjectNumber=1276.

14. How does the IIP coordinate with state and local IIS or immunization registry efforts?

CDC NCIRD – the Branch which supports the IIP – is also the Branch which supports IIS. A number of projects are underway – including this Project – that are designed to facilitate better information sharing between IIS and EHRs used by the vast majority of clinicians and other immunization providers across the U.S.

Also, HIMSS and CHC routinely interact with IIS stakeholders through various means to promote alignment between IIP testing and recognition requirements and IIS requirements. For example, three members of the HIMSS IIP Technical Advisory Panel are IIS stakeholders. The vast majority of IIS stakeholders participate in the IIP online survey each year. Also, members of the IIP routinely participate in meetings with and presentations to IIS stakeholders during annual conferences and meetings attended by all IIS stakeholders.

15. Why did CDC invest in this Program?

CDC believes that having immunization-related capabilities within EHRs and other clinical software will lead to better clinical decision-making, by providing more timely access to immunization histories and forecasts and improving information sharing between EHRs and IIS, thus resulting in more complete immunization records and improved immunization rates.

CDC’s ultimate goal is for all clinicians and other immunization providers to have access to these important capabilities within their EHRs, to not only improve their workflow and ability to effectively communicate with immunization registries, but also to improve the care they deliver to their patients.

16. What are the plans for long-term sustainability of the Program?

The CDC, CHC, and HIMSS are committed to the long-term sustainability of the IIP, which is expected to improve immunization rates by leveraging methods that support the voluntary adoption of these capabilities within EHR systems and other clinical software in the United States.