



Fall 2024 NHSN Vendor Webinar

September 18, 2024

Agenda

- Introduction
- General NHSN Release Overview
- Release Updates
- Hospital Respiratory Data (HRD) Initiative
- FHIR Implementation Updates
- Long Term Care Facility Component (LTC) AU Module
- Sex at Birth and Gender Identity
- SDOH: Race, Ethnicity, Language, Interpreter Needed
- AUR Module Updates
- NHSN Pre-Production Test Site (NPPT)
- Miscellaneous
- Q&A

Introduction

Andrea Benin

Mission of CDC's Division of Healthcare Quality Promotion (DHQP)

To protect patients; protect healthcare personnel; and promote safety, quality, and value in both national and international healthcare delivery systems.



Image by David Mark from Pixabay

NHSN FY2024 Priorities

- **NHSN Cloud Migration**
- **Fully Automated Digital Measures (FHIR)**
- **Terminology Modernization**
- **Expand NHSN's Health Equity Research Portfolio**
- **Antimicrobial Use and Resistance (AUR) Reporting**

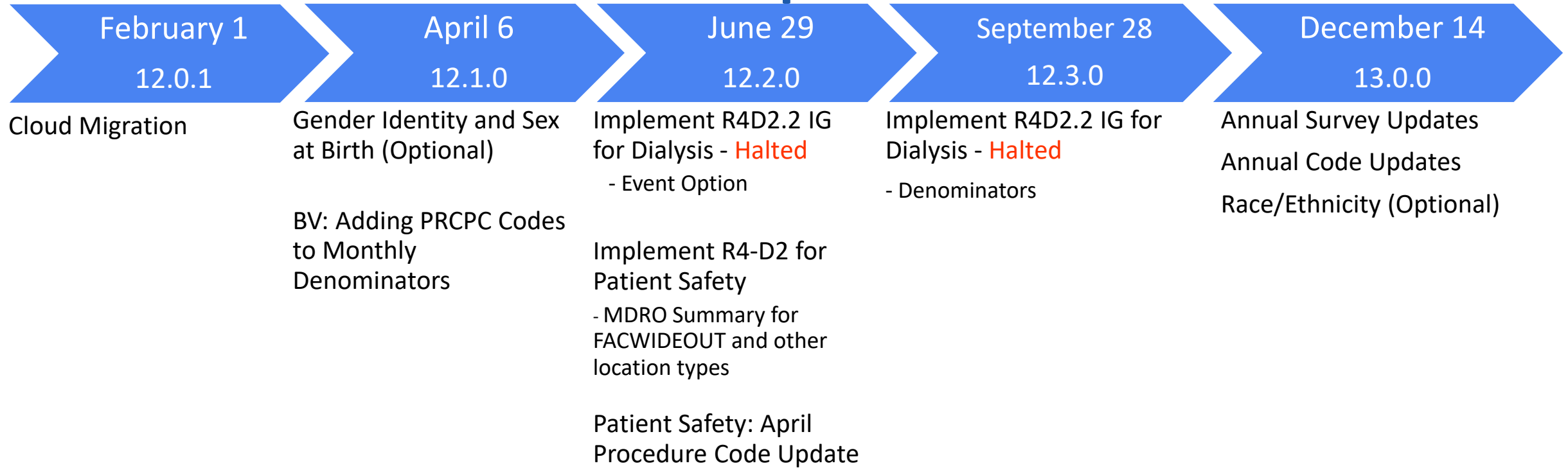
General NHSN Release Overview

Pamela Crayon

NHSN Release Schedule Overview

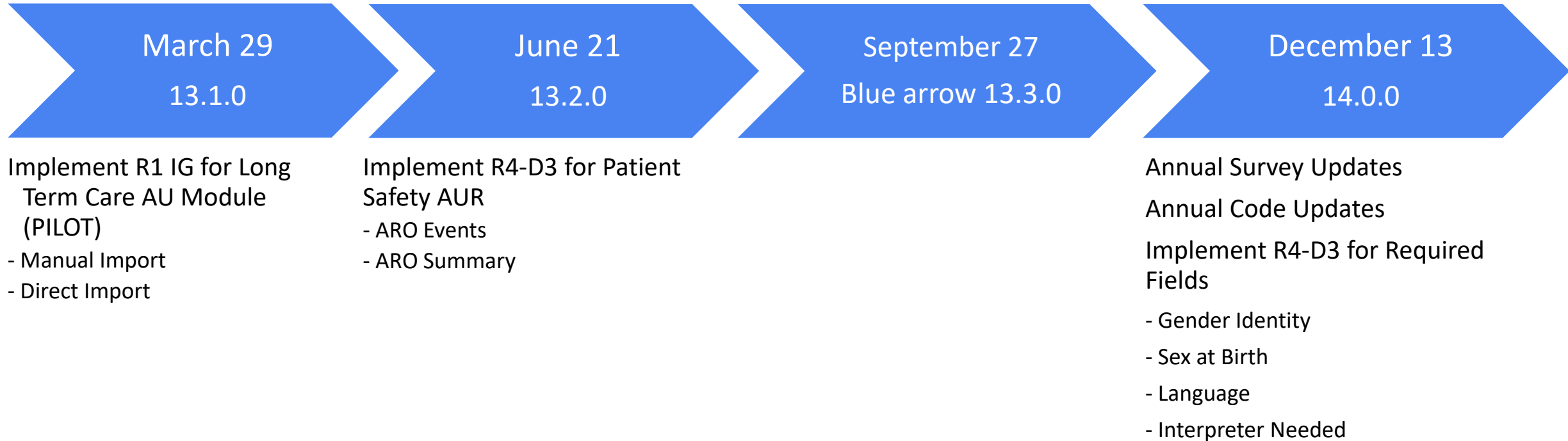
- **Annual release – major release at the end of the year**
 - Changes included:
 - Protocol changes
 - Transition to new CDA versions due to protocol changes
 - Effective January 1st of each year
- **Quarterly releases**
 - May include:
 - New Component/Module
 - Minor change requests
 - Defect resolutions
 - Infrastructure maintenance and support
 - Users notified via message alert when logging into NHSN
- **Monthly releases**
 - May include:
 - Minor change requests
 - Defect resolutions
 - Infrastructure maintenance and support

2024 NHSN Release Roadmap for Vendors



Starting in 2024, NHSN will be deploying CDA updates in the NPPT environment with the different releases to give the vendors time to develop and test throughout the year. The effective date in production will be January 1, 2025.

2025 NHSN Release Roadmap for Vendors



NHSN will be deploying CDA updates in the NPPT environment with the different releases to give the vendors time to develop and test throughout the year. The effective date in production will be January 1, 2026.

Release Updates

Hamna Baig

Release 12.1 – April 6, 2024

- **CR4634 (Dialysis):** The question/field "Access Used for Dialysis at the Time of the Event" will display as required for DIAL events dated 1/1/2025 and forward in the UI. This field will be available to send in the CDA effective **January 1, 2026.**

Release 12.2 – June 29, 2024

- **Implement R4D2.2 IG (**Halted** - Work will be completed with R4-D3 IG)**
 - DIAL: Event Option: CR4110 - Manual Import, CR4111 – Direct Import
- **MDRO Summary: Implement R4D2 IG for FACWIDEOUT and other Location Types**
 - Implemented R4-D2 IG version for PS: MDRO Summary for FACWIDEOUT and other location types.
- **Added additional 2024 Annual Procedure Codes: ICD-10/CPT Updates. The effective date for the 29 new codes is April 1, 2024.**

Hospital Respiratory Data (HRD)

Emily Witt

NHSN Hospital Respiratory Data

- **Beginning on November 1, 2024, the Centers for Medicare & Medicaid Services (CMS), in order to provide situational awareness of the impact of respiratory diseases, will require facilities to electronically report information via NHSN about COVID-19, influenza, and RSV.**
 - Reporting will include:
 - Hospital inpatient and ICU bed capacity and occupancy data, overall and by bed type (i.e., pediatric and adult)
 - Numbers of hospitalized patients with lab-confirmed COVID-19, Influenza, and RSV, by age group
 - Numbers of new hospital admissions of patient with lab-confirmed COVID-19, Influenza, and RSV, by age group
 - Hospital personal protective equipment (PPE) and supply information (optional)

Hospital Respiratory Data Webpage

- <https://www.cdc.gov/nhsn/psc/hospital-respiratory-reporting.html>
- Hospital Respiratory Data Form and Tables of Instructions – Weekly Reporting option
- Hospital Respiratory Data Form and Tables of Instructions – Daily Reporting option
- CSV Templates
- August 2024 Webinar Slides
 - Review for data element summary

The screenshot shows the NHSN website interface. At the top is a blue header with the CDC logo, the text "National Healthcare Safety Network (NHSN)", and a search bar. Below the header is a navigation menu with links: NHSN Home, NHSN Login, About NHSN, Enroll Facility Here, CMS Requirements, Change NHSN Facility Admin, Resources by Facility, Patient Safety Component, Nurse Staffing Hours Indicator, and Annual Surveys, Locations &. The main content area is titled "Hospital Respiratory Data" and includes a "Print" link. A text block states: "Beginning on November 1, 2024, in order to provide situational awareness of the impact of respiratory diseases, the Centers for Medicare & Medicaid Services (CMS) will require the following facility types to electronically report information via NHSN about COVID-19, influenza, and RSV:". Below this is a bulleted list of facility types: Acute Care Hospitals, Long-term Acute Care Hospitals, Critical Access Hospitals, Cancer Hospitals (PPS Exempt Cancer Hospitals), Children's Hospitals, Freestanding rehabilitation facilities, and Freestanding psychiatric facilities. On the right side, there is a grey box titled "Contact the NHSN Helpdesk:" with instructions to access the NHSN-ServiceNow portal at <https://ServiceDesk.cdc.gov/NHSNcsp> or email the NHSN Help Desk at NHSN@cdc.gov. It also notes to use "Hospital Respiratory Data" in the subject line or short description.

FHIR Implementation Updates

Amrit Kerr

HL7 NHSN digital Quality Measure (dQM) Implementation Guide (IG)

- Balloted HL7 IG (STU)
- Establishes a common framework for NHSN dQMs and standardizes requirements for reporting dQMs to NHSN
- Leverages existing standards (e.g., US Core, DEQM)
- Provides examples of dQMs that can be reported to NHSN (dQM specifications can be found the NHSN dQM “Content” IG)

<https://build.fhir.org/ig/HL7/nhsn-dqm/index.html>

NHSN dQM “Content” IG

- Derived from and complies with the HL7 NHSN dQM IG
- Unballoted, can be updated by NHSN at any time
- Home for actual NHSN measures and additional resources that need to change over time that do not require HL7 ballot

CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM)
1.0.0 - CI Build

IG Home Table of Contents Artifact Index Support

Table of Contents > NHSN Measures

CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM) - Local Development build (v1.0.0). See the Directory of published versions.

1 NHSN Measures

Official URL: <http://www.cdc.gov/nhsn/fhirportal/dqm/ig/ImplementationGuide/gov.cdc.nhsn.measures> Version: 1.0.0

Draft as of 2023-09-20 Computable Name: NHSNMeasures

1.1 Scope

This content describes the specifications for the for the Health Level Seven International® (HL7) Fast Healthcare Interoperability Resources® (FHIR) digital quality measures (dQMs) reported to the National Healthcare Safety Network (NHSN). The specifications are based on HL7 FHIR Release 4 (R4)¹, US Core 3.1.1 profiles², QI Core 4.1.1 profiles³, Quality Measure IG 3.0.0 profiles⁴, Clinical Quality Framework Common FHIR Assets 4.0.1 profiles⁵, Data Exchange for Quality Measures (DEQM) 3.1.0 profiles⁶, and NHSN reporting requirements.

Contents:

- Scope
- Purpose
- Description
- References

1.2 Purpose

These specifications define the data content requirements for submissions to NHSN through NHSNLink.

1.3 Description

These specifications are for the content contained within the encounters identified as meeting the criteria for the dQM Initial Population (IP). The dQM IP defines the cohort population for which NHSN analysts determine the denominator and calculate events per the metrics defined in each NHSN protocol. The IP can vary between dQMs and may include all inpatient, emergency department, and observation encounters. NHSNLink (or other compiling system) gathers the line-level data for calculating the NHSN metrics along with data needed for stratification, risk adjustment, or benchmarking once the encounter meets the criteria for the IP.

10.16.1.1 Formal Views of Profile Content

Description of Profiles, Differentials, Snapshots and how the different presentations work.

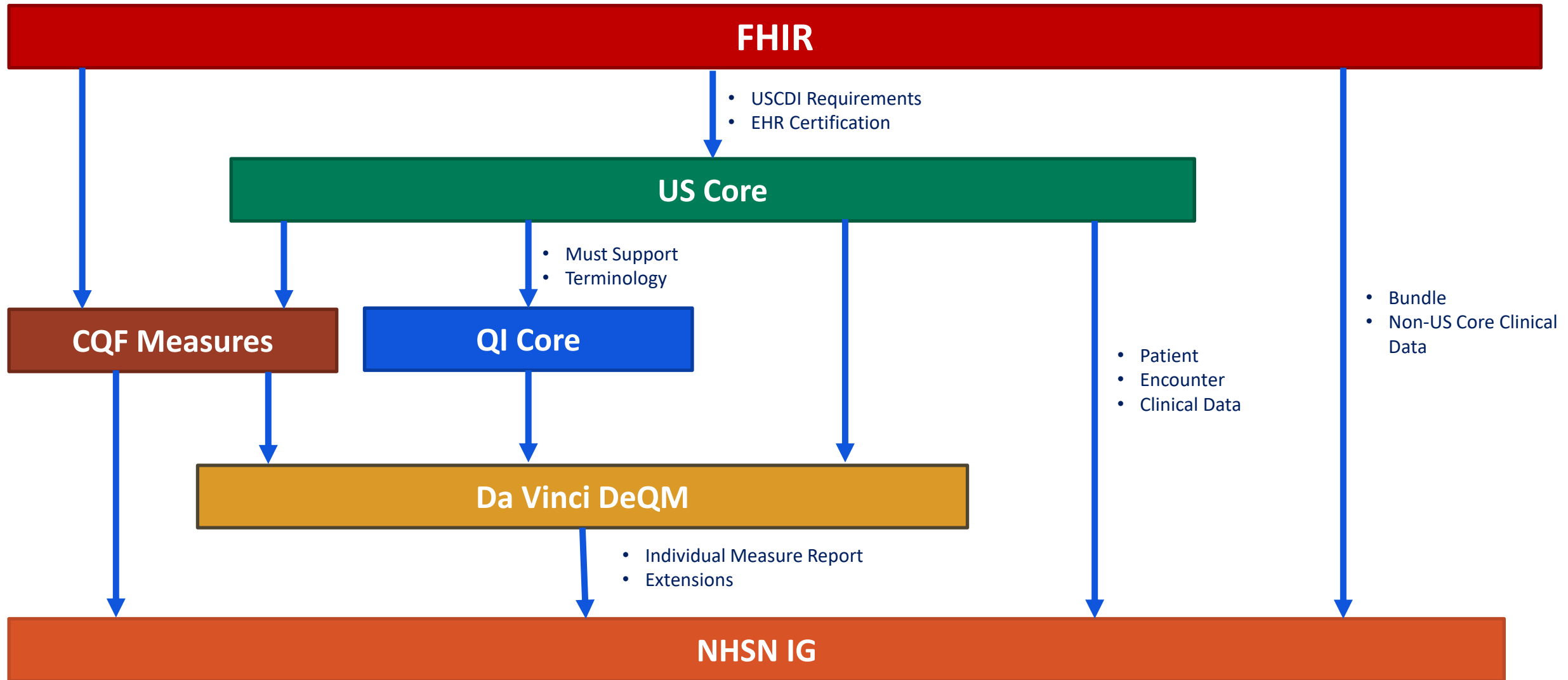
Differential Table Key Elements Table Snapshot Table Statistics/References All

This structure is derived from USCoreEncounterProfile

Name	Flags	Card.	Type	Description & Constraints
Encounter	C	0..*	USCoreEncounterProfile	An interaction during which services are provided to the patient encounter-ach-initial-population: Encounters: (class must be from ACH encounter class) or (type from 'Encounter Inpatient', 'Emergency Department Visit', or 'Observation Services') or (Encounter location type from 'Inpatient, Emergency, and Observation Locations')
id		1..1	id	Logical id of this artifact
meta				Content/Rules for all slices
link-received-date-extension		0..1	dateTime	Received Date URI: http://www.cdc.gov/nhsn/fhirportal/dqm/ig/StructureDefinition/link-received-date-extension
identifier		1..*	Identifier	Identifier(s) by which this encounter is known
use	S	0..1	code	usual official temp secondary old (if known)
type	S	0..1	CodeableConcept	Description of identifier
period	S	0..1	Period	Time period when id is/was valid for use
status	S	1..1	code	triaged in-progress finished onleave entered-in-error Binding: Acute Care Hospital Encounter Status ValueSet (required)
classHistory	S	0..*	BackboneElement	List of past encounter classes
period	S	1..1	Period	The start and end time of the encounter
diagnosis	S	0..*	BackboneElement	The list of diagnosis relevant to this encounter
use	S	0..1	CodeableConcept	Role that this diagnosis has within the encounter (e.g. admission, billing, discharge...)
rank	S	0..1	positiveInt	Ranking of the diagnosis (for each role type)
hospitalization	S	0..1	Reference(Location Organization)	The location/organization from which the patient came before admission
admitSource	S	0..1	CodeableConcept	From where patient was admitted (physician referral, transfer)
reAdmission	S	0..1	CodeableConcept	The type of hospital re-admission that has occurred (if any). If the value is absent, then this is not identified as a readmission. Binding: h7V5-re-admissionIndicator (preferred)
dietPreference	S	0..*	CodeableConcept	Diet preferences reported by the patient Binding: Diet (preferred)
dischargeDisposition	S	0..1	CodeableConcept	Category or kind of location after discharge Binding: DischargeDisposition (preferred)
location	S	1..*	BackboneElement	List of locations where the patient has been. Used in part to discern whether the patient is inpatient, Emergency and or Observation status.
status	S	0..1	code	planned active reserved completed
physicalType	S	0..1	CodeableConcept	The physical type of the location (usually the level in the location hierarchy - bed room ward etc.) Binding: LocationType (extensible)
period	S	1..1	Period	Time period during which the patient was present at the location

Documentation for this format

NHSN FHIR IG: Specifications – IG Relationships



Relationship between NHSN HL7 IG and Content IG

HL7 International National Healthcare Safety Network (NHSN) Digital Quality Measure (dQM) Implementation Guide 0.1.0-cibuild - Continuous Interoperability

IG Home Table of Contents Use Cases Artifact Index Support

Table of Contents > NHSN dQMs Home

National Healthcare Safety Network (NHSN) Digital Quality Measure (dQM) Implementation Guide, published by HL7 International / Public Health. This guide is not an authorized publication; it is the continuous build for version 0.1.0-cibuild built by the FHIR (HL7® FHIR® Standard) CI Build. This version is based on the current content of <https://github.com/HL7/nhsn-dqm/> and changes regularly. See the [Directory of published versions](#).

1 NHSN dQMs Home

Official URL: http://hl7.org/fhir/us/nhsn-dqm/ImplementationGuide/hl7.fhir.us.nhsn-dqm	Version: 0.1.0-cibuild
IG Standards status: Trial-use	Maturity Level: 1
	Computable Name: NHSNdQM

1.1 Overview

This implementation guide (IG) specifies standards for electronic submission of surveillance data to the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN). This is part of CDC's efforts to modernize public health reporting by using Health Level Seven International® (HL7) Fast Healthcare Interoperability Resources® (FHIR) data-exchange standards. This project builds on existing work, including the Quality Measure Implementation Guide and Data Exchange for Quality Measures Implementation Guide. This IG contains a library of FHIR profiles and example digital quality measures (dQMs) for reporting to NHSN.

Note that reporting dQM data to NHSN requires enrollment in NHSN, signing of NHSN data-use agreements, and completion of the dQM reporting plans, which are part of the NHSN participation process and are not defined by this specification. For an overview of NHSN and full information on NHSN participation requirements, see <http://www.cdc.gov/nhsn>. Provisions of the Public Health Service Act protect all data reported to NHSN from discovery through the Freedom of Information Act (FOIA).

- Overview
- Purpose
- Background
- Relationship to Other Standards
- Audience
- Scope Considerations
- Acknowledgements

1.2 Purpose

These specifications define the data-content requirements for submissions to NHSN directly from a facility or through an external dQM-evaluation engine.

1.3 Background

In alignment with CDC's Data Modernization Initiative, NHSN is implementing automated measures for public health surveillance via digital quality measures (dQMs). These dQMs were created to minimize the burden of reporting; improve the accuracy, quality, and validity of data collected by NHSN; and increase speed and efficiency of public health surveillance.

FHIR dQMs enable automated, patient-level data reporting, which minimizes long product cycles and provides access to crucial healthcare data. Additionally, facilities can implement FHIR dQMs in various information systems and healthcare settings, and across different electronic health record (EHR) vendors.

Content IG: Complies with the HL7 IG and contains actual measures and additional measure-specific constraints for validation. Can be updated on demand.

NHSN NATIONAL HEALTHCARE SAFETY NETWORK

CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM) 1.0.0 - CI Build

IG Home Table of Contents Artifact Index Support

Table of Contents > NHSN Measures

CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM) - Local Development build (v1.0.0). See the [Directory of published versions](#).

1 NHSN Measures

Official URL: http://www.cdc.gov/nhsn/fhir/report1/dqm/ig/ImplementationGuide/gov.cdc.nhsn-measures	Version: 1.0.0
Draft as of 2023-09-20	Computable Name: NHSNMeasures

1.1 Scope

This content describes the specifications for the for the Health Level Seven International® (HL7) Fast Healthcare Interoperability Resources® (FHIR) digital quality measures (dQMs) reported to the National Healthcare Safety Network (NHSN). The specifications are based on HL7 FHIR Release 4 (R4)¹, US Core 3.1.1 profiles², QI Core 4.1.1 profiles³, Quality Measure IG 3.0.0 profiles⁴, Clinical Quality Framework Common FHIR Assets 4.0.1 profiles⁵, Data Exchange for Quality Measures (DEQM) 3.1.0 profiles⁶, and NHSN reporting requirements.

- Scope
- Purpose
- Description
- References

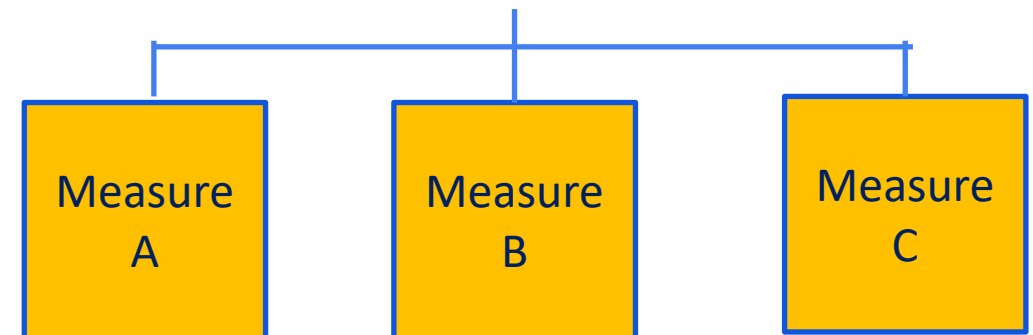
1.2 Purpose

These specifications define the data content requirements for submissions to NHSN through NHSNLink.

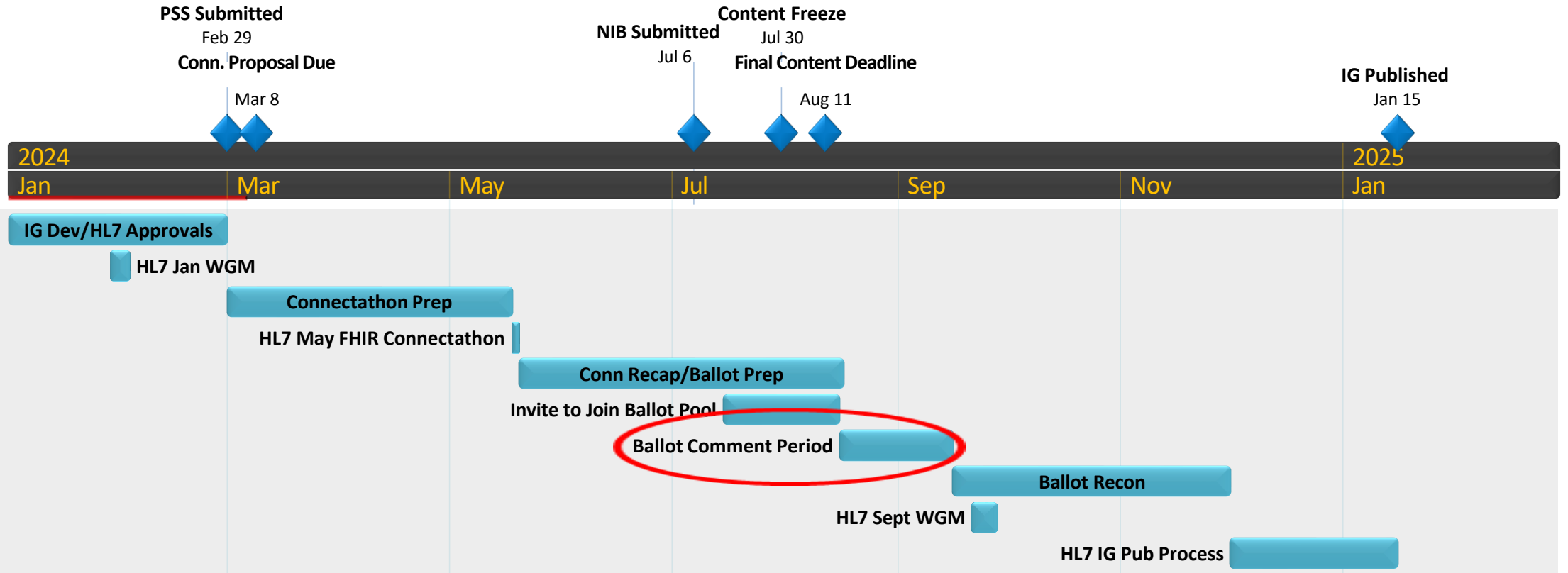
1.3 Description

These specifications are for the content contained within the encounters identified as meeting the criteria for the dQM Initial Population (IP). The dQM IP defines the cohort population for which NHSN analysts determine the denominator and calculate events per the metrics defined in each NHSN protocol. The IP can vary between dQMs and may include all inpatient, emergency department, and observation encounters. NHSNLink (or other compiling system) gathers the line-level data for calculating the NHSN metrics along with data needed for stratification, risk-adjustment, or benchmarking once the encounter meets the criteria for the IP.

HL7 IG: contains common profiles, value sets, and general requirements for reporting to NHSN. Requires HL7 ballot and publishing overhead (multi-year effort to change)



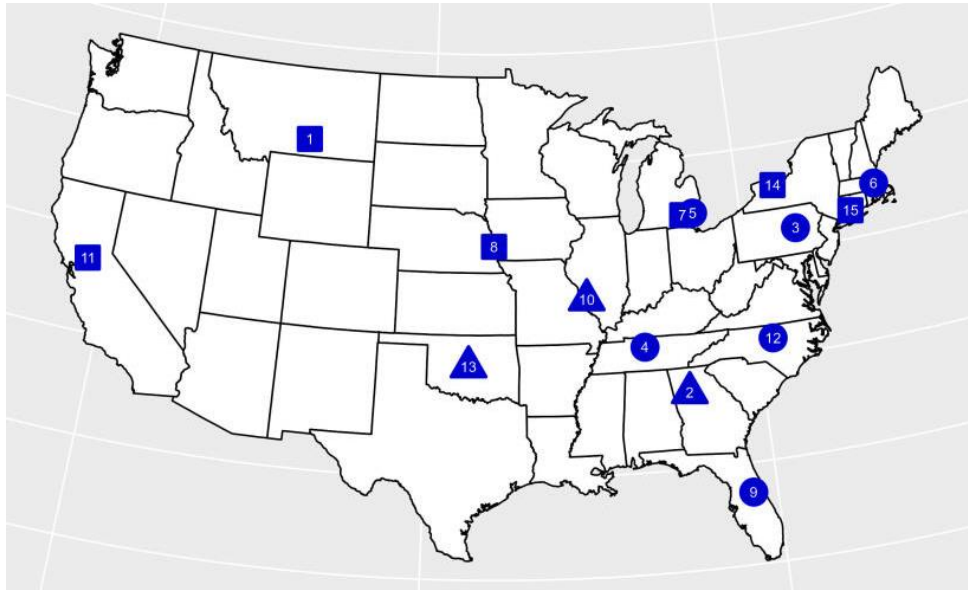
HL7 NHSN dQM IG Timeline



CDC NHSN dQM IG Ballot

NHSNCoLab

A formal, funded collaboration between NHSN and selected U.S. healthcare facilities to test, pilot, and validate new NHSN dQMs and data exchange approaches



- ▲ Pre-Alpha, Initiating work
- In Alpha (Sandbox)
- In Beta (Production)

No.	Partner Institution	EHR Vendor*
1	Billings Clinic	Oracle/Cerner
2	Children’s Healthcare of Atlanta	Epic
3	Geisinger	Epic
4	HCA Healthcare	Altera/Allscripts, Meditech Oracle/Cerner
5	Henry Ford Health	Epic
6	Mass General Brigham	Epic
7	Michigan Medicine	Epic
8	Nebraska Medicine	Epic
9	Orlando Health	Epic
10	SSM Health	Epic
11	Univ. of California, Davis Medical Center	Epic
12	Univ. of North Carolina Hospitals	Epic
13	Univ. of Oklahoma Health Sciences Center**	Epic
14	Univ. of Rochester Medical Center	Epic
15	Yale New Haven Health	Epic

*Does not imply endorsement by EHR vendor

**Natural language processing exploration to inform future FHIR dQM

NHSN FHIR dQMs in Development & Implementation



- Hyperglycemia
- Neonatal late-onset sepsis/meningitis
- Opioid-related harm
- Acute kidney injury
- Medication-related bleeding
- Antibiotic use
- Antibiotic-associated adverse events

- Respiratory pathogen surveillance
- Adult sepsis
- Healthcare-associated VTE

- Medication-related hypoglycemia
- Healthcare facility-onset, antibiotic-treated *Clostridioides difficile* infection
- Hospital-onset bacteremia and fungemia

- Medication-related hypoglycemia
- Healthcare facility-onset, antibiotic-treated *Clostridioides difficile* infection
- Hospital-onset bacteremia and fungemia

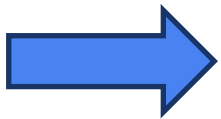
FHIR Resources & Data Elements: Example from the NHSN Glycemic Control Module

- Data will be collected for all inpatients with an **inpatient/ED/Observation encounter status or location** during the measurement period.
- The facility’s FHIR endpoint can expose only selected, pre-specified FHIR resources that are invoked upon permission from the facility’s server and data access can be controlled on a FHIR resource-by-resource basis.
- “All” indicates that all the data elements within that FHIR resource will be initially retrieved by NHSNLink from the EHR. “Selected” indicates that only selected data elements within that FHIR resource will be initially retrieved by NHSNLink from the EHR. Further filtering of data elements occurs during execution of the dQM logic.

FHIR Resource (Present in US Core Profile?)*	Data Elements
Condition (US Core)	All
Coverage	All
Encounter (US Core)	All
Location (US Core)	All
Medication (US Core)	All
MedicationAdministration	All
MedicationRequest (US Core)	All
Observation, Laboratory result (US Core)	Selected
Patient (US Core)	Selected
ServiceRequest	All
Specimen	All

FHIR Resources & Data Elements:

- NHSN dQMs will use mostly US Core FHIR Resources*
- Reporting of selected dQMs to NHSN will require non-US Core FHIR Resources, including MedicationAdministration



Vendors must work with their clients to enable reporting of the MedicationAdministration FHIR Resource

Long Term Care Facility Component (LTC) AU Module

Theresa Rowe

LTC AU Module

- **Elements similar to acute care reporting**
 - Resident-level characteristics, AU and census data
 - Will allow submission of antimicrobial orders or administrations
 - Clinical Document Architecture (CDA), no manual reporting
 - Monthly submission
- **HL7 Balloted Implementation Guide has been published**
- **Pilot opportunities open Q1 2025**
- **Anticipated public release Q2 2025**

Sex At Birth and Gender Identity

Jennifer Watkins

Gender field - 2025

- **REQUIRED** field for 2025
- **Gender**
 - Single selection
 - Male, Female, Other
- **Select the gender of the patient**

Sex at Birth - 2025

- **OPTIONAL** field for 2025
- **Sex at Birth**
 - Single selection
 - Male, Female, Unknown
- **Select the patient's sex assigned at birth**

Gender Identity - 2025

- **OPTIONAL** field for 2025
- **Gender Identity**
 - Multiple selection, except when selecting "Asked but unknown"
 - Male
 - Female
 - Male-to-female transgender
 - Female-to-male transgender
 - Identifies as non-conforming
 - Other
 - Asked but unknown
- **Specify the gender identity/identities which most closely matches how the patient self-identifies.**

Updates for 2026

- **Sex at Birth and Gender identity will be REQUIRED fields in 2026**
- **Gender field will be RETIRED in 2026**

Social Determinant of Health (SDOH): Race, Ethnicity, Language, and Interpreter Needed (REaLI)

Henrietta Smith

SDOH Updates for 2025

Optional reporting

1. Race field

- Add Middle Eastern or North African (MENA) as a selection to the value set
- Add 'Declined to Respond' & 'Unknown' as selections to the value set (for UI & CSV)
- Multi-select
- Effective date 1/1/2025

2. Ethnicity field

- Add 'Declined to Respond' & 'Unknown' to the value set (for UI & CSV)
- Single select
- Effective date 1/1/2025

3. Interpreter Needed field

- Tentative release date 6/2025

4. Language field

- Tentative release date 6/2025
- Preferred language
- Single select
- Language list posted at <https://www.cdc.gov/nhsn/pdfs/NHSN-Abridged-Primary-Language-List.xlsx>

2025 Updates for Form

Page 1 of 4		
*required for saving **required for completion		
Facility ID:	Event #:	
*Patient ID:	Social Security #:	
Secondary ID:	Medicare #:	
Patient Name, Last:	First:	Middle:
*Gender: F M Other	*Date of Birth:	
Sex at Birth: F M Unknown	Gender Identity (Specify):	
Ethnicity (Specify): Hispanic or Latino or Not Hispanic or Not Latino Declined to respond Unknown	Race (Specify): American Indian or Alaska Native Asian Black or African American Middle Eastern or North African Native Hawaiian or Other Pacific Islander White Declined to respond Unknown	
Language: (Specify from the list provided) Declined to respond Unknown Other	Interpreter Needed: Yes No Declined to respond Unknown	
*Event Type: PNEU	*Date of Event:	
Post-procedure PNEU: Yes No	Date of Procedure:	
NHSN Procedure Code:	ICD-10-PCS or CPT Procedure Code:	

Included on the language list

2025 Updates for Table of Instruction, page 1 of 2

Data Field	Instructions for Data Collection
Ethnicity	<p>Optional. Specify if the patient is either Hispanic or Latino or Not Hispanic or Not Latino; otherwise select, Declined to respond* Unknown*</p> <p>Note: *Select 'Declined to respond' and 'Unknown' in the rare circumstance when the patient is non-communicative and/or access to this information is not available.</p>
Race	<p>Optional. Specify one or more of the choices below to identify the patient's race:</p> <p>American Indian or Alaska Native (1002-5) Asian (2028-9) Black or African American (2054-5) Middle Eastern or North African (2118-8) Native Hawaiian or Other Pacific Islander (2076-8) White (2106-3)</p> <p>Declined to respond* Unknown*</p> <p>Note: *Select 'Declined to respond' and 'Unknown' in the rare circumstance when the patient is non-communicative and/or access to this information is not available.</p>

2025 Updates for Table of Instruction, page 2 of 2

Data Field	Instructions for Data Collection
<p>Language</p> <div style="border: 2px solid black; padding: 5px; margin-top: 10px;"> <p>Included on the language list</p> </div>	<p>Optional. Specify the patient’s preferred language from the NHSN abridged primary language list available at https://www.cdc.gov/nhsn/pdfs/NHSN-Abridged-Primary-Language-List.xlsx.</p> <p>Declined to respond* Unknown* Other**</p> <p>Note: *Select ‘Declined to respond’ and ‘Unknown’ in the rare circumstance when the patient is non-communicative and/or access to this information is not available. **Select ‘Other’ when patient’s preferred language is not listed on the NHSN abridged primary language and submit language to NHSN.</p>
<p>Interpreter Needed</p>	<p>Optional. Select YES, if an interpreter is needed to communicate with the patient in their preferred language; otherwise, select NO.</p> <p>Declined to respond* Unknown*</p> <p>Note: *Select ‘Declined to respond’ and ‘Unknown’ in the rare circumstance when the patient is non-communicative and/or access to this information is not available.</p>

SDOH Updates for 2026

All fields will become required, effective 1/1/2026

- 1. Race and Ethnicity fields**
 - Add 'Decline to Respond' & 'Unknown' as selections to the value set (for CDA)
- 2. Interpreter Need**
- 3. Language**

AUR Module Updates: Upcoming Releases – Release 12.3

Stephanie Sutton

Update AR Event to apply schema validations

- **Identified MIC values included in R3 AR Event files that violate schema rules (e.g., “NR”)**
 - File is passing into NHSN production despite schema errors shown in the Lantana validator
- **Fix will enforce schema validation on R3 AR Event files and cause nonconformant files to fail to upload into NHSN**

AUR Module 2025 Changes – Release 13.0

Stephanie Sutton

Update to AU Option Drugs

- **Effective January 1, 2025**
- **Add:**
 - Cefepime/Enmetazobactam
 - Ceftobiprole Medocaril
 - Pivmecillinam
- **Remove:**
 - Chloramphenicol

Update to AR Option Pathogens

- **Effective January 1, 2025**
- **Plan to:**
 - Add Group A *Streptococcus*
 - Expanding to genus (and all species codes)
 - *Candida*
 - *Citrobacter*
 - *Klebsiella*
 - *Proteus*
- Plan to refresh Pathogen Roll-up Workbook

Update to AR Option Specimen Types

- **Effective January 1, 2025**
- Plan to add new specimen sources:
 - Skin
 - Soft tissue
 - Wound
 - Musculoskeletal
- Add indwelling catheter specimen back to the list
- Working on value set

AR Drug Panel

- **Effective January 1, 2025**
- Drug panels updated to reflect CLSI testing recommendations
- Group A strep will share a panel with Group B strep
- Add *Pseudomonas aeruginosa* urine panel
- *Candida* isolates can be reported without AST



Protocol updates not affecting CDA files

- **Denominators:**

- Admissions: definition clarified to match AU Option
- Encounter definition clarified: A visit to an eligible outpatient location counts as a single encounter. The patient can **contribute an encounter as soon as they have had an initial interaction with a medical professional (for example, the beginning of triage)**. The patient can contribute an encounter regardless of whether the patient is placed in a bed.

Protocol updates not affecting CDA files continued

- Admission status:
 - Updated admission status (no) text to include reference to transfer to another facility: Report False (No) if the specimen was collected in an outpatient location and the **patient was transferred to another facility** or discharged and did not return to an inpatient location within 24 hours.

R4-D3 Delay

Virgie Fields

Update AR CDAs to use R4-D3 IG

- **AR Summary and AR Event will be updated to use R4-D3 IG effective June 2025.**
 - AU Summary is no longer moving to R4-D3, will continue to use R6 and R1.
- **AR Event is the only CDA with major changes.**
 - Due to inclusion in the CMS PI Program, ONC* has asked that AR CDAs use the same IG version, so we are additionally updating AR Summary to R4-D3.
- **R4-D3 IG will be published on the HL7 website later this year.**
- **Plan to implement in 13.2 June release to allow for testing.**

R4-D3 AR Summary Updates

- **No major updates when moving to R4-D3**
- **May have templateID updates**

R4-D3 AR Event Updates

- **May have templateID updates**
- **Removing *Staph aureus*-specific requirement for PCR mec and PBP2a tests**
- **Adding section for gene identification tests**
 - Requests for reporting rapid molecular detection of antimicrobial resistance markers
 - Working on value set currently (~30 terms)
 - Will use LOINC terms
 - Examples: Bacterial carbapenem resistance blaKPC gene, Bacterial carbapenem resistance blaNDM gene, Bacterial carbapenem resistance blaIMP gene

R4-D3 AR Event Updates – Rapid Molecular Detection of Antimicrobial Resistance Markers

- **Molecular test will be included in the AR Event CDA file if conducted**
 - Will not be tied to specific organisms (e.g., *S. aureus* for mecA gene)
 - Include as many molecular tests as were conducted by the lab
- **Result value set using Snomed:**
 - Detected
 - Not detected
 - Indeterminate
 - Invalid
 - NA = No discrete data available

Plan to accept R3 & R4-D3 for 2025

- For 2025 AR Option reporting, you will be able to use either the R3 (current IG) or the R4-D3 IG.
- Rapid molecular detection of antimicrobial resistance markers results cannot be reported if using the R3 IG.

AUR Module Updates: AR and AU Synthetic Data Set

Amy Webb

AU SDS Release 5.0

- **AU SDS v5.0 now available**
- **Includes changes to bring the dataset up to current standards**
 - Uses 2023 dates, required drugs/codes, and updates to the admissions counting logic to match AR SDS
- **Vendors are expected to revalidate using AU SDS v5.0 prior to March 2025**
 - Any AU file for March 2025 and forward will fail to upload without an updated AU SDS Validation ID

AR SDS Release 1.6

- Working on pilot testing now
- Re-validation with AR SDS 1.6 will be optional
- Includes updated dim_wardmapping to test transfers to ineligible inpatient locations

SDS web service links

- **AU SDS:**

- <https://nhsnpilot.ng.techlab.cdc.gov/AUValidation-Production/home.html>

- **AR Event SDS:**

- <https://nhsnpilot.ng.techlab.cdc.gov/ARValidation-Numerator/home.html>

- **AR Denominator SDS:**

- <https://nhsnpilot.ng.techlab.cdc.gov/ARValidation-Denominator/home.html>

AUR Module Updates: CMS Promoting Interoperability (PI) Program Requirement

Amy Webb

AUR Module data are required in CY 2024

- **Beginning in CY 2024, AUR Module data are required under the Public Health and Clinical Data Exchange Objective of the CMS PI Program**
- **Applies to eligible hospitals and critical access hospitals that participate in the CMS PI Program**
- **Measure includes submission of both AU and AR Option data**
- **For CY 2024 facilities attest to either:**
 - Being in active engagement with NHSN to submit AUR data or,
 - Claim an applicable exclusion

Two ways to be in active engagement with NHSN

- **Option 1 – Pre-production and validation**
 - Registration within NHSN
 - Working on testing & validation of the CDA files
- **Option 2 – Validated data production**
 - Registration within NHSN
 - Submitting production AU & AR files to NHSN
 - CY 2024 – 180 continuous days of AUR data submission
 - Also known as: EHR Reporting Period

Production data must be submitted by January 31, 2025

- Facilities should report monthly during their EHR Reporting Period
- NHSN automatically sends out status letters on the first day of every month
- Final annual summary letter sent out on February 1 showing previous year's submissions
 - Submit all relevant AUR data to NHSN no later than January 31, 2025, to be included on the annual report sent to facilities on February 1

Month/Year	Antimicrobial Use Summary	Antimicrobial Resistance Events	Antimicrobial Resistance Summary
01/2022	Yes	Yes	Yes
02/2022	Yes	Yes	Yes
03/2022	Yes	Yes	Yes

CY 2025 PI Program requirements

- **AUR Surveillance measure will be split into two separate measures: AU Surveillance & AR Surveillance.**
 - Hospitals must be in active engagement to report AU and AR or have an eligible exclusion for **each** measure.
 - Specifically, an exclusion for AR will not longer qualify as a reason not to report AU.

CY 2025 PI Program requirements (continued)

- **Exclusions have now been separated & a new exclusion has been added to each measure**
- **AU Exclusions**
 - Does not have any patients in any patient care location for which data are collected by NHSN during the EHR reporting period
 - Does not have an eMAR/BCMA electronic records or an electronic ADT system during the EHR reporting period
 - **(New) Does not have a data source containing the minimal discrete data elements that are required for reporting**

CY 2025 PI Program requirements (continued)

- **AR Exclusions**

- Does not have any patients in any patient care location for which data are collected by NHSN during the EHR reporting period
- Does not have an electronic LIS or electronic ADT system during the EHR reporting period
- **(New) Does not have a data source containing the minimal discrete data elements that are required for reporting**

- **Important note: In the 2025 AUR Module protocol, Candida isolates without susceptibility testing become eligible for reporting. Therefore, not having susceptibility data for Candida isolates will no longer qualify for an exclusion.**

CY 2025 PI Program requirements (continued)

- **CMS will consider AU Surveillance and AR Surveillance new measures for CY 2025**
 - Hospitals can remain in Option 1 – Pre-production and validation for CY 2025 before moving to Option 2 – Validated data production for CY 2026

We still need your help! AUR test files

- **Please help facilities find the files they can use for this step**
 - Test files
 - Production files
- **Make sure facilities know where each file type can be generated within your software**
 - Facilities often miss AR Summary files or location-specific AU files
- **Include display names and comments if possible**

We need your help! Admission Status Outreach

- **Earlier this summer, we conducted outreach for Admission Status reported within AR Event**
 - Some facilities incorrectly assigned admission status = “False”
 - Admission status = “False” should only be reported if specimen was collected in an outpatient location and the patient was discharged or transferred to another facility and did not return within 24 hours
- **Biases the national inpatient antimicrobial resistance estimates**
- **Review your software logic**
 - Correct if needed
 - Ask that facilities re-upload AR Events by **October 31, 2024**

AUR-specific PI Program resources

- <https://www.cdc.gov/nhsn/cms/ach.html>

Antimicrobial Use and Resistance

[Operational Guidance for reporting AUR data – August 2023](#)  [PDF – 239 KB]

[AUR Module Reporting for the CMS Promoting Interoperability Program – March 2024](#)

[YouTube](#)

[Slide set](#)  [PDF – 3 MB]

[Slide set – En Español](#)  [PDF – 2 MB] – March 2023

[FAQs: AUR Reporting for the CMS Promoting Interoperability Program – July 2024](#)

[Promoting Interoperability – Guidance for Facilities – March 2023](#)  [PDF – 250 KB]

[Promoting Interoperability – Guidance for Facilities – March 2023 – En Español](#)  [PDF – 358 KB]

[Office Hours: AUR Module Reporting for the CMS Promoting Interoperability Program – Spring 2024](#)  [PDF – 1 MB]

NHSN Pre-Production Test Site (NPPT)

Hamna Baig

NHSN Pre-Production Test Site

- **Copy of the NHSN development environment**
- **Includes Analysis and Reporting (A&R) functionality**
- **Does not include DIRECT CDA Automation or Groups**
- **No SAMS credentials required**
- **To enroll:**
 - Complete form found at <https://www.cdc.gov/nhsn/cdaportal/datavalidation/toolsandtestsites.html>.
 - Send completed form to the nhsncda@cdc.gov mailbox.



NHSN Pre-Production Test Site (NPPT) cont.

- **V12.2.1 is current environment**
 - Reminder: Read “Important Message” at login
- **Blast email will be sent out when NPPT is upgraded to new version**
- **Report any issues you find to the nhsncda@cdc.gov mailbox**

Miscellaneous

Sylvia Shuler

CDA Mailbox moves to ServiceNow

- **You can still email NHSNCDA@cdc.gov and NHSN@cdc.gov**
 - No need to have SAMS access to create a ticket within ServiceNow
- **Response will come from cdcservicedesk@cdc.gov**
 - Make sure this email address will not be blocked
- **Make sure to add NHSNCDA@cdc.gov or NHSN@cdc.gov in the To line**
 - ServiceNow does **not** generate a ticket if the mailbox is in the CC line

DIRECT CDA Automation Updates

- **~77 direct addresses and > 9,500 facilities sending via DIRECT**
- **DIRECT**
 - Batch submission process
 - No immediate reply
 - Turnaround time based on volume of messages in the queue
- **New to implement DIRECT?**
 - DIRECT toolkit on the NHSN website
<http://www.cdc.gov/nhsn/cdaportal/importingdata.html#DIRECTProtocol>
 - Contact NHSNCDA@cdc.gov for any questions or to set up an onboarding discussion

CDA Version Support

- **CDA support:**
<https://www.cdc.gov/nhsn/cdaportal/index.html>
- **Toolkits:**
<https://www.cdc.gov/nhsn/cdaportal/toolkits.html>
- **Guide to CDA versions:**
<https://www.cdc.gov/nhsn/cdaportal/toolkits/guidetocdaversions.html>

Guide to CDA Versions

[Print](#)

For creating CDA files, please see the specific Implementation Guide (IG) and its associated reference materials.

The table below describes the specific Implementation Guide (IG) to be used for each component based on the event/insertion/procedure/specimen collection dates (as applicable) for each year.

Download the corresponding CDA Toolkits for the corresponding year.

Events or Denominators	2024	2023	2022	2021
CDA Toolkit Release	12.1	11.1	10.1	9.5 & 10.0
DIALYSIS				
Dialysis Event	R3-D4	R3-D4	R3-D4	R3-D4
Dialysis Denominator	R3-D3	R3-D3	R3-D3	R3-D3
EVENTS				
Primary Bloodstream Infection (BSI)	R4-D1	R4-D1	R3-D3	R3-D3

CDA Version Support (continued)

- Implementers can also use the HL7 GitHub website for latest IG Guides
- HL7 GitHub site (<https://github.com/HL7/cda-hai>) also includes:
 - XML
 - Related files
 - Schematron
 - CDA Schema
 - Samples
 - Stylesheet

Helpful NHSN Resources



- NHSN Newsletter: <https://www.cdc.gov/nhsn/newsletters/index.html>
- Release Notes and Communication Updates: <https://www.cdc.gov/nhsn/commup/index.html>
- CDA Webinars: <https://www.cdc.gov/nhsn/cdaportal/webinars.html>

NHSN Reminders

- **Welcome feedback**
- **Offer individual vendor conference calls**
- **Make sure you are on the NHSNCDA email distribution list**
- **Visit the CDA Submission Support Portal (CSSP):**
<https://www.cdc.gov/nhsn/cdaportal/index.html>



CDA Submission Support Portal (CSSP)

Toolkits, FAQs, webinars and resources for testing and validation for CDA implementers.

Additional Vendor Engagement Opportunities

- **1-1 meetings with NHSN**
 - Opportunity to ask questions, receive updates, and dive deeper into discussions around specific topics
 - Send a request to NHSNCDA@cdc.gov to schedule
- **Additional training options and communication channels coming soon!**

Thank you!
Questions?

NHSNCDA@cdc.gov

For more information, contact CDC
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

