



# AIRA

AMERICAN IMMUNIZATION  
REGISTRY ASSOCIATION

## IIS Validation

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**Query and Response**

Updated May 30, 2019

## Background and Context

The consolidation of immunization records from multiple sources is a primary function of Immunization Information Systems (IIS)<sup>1</sup>. To ensure complete, accurate and timely consolidated records, IIS must receive data from a high proportion of immunizers within their catchment area through standardized reporting channels. Messaging standards have been present across the IIS community for more than twenty years, and have increasingly gained importance as Electronic Health Record (EHR)-IIS interoperability has grown in necessity across health care. The primary standard for IIS messaging is the HL7 Version 2.5.1 Implementation Guide for Immunization Messaging, Release 1.5<sup>2</sup>.

In 2016, AIRA convened the Measurement for Assessment and Certification Advisory Workgroup (MACAW) to develop and propose measures for IIS Assessment. These measures and tests were shared with the full AIRA community for input and consensus. Finally, these measures were approved by the AIRA Board of Directors in December 2016. A baseline measurement was taken during the first quarter of 2017 with remeasurements in each subsequent quarter. Aggregate results are published on the AIRA Repository<sup>3</sup>. MACAW is now recommending these measures be used for Validation.

## Functional Standards and Operational Guidance Statements

The use of standardized messaging is referenced throughout the IIS Functional Standards, v4.0<sup>4</sup>. The revised IIS Functional Standards were developed by the Immunization Information Systems Support Branch, CDC/NCIRD, through a consensus-based process involving input from a variety of IIS managers and technical experts from across the U.S. They reflect the functionality an IIS should strive to attain to fully support program and stakeholder immunization-related goals. The following Functional Standards are included – at some level – in the MACAW measures and tests defined in this document.

**Functional Standard 1.5:** The IIS ensures that submitted vaccination and demographic data are processed and viewable in a timely manner.

**Functional Standard 1.6:** The IIS assures the receipt, processing, and storage of demographic and vaccination data elements as endorsed by CDC.

**Functional Standard 8.3:** The IIS receives queries from, and sends responses to, health information systems consistent with the current CDC-endorsed HL7 Implementation Guide.

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<sup>1</sup> <http://www.cdc.gov/vaccines/programs/iis/about.html>

<sup>2</sup> <http://www.cdc.gov/vaccines/programs/iis/technical-guidance/downloads/hl7guide-1-5-2014-11.pdf>

<sup>3</sup> <http://repository.immregistries.org/resource/iis-measurement-and-improvement-query-and-response-assessment-aggregate-status-report/>

<sup>4</sup> <https://www.cdc.gov/vaccines/programs/iis/functional-standards/func-stds-v4-0.html> p

## Approved Assessment Measures

The Assessment measures for Query and Response were approved in December 2016 and will be used for Validation. For more information on the assessment measures, please see the Query and Response Assessment document on the AIRA website.<sup>5</sup>

## Validation Stage

The *Immunization Information System (IIS) Measurement and Improvement: Testing and Discovery, Assessment and Validation Overview*<sup>6</sup> document describes the Validation stage in detail and should be referenced for more information. At the highest level, the Validation stage uses the same (or a subset of) measures and tests which have been developed, vetted, and approved by the IIS community and AIRA Board for IIS Assessment. No new measures are introduced at Validation that have not already been measured in IIS Assessment.

## Validation Levels

Query and Response will contain two Validation Levels (Basic and Complete). Measures selected for Validation are reviewed and assigned a Level based on the following definitions.

- **Basic Level:** A level of Validation measurement that includes only essential measures to functionally meet the content area.
- **Complete Level:** A level of Validation measurement that includes conformance to all measures approved for Validation.

The following table defines the requirements for both Basic and Complete levels of Validation.

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<sup>5</sup> <http://repository.immregistries.org/resource/measures-and-tests-for-assessment/>

<sup>6</sup> <https://repository.immregistries.org/resource/iis-measurement-and-improvement-testing-and-discovery-assessment-and-validation-overview/>

Table 1: Query and Response Validation Levels

Assessment Measure	Basic Level	Complete Level
1 - The IIS processes a query requesting a patient's immunization record.	X	X
2 - The IIS processes a query requesting a patient's evaluated immunization record and forecast.	X	X
3 - The IIS responds to a query for a known patient (one-to-one match).	X	X
4 - The IIS responds to a query for a patient that is not in the IIS.	X	X
5 - The IIS responds to a query that results in multiple possible patients.		
6 - The IIS responds to a query that has a significant error that cannot be accepted.		X
7 - The IIS responds to a query for a known patient and returns known Core Data Elements.	X	X
8 - The IIS responds to a query with an RSP within 5 seconds or less for 95% of the queries submitted.		X

- **NOTE:** Measure 5 is not being moved into Validation at this time. To properly assess Measure 5, an intentional duplicate patient must be created in the IIS. To date, the AIRA Measurement and Improvement project has been unable to create this duplicate consistently across all IIS leading to varied results and false negatives.






## Validation Statuses

Validation statuses are assigned based on the Assessment outcomes for the measures of interest (e.g., Meets, Deviates, Does Not Meet). More information on Assessment outcomes can be found in the *Measures and Tests for Assessments: Message Query and Response*<sup>7</sup>.

<sup>7</sup> <http://repository.immregistries.org/resource/measures-and-tests-for-assessment/>






## Basic Level Requirements

Table 2: Basic Level Requirements

Validation Status	Assessment Outcome Requirements
	The IIS Meets all measures which are identified to be part of the Basic Level in <a href="#">Table 1</a> above.
	The IIS Deviates on one or more measures and Meets on all remaining measures which are identified to be part of the Basic Level in <a href="#">Table 1</a> above.
	The IIS fails to meet the requirements for Validated and Minor Differences.
	The IIS has communicated willingness to be measured but is not able to be tested at this time.
	The IIS has chosen not to be measured.

# Complete Level Requirements

Table 3: Complete Level Requirements

Validation Status	Requirements
	<p>The IIS Meets all measures which are identified to be part of the Complete Level in <a href="#">Table 1</a> above.</p>
	<p>The IIS Deviates on one or more measures and Meets on all remaining measures which are identified to be part of the Complete Level in <a href="#">Table 1</a> above.</p>
	<p>The IIS fails to meet the requirements for Validated and Minor Differences.</p>
	<p>The IIS has communicated willingness to be measured but is not able to be tested at this time.</p>
	<p>The IIS has chosen not to be measured.</p>