



NHSN Bacteremia and Fungemia Module

March 19, 2026

Objectives

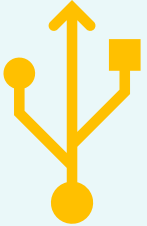
- By the end of this presentation, participants will be able to:
 - Describe the purpose and structure of NHSN Digital Measures.
 - Explain the criteria and process for Bacteremia and Fungemia event determination.
 - Outline the NHSN data pipeline and interpret Analysis & Reporting (A&R) outputs.

Chat and Q & A features are limited to only 1000 participants



NHSN Digital Measures

Vision: A Hands-Free Future for Reduced Burden



Current State: Electronic

- Electronic data flows to NHSN via HL7 CDA payloads via APIs or uploads.
- NHSN also allows for manual webform data entry.

Near Future: Fully Automated

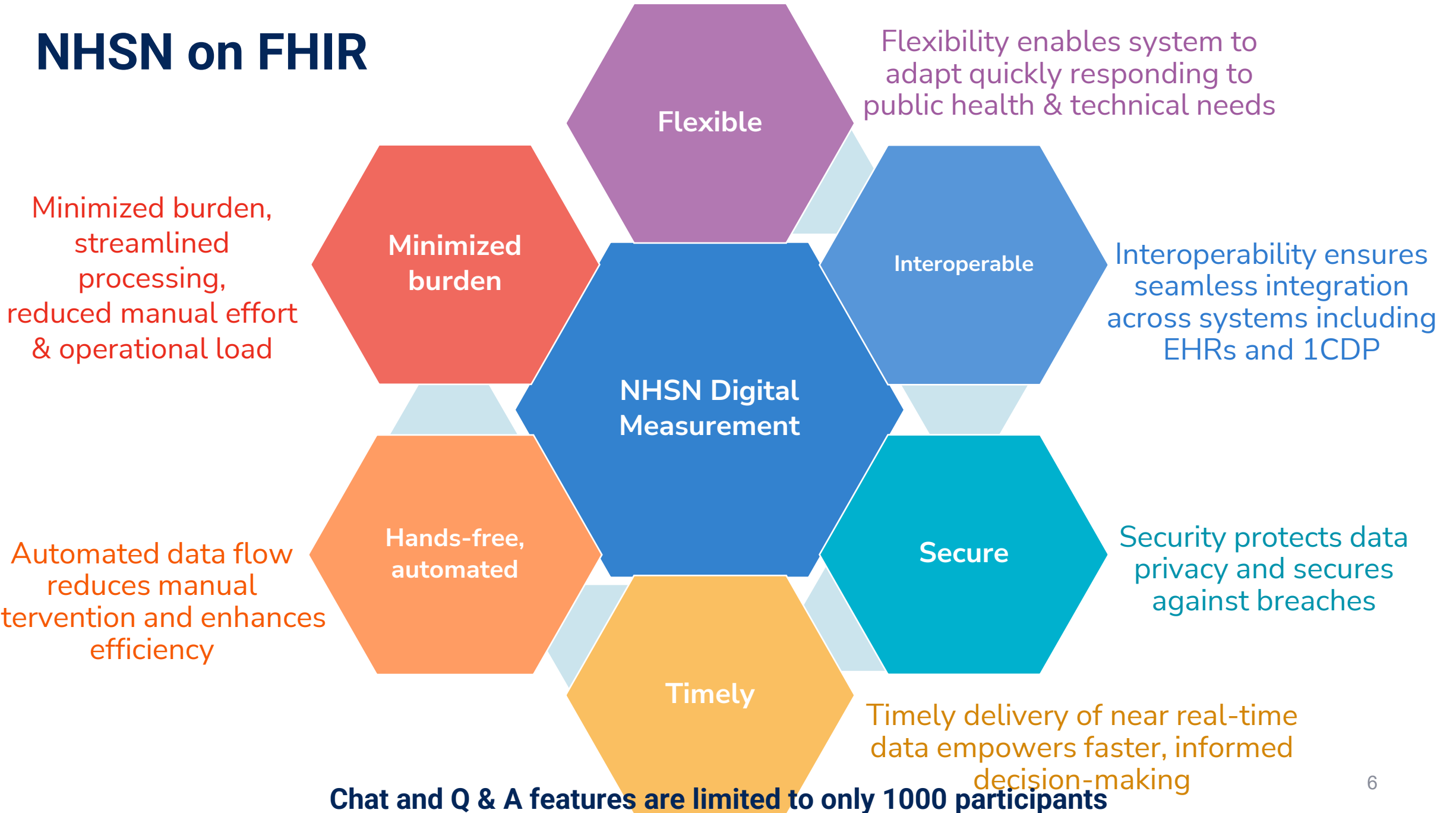
- Electronic data flows automatically, hands-free to NHSN via FHIR APIs using USCDI defined data elements and HL7 NHSN FHIR Implementation Guides.
- CDA and webform entry still supported for certain circumstances.



What is HL7 FHIR ?

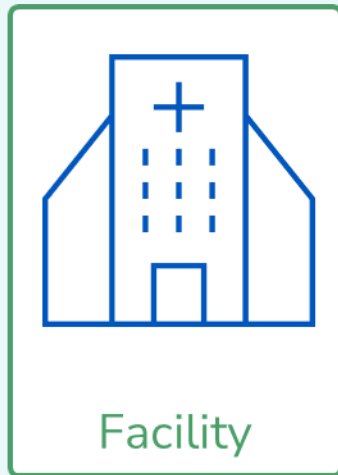
- HL7 FHIR (*Fast Healthcare Interoperability Resources*) is a national standard for sharing healthcare data.
- It defines what data is sent (e.g., labs, devices, encounters) and how it is structured.
- Think of it as a common language that different hospital systems and public health agencies can all understand.

NHSN on FHIR

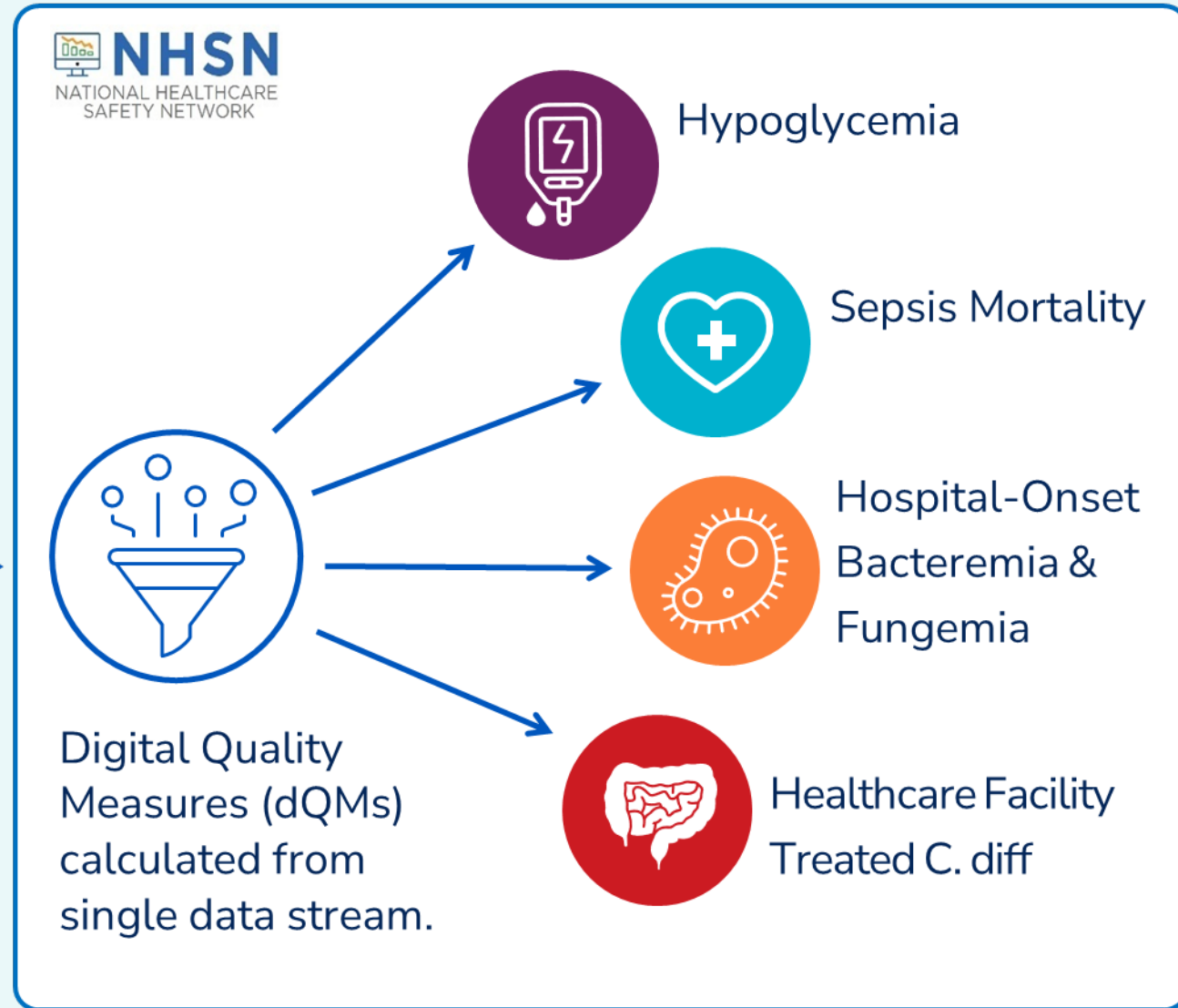


The NHSN Pipeline

One single data-stream to capture all hospital data



One touchless data stream is transmitted monthly via FHIR (patient-level)



Chat and Q & A features are limited to only 1000 participants

NHSN is Connected to 15 Pilot Sites & Receiving FHIR Data for Patient Safety and Healthcare Accountability

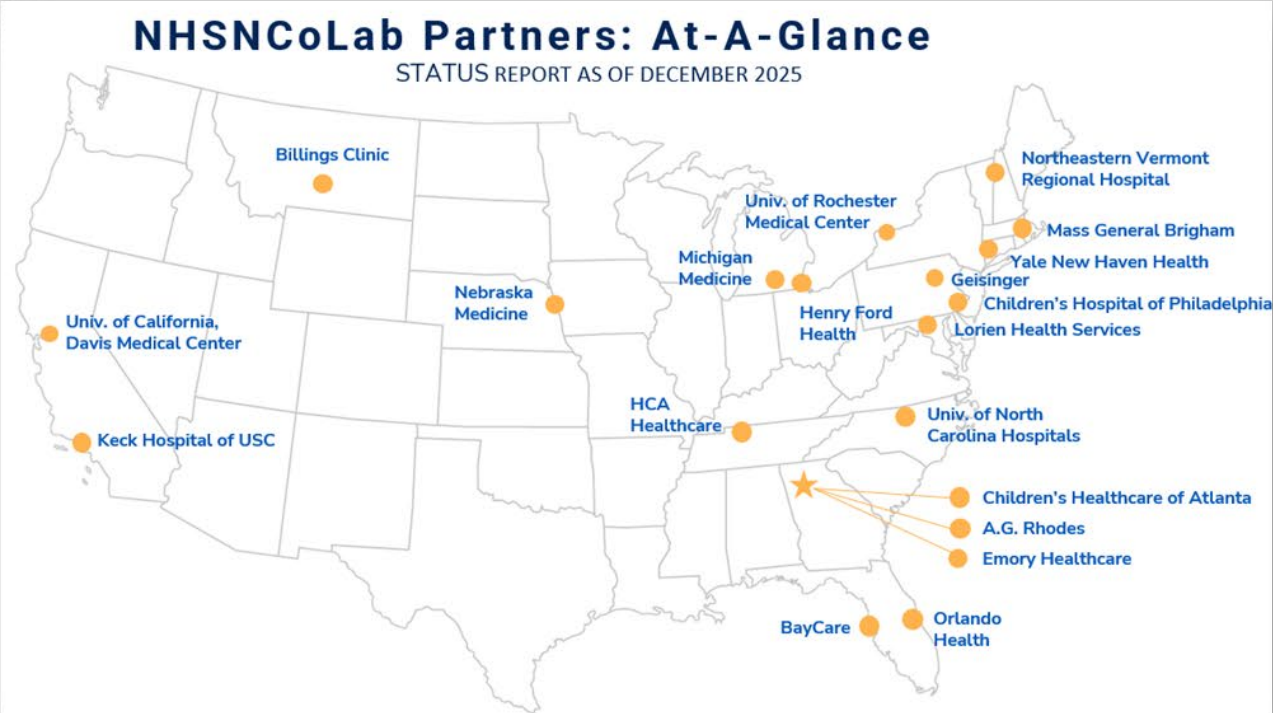
NHSN on FHIR, Measuring What Matters to Patients

Sepsis Mortality: 350,000 people die each year from sepsis.

Severe Hypoglycemia: 2–5% of hospitalized patients with diabetes experience this serious preventable event.

Hospital-Onset Bacteremia & Fungemia: >100,000 episodes with >15,000 annual deaths.

C. difficile: >200,000 Healthcare-associated infections with >16,000 annual in-hospital deaths.



NHSN Digital Quality Measures: Overview

What They Are

- **For the facility:**
 - **Monthly quality-improvement** insights (e.g., HAIs, Sepsis, Glycemic Control, ADEs)
 - **Daily surveillance** insights (e.g., RPS)
- **For vendors:**
 - **HL7 standards-driven data exchange**
 - Reported via **FHIR** and **expressed in CQL**
 - Supported by **FHIR Implementation Guides**
- **For the nation:**
 - **Standardized** healthcare event surveillance
 - **National** healthcare event **benchmarks**

What They're Not

- Bedside tools to guide clinical decision-making (e.g., CDS)
- EHR-based, provider-generated reports for direct reporting
 - However, EHRs can use the measure logic to provide in-line feedback.
- Real-time reports of patient-safety events
 - While real-time surveillance is possible with dQMs, NHSN is not currently focused on that for the first phase.

hl7.org/fhir/us/nhsn-dqm/2024Sep/index
www.cdc.gov/nhsn/fhirportal/dqm/ig

NHSN FHIR Digital Quality Measures: Rationale

Data “Pull” via FHIR APIs:
Reduce Data Latency

Connectivity is established with flexible, secure integration

Aligns with facility’s data-sharing security/privacy framework (i.e., share only what is “exposed”)

Scope and logic of measures are controlled centrally and easier to update (e.g., for new measures or during public health emergencies)

Single Data Stream for Multiple Measures: Increase Data Parsimony

Data are extracted once, used many times across multiple measures

Minimizes burden of reporting, increases efficiency of surveillance

Reduces data duplication and re-collection for data analytics

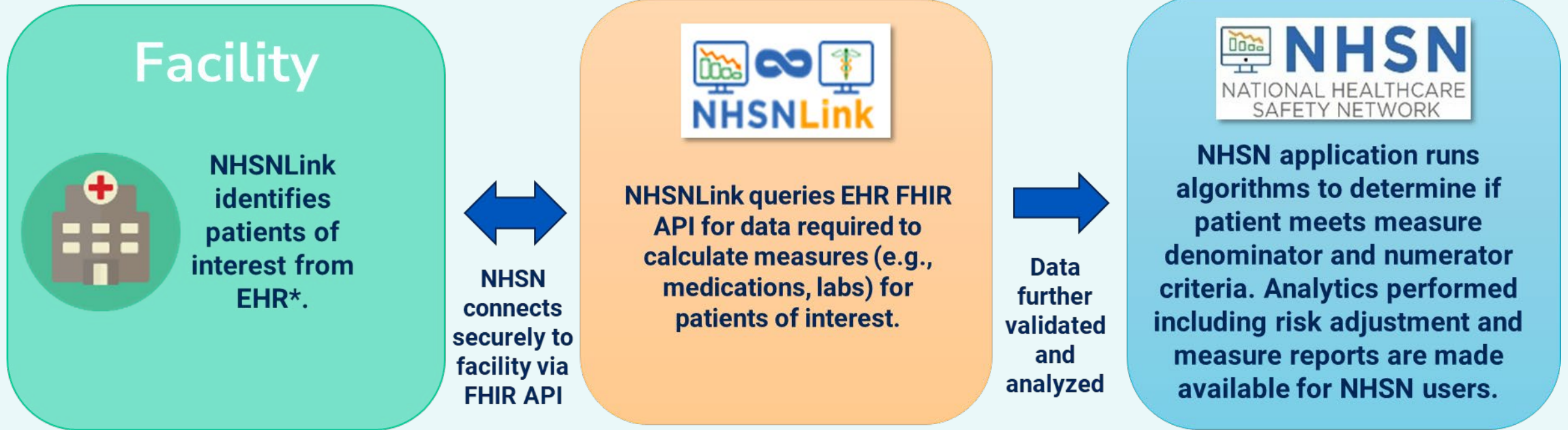
Centralized Measure Calculations by NHSN: Reduce Data Variability

Minimizes variability and subjectivity in interpretation of protocols and measure logic

Minimizes burden on facility and vendor to implement the measure and logic

Permits scalability across many sites

NHSNLink: Data Flow from EHR to NHSN



*Patients in emergency department, observation, and inpatient locations



NHSN FHIR Implementation Guides

From EHR to HL7 FHIR

Example Data in EHR

LAB RESULTS	
	6/25/2025 0935
Blood Culture	E. coli

MEDICATION ORDERED		
Medication	Route	Date
Cefepime	IV	6/25/2025

Standard Data Structure on Facility FHIR Server

FHIR Observation

Date

Lab Test

Result

FHIR MedRequest

Date

Medication

Route

FHIR Observation

6/25/2025

Blood Cx

E. coli

FHIR MedRequest

6/25/2025

Cefepime

IV

Chat and Q & A features are limited to only 1000 participants

NHSN Requested FHIR Resources

Condition Encounter Diagnosis (QI Core)

Detailed information about conditions, problems, or diagnosis.

Coverage (QI Core)

Describes self-pay or insurance plan coverage details

Device (QI Core)

A manufactured item used in patient care, medical or non-medical.

Diagnostic Report Profile for Laboratory Results Reporting (QI Core)

A laboratory report that organizes and references test result Observations for a patient

Diagnostic Report Profile for Report and Note Exchange (QI Core)

A diagnostic report is the set of information such as results, text reports, images, and codes.

Encounter (QI Core)

An interaction between a patient and healthcare provider(s) for the purpose of providing healthcare service(s) or assessing the health status of a patient.

Laboratory Results Observation (QI Core)

Each Observation resource represents an individual laboratory test and result value

Location (QI Core)

Location associated with a patient, provider or organization.

Medication (QI Core)

Primarily used for the identification and definition of a medication for the purposes of prescribing, dispensing, and administering a medication as well as for making statements about medication use.

Medication Administration (QI Core)

Describes the event of a patient consuming or otherwise being administered a medication.

Medication Request (QI Core)

The Medication Request resource can be used to record a patient's medication prescription or order.

Observation Vital Signs (US Core)

Represents a patient's vital signs (e.g., heart rate, blood pressure) using a standardized FHIR Observation format.

Patient (QI Core)

Represents patient demographic data elements

Procedure (QI Core)

Represents patient procedures.

Service Request (QI Core)

Represents ordered service such as diagnostic investigations, treatments, or operations to be performed.

Simple Observation (QI Core)

Used for simple observations such as device measurements, laboratory results, vital signs, height, weight, etc.

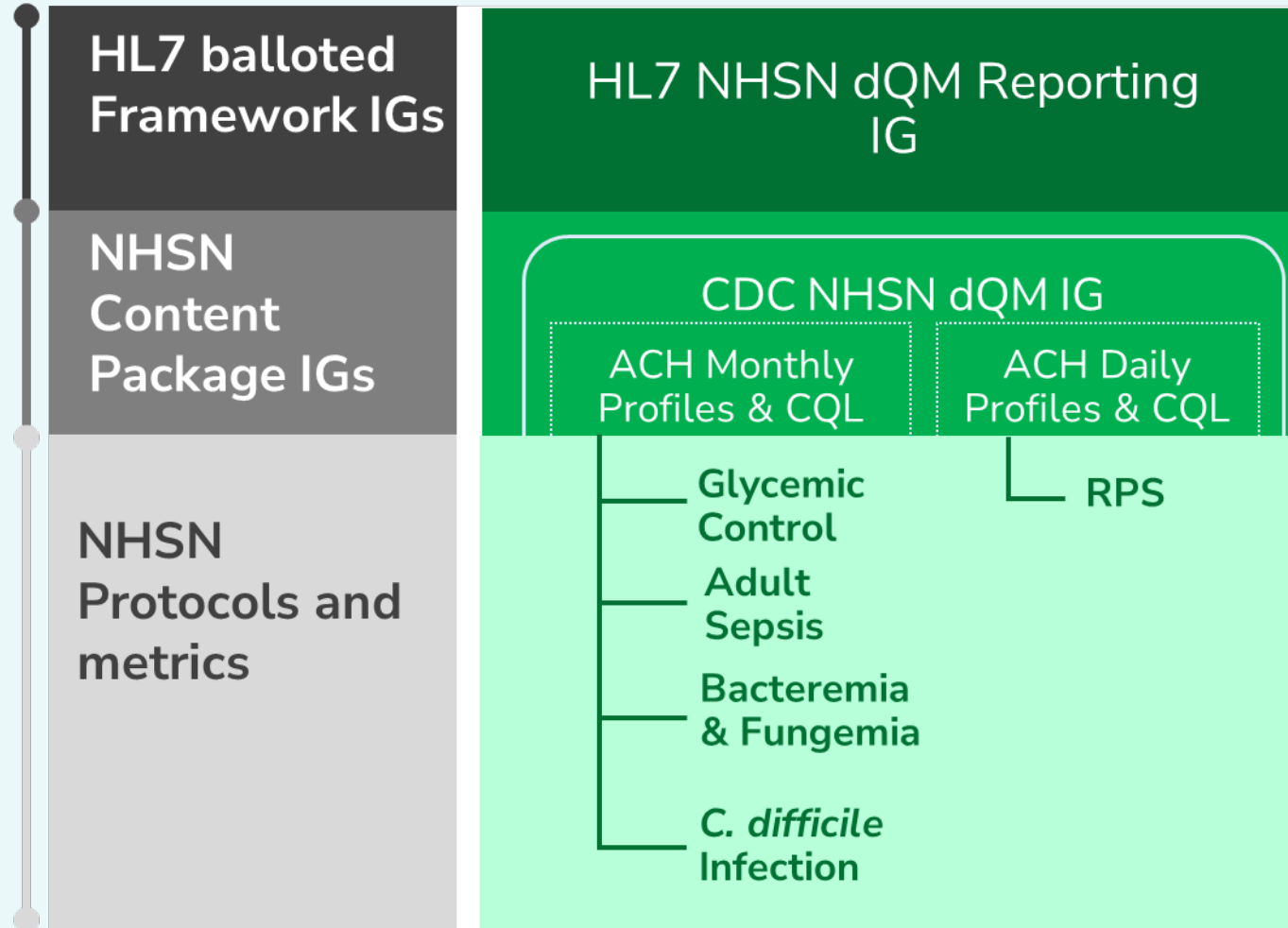
Specimen (US Core)

A sample to be used for analysis usually linked to an observation.

Resources- [QI Core 6.0.0](#), [US Core 6.1.0](#), and [FHIR 4.0.1](#)

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Surveillance and Quality Measurement

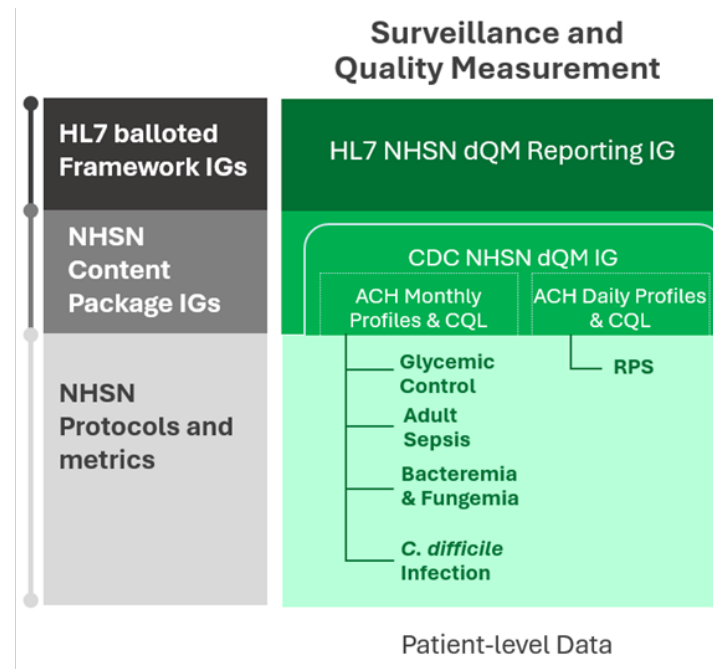


Patient-level Data

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HL7 NHSN dQM Reporting IG

- Published by HL7 International / Public Health Work Group
- Standardizes data submission for NHSN reporting requirements by establishing a common framework
- Contains common profiles, value sets, and general requirements for reporting to NHSN



HL7 International National Healthcare Safety Network (NHSN) Digital Quality Measure (dQM) Reporting Implementation Guide 1.0.0 - STU1 **HL7 FHIR**

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National Healthcare Safety Network (NHSN) Digital Quality Measure (dQM) Reporting Implementation Guide, published by HL7 International / Public Health. This guide is not an authorized publication; it is the continuous build for version 1.0.0 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 dQM Reporting Home

Official URL: http://hl7.org/fhir/us/nhsn-dqm/ImplementationGuide/hl7.fhir.us.nhsn-dqm	Version: 1.0.0
IG Standards status: Trial-use	Maturity Level: 1
Other Identifiers: OID:2.25.316204395913842452684237438142819890580	
Computable Name: NHSNdQM	

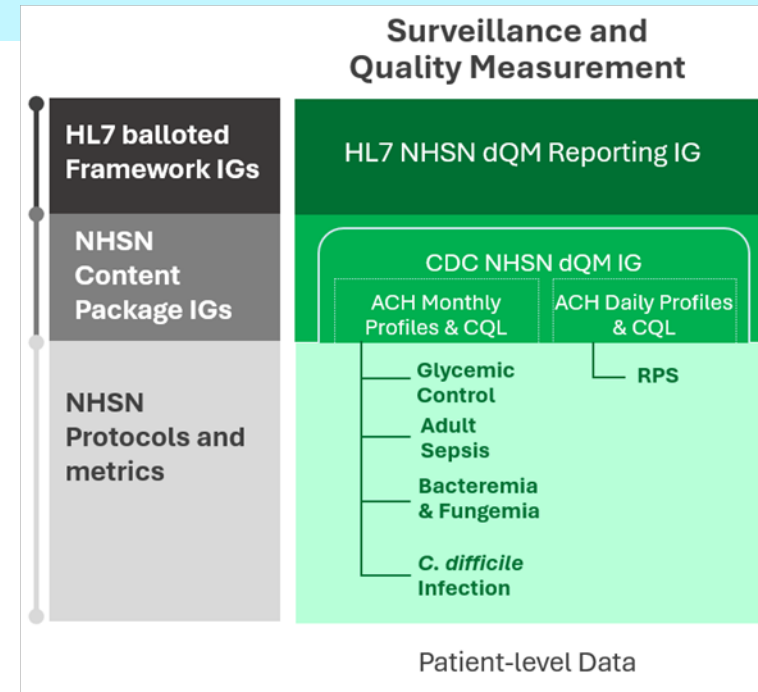
<https://build.fhir.org/ig/HL7/nhsn-dqm/>

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CDC NHSN dQM IG

- Content Package Implementation Guide with Daily and Monthly Profiles
- Data element-level specifications
- Hosted on NHSN website
- Release 1 live on website
- Release 2 planned for 2026 to align with US Core 6.1.0 and QI Core

[NHSN Measures Home - CDC National Healthcare Safety Network \(NHSN\) Digital Quality Measures \(dQM\) Content Package IG v1.0.0](#)



CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM) Content Package IG
1.0.0 - Release 1

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This page is part of the CDC National Healthcare Safety Network (NHSN) Digital Quality Measures (dQM) Content Package IG (v1.0.0: Release) based on FHIR (HL7® FHIR® Standard) R4. This is the current published version. For a full list of available versions, see the Directory of published versions.

1 NHSN Measures Home

Official URL: http://www.cdc.gov/nhsn/fhirportal/dqm/ig/ImplementationGuide/gov.cdc.nhsn.measures	Version: 1.0.0
IG Standards status: Trial-use	Maturity Level: 1
Computable Name: NHSNMeasures	

1.1 Overview

The content of The Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) Digital Quality Measures (dQMs) Content Package implementation guide (IG) defines the standards for reporting the initial

Page Contents:

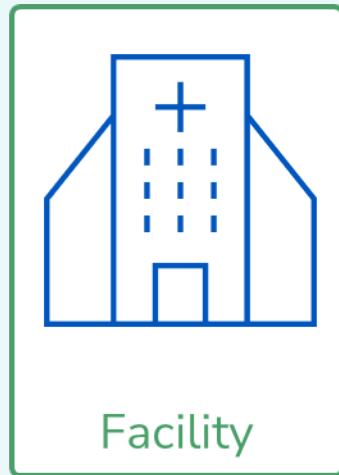
- Overview



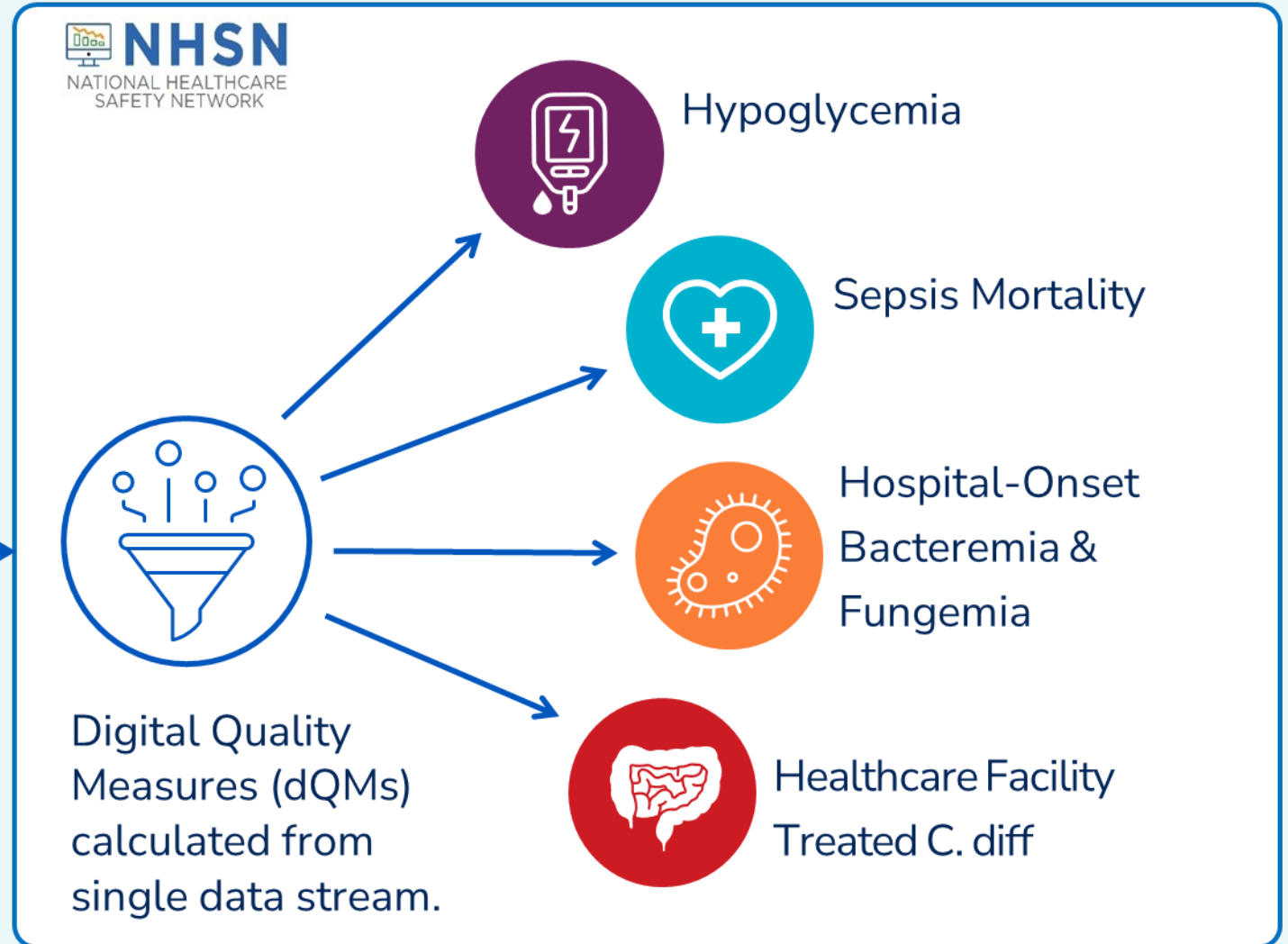
Bacteremia & Fungemia Module

One single data stream to capture all hospital data

1. The NHSN Pipeline



One touchless data stream is transmitted monthly via FHIR (patient-level)



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NHSN Bacteremia and Fungemia Surveillance Module: Overview

- **Purpose:** Expand NHSN surveillance of bloodstream infections, regardless of organism (e.g., MRSA) or association with device (CLABSI)
- Primary metrics:
 - **Outpatient Community-Onset Bacteremia (O-COB)**
 - **Inpatient Community-Onset Bacteremia (COB)**
 - **Healthcare-Onset Bacteremia (HOB)**
- *Future* complementary metrics: Blood culture utilization, Contamination, Bacterial Skin Commensal Hospital-Onset Bacteremia
- **First NHSN HAI module** to utilize **FHIR-based data exchange**, with measure calculations performed centrally within NHSN
- **Key Data Elements:** Microbiology
- **Module Status:** **Pilot** release to selected NHSNCoLab sites



Bacteremia and Fungemia Module Protocol Definitions

Disclaimer

- The definitions presented today are provisional and may be refined or updated based on data collection and feedback from pilot sites and early adopters.

Bacteremia and Fungemia Event Types

O-COB

- Outpatient Community-onset Bacteremia & Fungemia Event

COB

- Community-onset Bacteremia & Fungemia Event

HOB

- Hospital-onset Bacteremia & Fungemia Event

Who Is Included in Bacteremia & Fungemia Surveillance?

- **Initial Patient Population for the Bacteremia & Fungemia Surveillance Module**
 - All encounters for patients of any age in an ED, observation, or inpatient location and/or all encounters for patients of any age with an ED, observation, inpatient, or short stay status during the measurement period
- **Eligible Populations (based on patient physical location)**
 - **O-COB:** All patients present in ED or Observation location during the measurement period
 - **COB:** All patients on inpatient day 1–3 of their hospital stay present in an inpatient location during the measurement period
 - **HOB:** All patients on inpatient day 4 or later of their hospital stay present in an inpatient location during the measurement period.

Bacteremia & Fungemia Surveillance Key Definitions

- **ED/OBS encounter**
 - Any patient visit to an emergency department (ED) or observation (OBS) location. One patient visit equals one encounter. ED/OBS are considered outpatient locations.
- **Hospital Stay**
 - NHSN defines a hospital stay to be inclusive of any: (a) ED/OBS encounters, (b) inpatient admissions, or (c) ED/OBS encounters that lead to inpatient admissions (within 1 hour of ED/OBS encounters).
- **Inpatient admission**
 - For NHSN reporting purposes, the 'date admitted to the facility' is hospital day (HD) 1. NHSN defines an inpatient as any patient cared for or housed on an inpatient location. Local status may differ from NHSN definition; all days spent in an inpatient unit, regardless of local admission status and/or billing status are included in the counts of admissions and inpatient days. For NHSN reporting purposes, the date admitted to the facility is the calendar date that the patient physically locates to an inpatient location.

What is an O-COB Event?

- An O-COB event occurs when a patient has a bacterial or fungal organism identified from a blood specimen collected while the patient is in an outpatient location (specifically ED or Observation).
- **Key Rules:**
 - A patient can have a single O-COB event per Hospital Stay.
 - The date for the O-COB will be attributed to the earliest date that a blood specimen is collected that has a bacterial or fungal organism identified while the patient is in an ED or Observation location.
 - All organisms identified from blood specimens collected while in an ED or Observation location will be attributed to a single O-COB event.

What Does NOT Count as an O-COB Event?

- O-COB Exclusions:
 1. **Bacterial skin commensals:** The organism must NOT be included in the value set for bacterial skin commensals.
 2. **Prior O-COB event:** A patient with a previous O-COB event is excluded from additional O-COB events during the same Hospital Stay.

What is a COB Event?

- A COB event occurs when a patient has a bacterial or fungal organism identified from a blood specimen collected on hospital day 1 through 3 (where the date of admission to an inpatient location is hospital day 1).
- **Key Rules:**
 - A patient can have a single COB event per Hospital Stay.
 - The date for the COB will be attributed to the earliest date that a blood specimen is collected that has a bacterial or fungal organism identified during hospital day 1 through 3.
 - All organisms identified from blood specimens collected during hospital day 1 through 3 will be attributed to a single COB event.

What Does NOT Count as a COB Event?

- COB Event Exclusions:
 1. **Bacterial skin commensals:** The organism must NOT be included in the value set for bacterial skin commensals.
 2. **Previous matching O-COB Event:** A bacterial or fungal organism identified from a blood culture collected on hospital day 1 through 3 is excluded from a COB event if the patient has an O-COB event during the same Hospital Stay with a matching organism. The matching algorithm is defined below.
 3. **Previous COB event:** A patient with a previous COB event is excluded from additional COB events during the same Hospital Stay.

What is an HOB Event?

- An HOB event occurs when a patient has a bacterial or fungal organism identified from a blood specimen collected on the 4th calendar day of admission or later (where the date of admission to an inpatient location is calendar day 1).
- **Key Rules:**
 - A patient can have a single HOB event per Hospital Stay.
 - The date for the HOB will be attributed to the earliest date that a blood specimen is collected that has a bacterial or fungal organism identified on or after hospital day 4.
 - **HOB Infection Timeframe:** Any subsequent positive blood culture findings during the subsequent 14 days will be considered part of the initial HOB event.

What Does NOT Count as an HOB Event?

- HOB Event Exclusions:
 1. **Bacterial skin commensals:** The organism must NOT be included in the value set for bacterial skin commensals.
 2. **Previous matching COB or O-COB Event:** A bacterial or fungal organism identified from a blood culture collected on hospital day 4 or later is excluded from an HOB event if the patient has an O-COB or COB event during the same Hospital Stay with at least one matching organism. The matching algorithm is defined below.
 3. **Previous HOB event:** A patient with a previous HOB event is excluded from additional HOB events during the same Hospital Stay.

Matching Organism Criteria

Step 1

- The reported SNOMED codes for each identified organism will be compared, if they are the same, the two organisms are considered a match.

Step 2

- If both organisms have species-level identification (species-level column contains a value) and the species-level identifications are the same, the two organisms are considered a match

Step 3

- If both organisms do not have species-level identification, but both have genus-level identification, compare organisms based on genus-level identification. If genus-level identifications are the same, the organisms are considered a match.



Clinical Scenarios and Knowledge Checks

Clinical Scenario #1

- John Smith (DOB: 1/15/1970) was admitted to the Trauma Critical Care unit after presenting to the Emergency Department following a motor vehicle accident.
- On hospital day 4, he developed a fever, and blood cultures were obtained, which subsequently grew *Staphylococcus aureus*.

Resource	Details
Patient	Male, DOB 1970-01-15
Encounter	Admit 2025-01-02T08:00 (Day 1), Discharge 2025-01-10
Location	HSLOC 1025-6 (Trauma Critical Care)
Specimen	Blood, collected 2025-01-05T10:00 (Day 4)
Observation	LOINC 600-7, S. aureus (3092008), Positive

Knowledge Check #1



1. What event does this clinical scenario represent?
 - A. O-COB (Outpatient Community-onset Bacteremia & Fungemia Event)
 - B. COB (Community-onset Bacteremia & Fungemia Event)
 - C. HOB (Hospital-onset Bacteremia & Fungemia Event)
 - D. Not an event/Excluded

Resource	Details
Patient	Male, DOB 1970-01-15
Encounter	Admit 2025-01-02T08:00 (Day 1), Discharge 2025-01-10
Location	HSLOC 1025-6 (Trauma Critical Care)
Specimen	Blood, collected 2025-01-05T10:00 (Day 4)
Observation	LOINC 600-7, S. aureus (3092008), Positive

Chat and Q & A features are limited to only 1000 participants

Clinical Scenario #1 Line Listing

- Example of a blood culture–level line listing report to demonstrate the type of output generated for this clinical scenario and how the data are presented

patientID	sex	Age	locCDC	HSLOC	organismSNOMEDCode	Organism SNOMEDDesc	Bacterial Skin Commensal	Community Assoc Organism	bldSpec CollectedDate	Onset OccurDesc	onsetType Desc	Index EventDate
4d192f80-7649-4afd-a842-528ef60fc904	male	49	IN:ACUTE:CC:T	1025-6	3092008	Staphylococcus aureus	0	0	2025-01-05	hospDay4+	HOB	2025-01-05

Clinical Scenario #2

- John Doe (DOB: 3/10/1980) was admitted to the Trauma Critical Care unit after presenting to the Emergency Department following a fall with traumatic injuries.
- On hospital day 2, he developed a fever, and blood cultures were obtained, which grew *Escherichia coli*.
- A repeat blood culture collected on hospital day 5 was also positive for *E. coli*.

Resource	Details
Patient	Male, DOB 1980-03-10
Encounter	Admit 2025-01-02T10:00 (Day 1), Discharge 2025-01-11
Location	HSLOC 1025-6 (Trauma Critical Care)
Specimen 1	Blood, collected 2025-01-03T08:00 (Day 2)
Observation 1	<i>E. coli</i> (112283007), Positive
Specimen 2	Blood, collected 2025-01-06T09:00 (Day 5)
Observation 2	<i>E. coli</i> (112283007), Positive

Knowledge Check #2



2. What type of event does the day 2 blood culture represent?
- A. O-COB (Outpatient Community-onset Bacteremia & Fungemia Event)
 - B. COB (Community-onset Bacteremia & Fungemia Event)
 - C. HOB (Hospital-onset Bacteremia & Fungemia Event)
 - D. Not an event/Excluded

Resource	Details
Patient	Male, DOB 1980-03-10
Encounter	Admit 2025-01-02T10:00 (Day 1), Discharge 2025-01-11
Location	HSLOC 1025-6 (Trauma Critical Care)
Specimen 1	Blood, collected 2025-01-03T08:00 (Day 2)
Observation 1	E. coli (112283007), Positive
Specimen 2	Blood, collected 2025-01-06T09:00 (Day 5)
Observation 2	E. coli (112283007), Positive

Knowledge Check #3

3. What type of event does the day 5 blood culture represent?
- A. O-COB (Outpatient Community-onset Bacteremia & Fungemia Event)
 - B. COB (Community-onset Bacteremia & Fungemia Event)
 - C. HOB (Hospital-onset Bacteremia & Fungemia Event)
 - D. Not an event/Excluded

Resource	Details
Patient	Male, DOB 1970-01-15
Encounter	Admit 2025-01-02T08:00 (Day 1), Discharge 2025-01-10
Location	HSLOC 1025-6 (Trauma Critical Care)
Specimen	Blood, collected 2025-01-05T10:00 (Day 4)
Observation	LOINC 600-7, S. aureus (3092008), Positive

Clinical Scenario #2 Line Listing

- Example of a blood culture–level line listing report to demonstrate the type of output generated for this clinical scenario and how the data are presented

patientID	sex	Age	locCDC	HSLOC	organismSNOMEDCode	Organism SNOMEDDesc	Bacterial Skin Commensal	Community Assoc Organism	bldSpec CollectedDate	Onset OccurDesc	onsetType Desc	Index EventDate
8a407b28-6668-43be-9148-31ed08b8c0c4	male	44	IN:ACUTE:CC:T	1025-6	112283007	Escherichia coli	0	0	2025-01-03	hospDay1-3	COB	2025-01-03
8a407b28-6668-43be-9148-31ed08b8c0c4	male	44	IN:ACUTE:CC:T	1025-6	112283007	Escherichia coli	0	0	2025-01-06	hospDay4+	EXCL-PM	

Patient Safety Component (PSC)

[Print](#)

Use the Patient Safety Component (PSC) to access modules that focus on process measures and events associated with medical devices, surgical procedures, antimicrobial agents used during the provision of healthcare, and multidrug-resistant organisms.

Facilities Reporting in PSC

[Acute Care / Critical Access Hospitals](#)

[Long-term Acute Care Hospitals](#)

[Inpatient Rehabilitation Facilities](#)

[Inpatient Psychiatric Facilities](#)

New Users

 [Enroll New Facility](#)

 [PSC Training](#)

 [Educational Roadmap](#)

 [PSC Cheat Sheet](#)  [PDF – 375 KB]

NHSN FHIR Pipeline: NHSN Bacteremia and Fungemia Surveillance Module

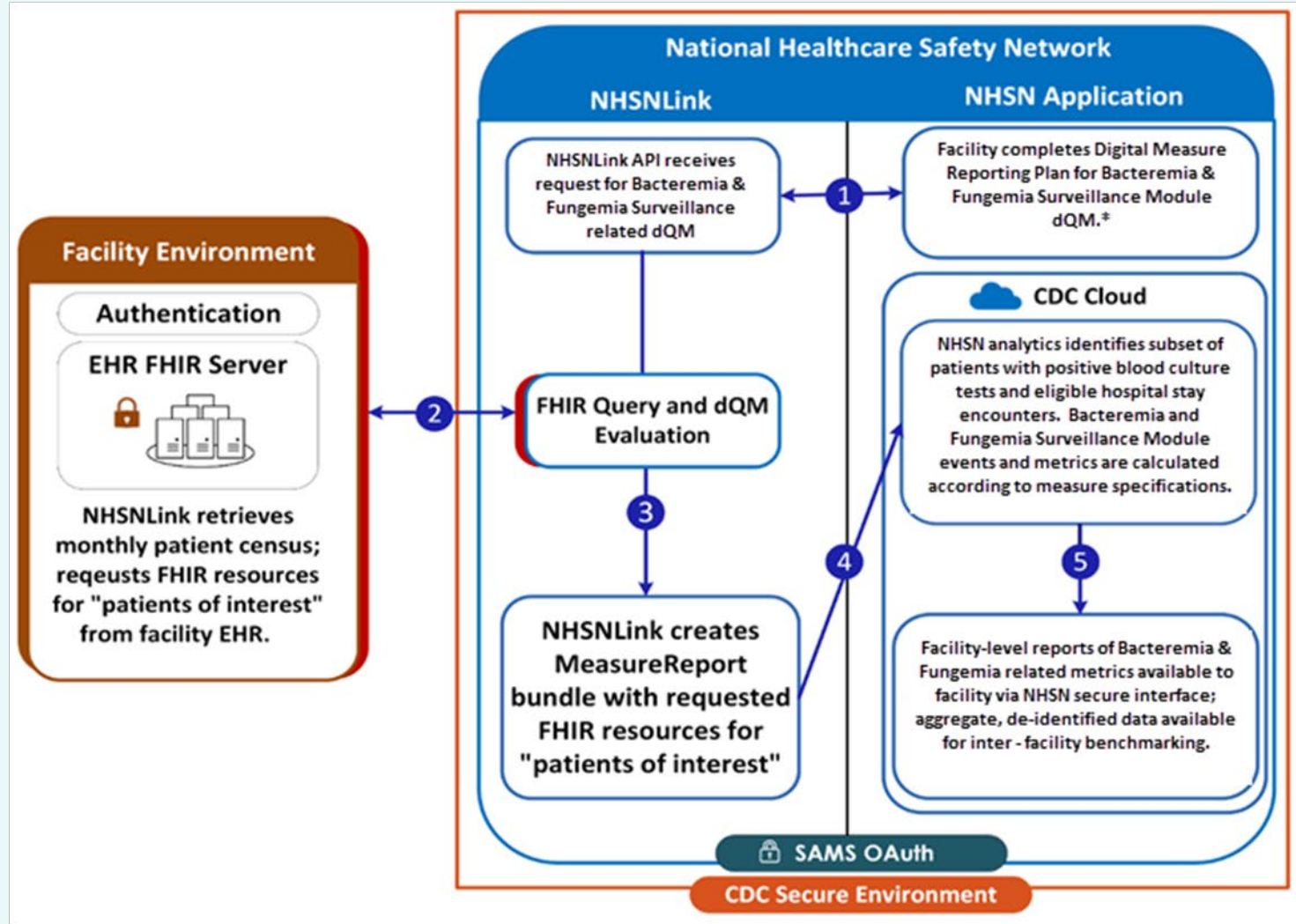
<https://www.cdc.gov/nhsn/psc/index.html>

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NHSN Bacteremia and Fungemia: Overview of dQM Data Flow

*Signals facility readiness to report digital quality measure and that facility has signed NHSN data-use agreements for secure data sharing, including “NHSN Agreement to Participate and Consent” and “NHSN Facility/Group User & Administrator Rules of Behavior”

API: Application Programming Interface; CDC, Centers for Disease Control and Prevention; dQM: digital quality measure; EHR: Electronic health record; FHIR: Fast Healthcare Interoperability Resources; NHSN: National Healthcare Safety Network; SAMS: Secure Access Management Services



NHSNLink UI-Submissions Dashboard

Reporting Period: Group by: Reporting Period Status

Monthly Submissions Status

REPORTING PERIOD	DETAILS	MEASURES IN PLAN	TOTAL IN CENSUS
2024-05-01-2024-05-31	Scheduled	VTE HOB CDI HYPO HYPR	#
2024-04-01-2024-04-30	In Progress	VTE HOB CDI HYPO HYPR	#
2024-03-01-2024-03-31	✔ Successful Submission (ID #####)	VTE HOB CDI HYPO HYPR	#
2024-02-01-2024-02-29	⚠ Submitted with Issues (ID #####)	VTE HOB CDI HYPO HYPR	#
2024-01-01-2024-01-31	❌ Failed Submission (ID #####)	VTE HOB CDI HYPO HYPR	#

Daily Submissions Status

Quarterly Submissions Status

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NHSNLink UI- Prequalification Report

THE PREQUALIFICATION REPORT WILL DETAIL THE ISSUES THAT PREVENT A REPORT BUNDLE FROM BEING SUBMITTED TO THE NHSN DATA PIPELINE.

THE PREQUALIFICATION REPORT WILL ALSO OUTLINE GUIDANCE FOR HOW THE FACILITY CAN RESOLVE THE ISSUE.

The screenshot displays the NHSNLink Submissions Dashboard. At the top, there are navigation links for 'Dashboard', 'Resources', and 'Help'. The main title is 'NHSNLink Submissions Dashboard'. Below this, there are two tabs: 'SUBMISSION SUMMARY' and 'PRE-QUAL REPORT', with the latter being the active tab.

The submission details are as follows:

Submission ID	Status	Reporting Period	Timestamp	Submission File Size
225ca2d3-3683-4004-b907-b080e82a305f	Submitted	2025-04-01T04:00:00Z - 2025-05-23T04:00:00Z	2025-05-23T15:32:35.354Z	XXMB

Below the submission details, there is a 'Pre-Qual Report' section with two buttons: 'DOWNLOAD PRE-QUAL REPORT' and 'DOWNLOAD SUBMISSION'.

The 'ISSUES SUMMARY' section features a bar chart showing the quantity of issues for three categories:

Issue Category	Quantity
Uncategorized	130
Does not match extensible labelSet	60
No codes from an extensible binding valueSet	60

The 'Unacceptable Issues' section contains a table with the following data:

ISSUE CATEGORY	QUANTITY	GUIDANCE
Minimum requirement not met for profile.	18	Needs investigation, cardinality is not being met based on profile. Reference and review profile to meet profile requirements.
Unable to validate measure	6	This appears to be an issue in the validation process and should be resolved as it

NHSNLink UI-Guided Onboarding

- The NHSNLink UI will also serve as the platform to support healthcare facilities in onboarding for FHIR-based reporting.
- The workflow will be phased, interactive, and embedded with real-time guidance to reduce manual support and improve scalability.



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First Step: NHSN Digital Measure Reporting Plan

- Authorizes NHSN to query the facility's FHIR server to collect EHR data elements
- Facility agrees to comply with dQM reporting requirements
 - Includes standardizing locations and other data elements (e.g., location codes>>HSLOC, medications>>RxNorm, labs>>LOINC)
- Facility selects the measure(s) and reporting period for data analysis reports

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

NHSN NATIONAL HEALTHCARE SAFETY NETWORK

NHSN - National Healthcare Safety Network (ps1410-65ddf65fb-bqmn8:80)

Add Digital Measure Reporting Plan

Mandatory fields marked with *

Facility

Facility ID *:

Bacteremia & Fungemia Surveillance Module

Bacteremia & Fungemia data are collected from and include all applicable inpatient locations, emergency departments and 24-hour observation locations. This module includes reporting for Hospital-onset Bacteremia (HOB) events and accompanying complementary metrics.

Measure	Following	Start Month	Start Year
HOB	<input type="checkbox"/>		

Respiratory Pathogens Surveillance (RPS) Module

Measure	Following	CSV	FHIR	Start Month	Start Year
RPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

• During the specified reporting period, if FHIR is selected the facility authorizes NHSN to query your facility's FHIR server to collect the specified data elements as per the NHSN Patient Safety Component Digital Quality Measure (dQM) protocols for each of the modules that appear on this form. The data collected will be used to provide measure specific event rates for each measure followed, as well as additional analytic and reporting options (for example, line-level lists).

• To participate in any of the NHSN Patient Safety Component dQM modules, a Patient Safety Annual Survey must be completed and submitted. The survey must be completed annually and submitted by the end of February. This will allow addition of reporting plans for the current year. Data will only be pulled when there is a completed annual survey.

• Completion of the reporting plan indicates that data transmitted by your facility conforms to the NHSN dQM protocol(s) for the measures your facility elected to follow and instructions for reporting FHIR dQMs to NHSN. This includes adherence to technical specifications for value sets (i.e., local or non-standardized codes are mapped to established value sets such as RxNorm, LOINC, and HSLOC).

• The American Hospital Association (AHA) holds a copyright to the Uniform Billing Codes ("UB-04") contained in certain quality measure specifications. The UB-04 Codes in quality measures developed by the CDC are included with the permission of the AHA. The UB-04 Codes contained in these specifications may be used by hospitals and other health care delivery organizations for the purpose of tracking, analytics, and reporting CDC-developed measure results or for internal quality improvement purposes. The UB-04 Data File or any portion of the code set contained in this measure may not be used independently of the measures for any other type of analysis or billing. All other uses of the UB-04 Codes require a license from the AHA. Anyone desiring to use the UB-04 Codes in a commercial product(s), including tracking, analytics or reporting of quality measures on the behalf of hospitals or health care delivery organizations by commercial vendors, or for any other commercial use, must obtain a commercial use license directly from the AHA. To inquire about licensing, contact ub04@aha.org.

Save Back

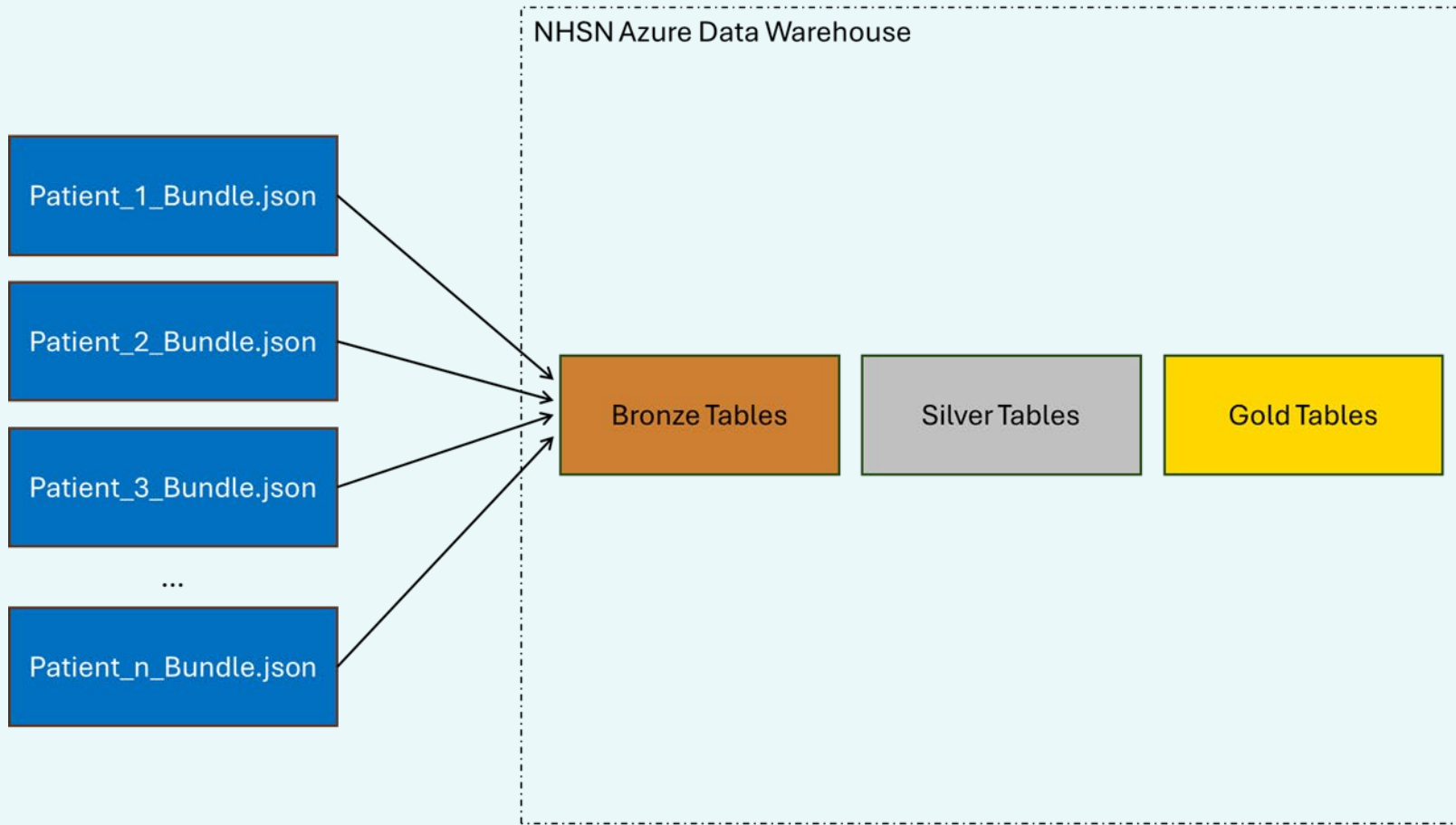
Data Pipeline: “Bundled” FHIR Data

```
{
  "fullUrl": "Medication1",
  "resource": {
    "resourceType": "Medication",
    "id": "Medication1",
    "code": {
      "coding": [
        {
          "system": "http://www.whocc.no/atc",
          "code": "A10AB05",
          "display": "insulin aspart"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "51428",
          "display": "insulin aspart, human"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "1653202",
          "display": "3 ML insulin aspart, human 100 UNT/ML Pen Injector"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "284810",
          "display": "NovoLog"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "1986350",
          "display": "Eiasp"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "1653204",
          "display": "3 ML insulin aspart, human 100 UNT/ML Pen Injector [NovoLog]"
        },
        {
          "system": "http://www.nlm.nih.gov/research/umls/rxnorm",
          "code": "1986356",
          "display": "3 ML insulin aspart, human 100 UNT/ML Pen Injector [Eiasp]"
        }
      ]
    },
    "text": "insulin aspart, human"
  }, ...
}
```

Example Medication Resource from JSON (artificial data)

- FHIR “Bundles” for each patient are submitted as JSON files containing a collection of FHIR resource types each with data elements.
- The files are highly structured with nested data elements.
- Exemplified is the list of codes reported for a single medication.
 - NHSN wrangles such data to compare SNOMED/LOINC codes against value sets as defined in the NHSN dQM protocol.

Data Pipeline: Data-Processing



- Bronze Tables
 - Resource type-specific
 - Preserve raw nested structure from JSON
- Silver Tables
 - Normalized and partially flattened, to reduce nesting for analytics
 - Wrangling targeted data elements
- Gold Tables
 - Analytics-ready
 - Event determination
 - Report generation

Data Pipeline: Data Analysis

Example Silver Table with data for encounter-locations, specimens, and observations

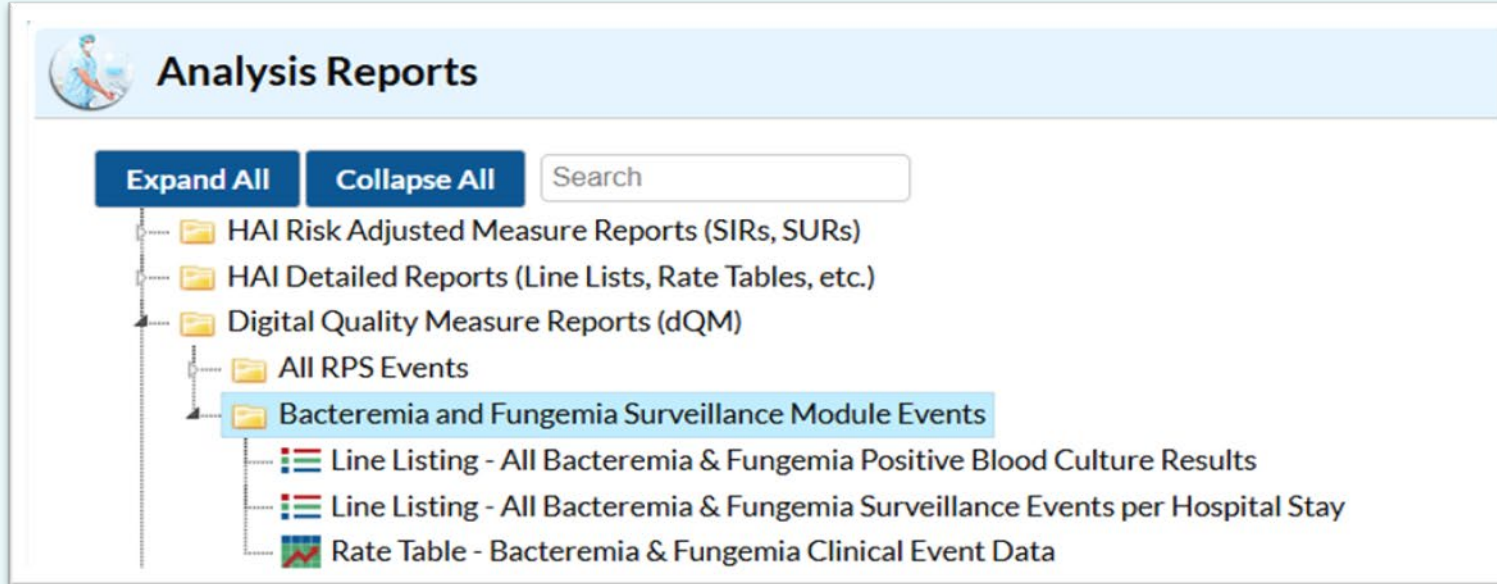
PatientID	encGrpID	encGrpPerStart	encGrpPerEnd	encLocPerStart	encLocPerEnd	encLocDisplay	locCDC	hsloc	HSLocCategory	inpAdmitStart	inpAdmitEnd
pat1	encgrp1	2025-10-10T07:45:00Z	2025-10-21T18:15:00Z	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z
pat1	encgrp1	2025-10-10T07:45:00Z	2025-10-21T18:15:00Z	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z
pat1	encgrp1	2025-10-10T07:45:00Z	2025-10-21T18:15:00Z	2025-10-19T14:15:00Z	2025-10-21T18:15:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z
pat1	encgrp1	2025-10-10T07:45:00Z	2025-10-21T18:15:00Z	2025-10-19T14:15:00Z	2025-10-21T18:15:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-10T14:15:00Z	2025-10-21T18:15:00Z
pat2	encgrp1	2025-10-15T09:32:00Z	2025-10-26T27:13:00Z	2025-10-15T09:32:00Z	2025-10-16T13:14:00Z	Emergency Depart	OUT:ACUTE:ED	1108-0	ED	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z
pat2	encgrp1	2025-10-15T09:32:00Z	2025-10-26T27:13:00Z	2025-10-15T09:32:00Z	2025-10-16T13:14:00Z	Emergency Depart	OUT:ACUTE:ED	1108-0	ED	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z
pat2	encgrp1	2025-10-15T09:32:00Z	2025-10-26T27:13:00Z	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z
pat2	encgrp1	2025-10-15T09:32:00Z	2025-10-26T27:13:00Z	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z	Medical Ward	IN:ACUTE:WARD:M	1060-3	INP	2025-10-16T13:15:00Z	2025-10-26T27:13:00Z

specID	spec	obsID	specType Code	specType Display	specTypeSystem	specCollectedDate Time	obsType Code	obsType Display	obsTypeSystem	obsvalueCodeable ConceptCode	obsvalueCodeable ConceptSystem	obsvalueCodeableConceptText	obsValue QuantityValu	obsValue QuantityUnit	obsValueQuantity System
spec4	897453-8	obs1	119297000	Blood Specimen	http://snomed.info/sct	2025-10-12T18:15:00Z	751-8	Neutrophil	http://loinc.org			null	5.8	K/uL	http://unitsofmeasure.org
spec5	215465-6	obs2	119297000	Blood Specimen	http://snomed.info/sct	2025-10-13T12:15:00Z	751-8	Neutrophil	http://loinc.org			null	6.1	K/uL	http://unitsofmeasure.org
spec1	486123-9	obs3	119297000	Blood Specimen	http://snomed.info/sct	2025-10-14T12:15:00Z	600-7	Blood Culture	http://loinc.org	307000000000000	http://snomed.info/sct	AmpC beta-lactamase producing Salmonella Typhimurium	null	null	null
spec2	165321-4	obs4	119297000	Blood Specimen	http://snomed.info/sct	2025-10-15T12:15:00Z	600-7	Blood Culture	http://loinc.org	307000000000000	http://snomed.info/sct	AmpC beta-lactamase producing Salmonella Typhimurium	null	null	null
spec3	874574-8	obs5	119297000	Blood Specimen	http://snomed.info/sct	2025-10-15T00:15:00Z	751-8	Neutrophil	http://loinc.org			null	5	K/uL	http://unitsofmeasure.org
spec1	541206-7	obs6	119297000	Blood Specimen	http://snomed.info/sct	2025-10-16T12:15:00Z	600-7	Blood Culture	http://loinc.org	715307006	http://snomed.info/sct	Carbapenem resistant Escherichia coli	null	null	null
spec2	651321-1	obs7	119297000	Blood Specimen	http://snomed.info/sct	2025-10-17T12:15:00Z	600-7	Blood Culture	http://loinc.org	715307006	http://snomed.info/sct	Carbapenem resistant Escherichia coli	null	null	null
spec4	964864-2	obs8	119297000	Blood Specimen	http://snomed.info/sct	2025-10-19T18:15:00Z	751-8	Neutrophil	http://loinc.org			null	4.7	K/uL	http://unitsofmeasure.org

- Filtered to relevant specimens and observations for bacteremia and fungemia dQM (blood specimens & neutrophils/blood cultures)
- Manipulated to be analytics ready for event determination as a Gold Table by positioning patient, encounter, location, specimen and observation data together

Note: Fictitious data, for illustrative purposes only

Bacteremia and Fungemia Line Listing Reports



Three analysis reports are available for the Bacteremia and Fungemia Surveillance Module:

- 1. Line Listing – All Bacteremia & Fungemia Positive Blood Culture Results – Multiple rows per patient**
Line listing report of all positive blood cultures and neutrophil tests by patient encounter
- 2. Line Listing – All Bacteremia & Fungemia Surveillance Events per Hospital Stay – Single row per patient**
Line listing report of all patient stays that summarizes bacteremia and fungemia events (HOB, COB, OP-COB)
- 3. Rate Table – Bacteremia & Fungemia Clinical Events Data - Line Listing – All Bacteremia & Fungemia**
Multiple metrics for HOB, OP-COB and COB measures

Data Pipeline: End-user Analysis Reports for and Fungemia Analysis Reports in the NHSN Patient Safety Component

The screenshot displays the NHSN Analysis Reports interface. The left sidebar contains a navigation menu with items such as Alerts, Dashboard, Reporting Plan, Patient, Event, Procedure, Summary Data, Hospital Respiratory Data, Infectious Diseases of Public Health Concern, Patient Safety Structural Measure, Import/Export, Surveys, Analysis, Tools, Cheat Sheets, Dynamic Forms, and Logout. The 'Analysis' item is highlighted with a blue circle and the number '1'. The main content area is titled 'Analysis Reports' and features 'Expand All', 'Collapse All', and 'Search' buttons. A tree view of reports is shown, with a blue box highlighting the 'Digital Quality Measure Reports (dQM)' folder. This folder contains 'All RPS Events' and 'Bacteremia and Fungemia Surveillance Module Events'. The 'Bacteremia and Fungemia Surveillance Module Events' folder is highlighted with a blue circle and the number '3', and it contains 'Custom Reports', 'Line Listing - All Bacteremia & Fungemia Positive Blood Culture Results', 'Line Listing - All Bacteremia & Fungemia Surveillance Events per Hospital Stay', and 'Rate Table - Bacteremia & Fungemia Clinical Event Data'. A blue circle with the number '2' points to the 'Digital Quality Measure Reports (dQM)' folder.

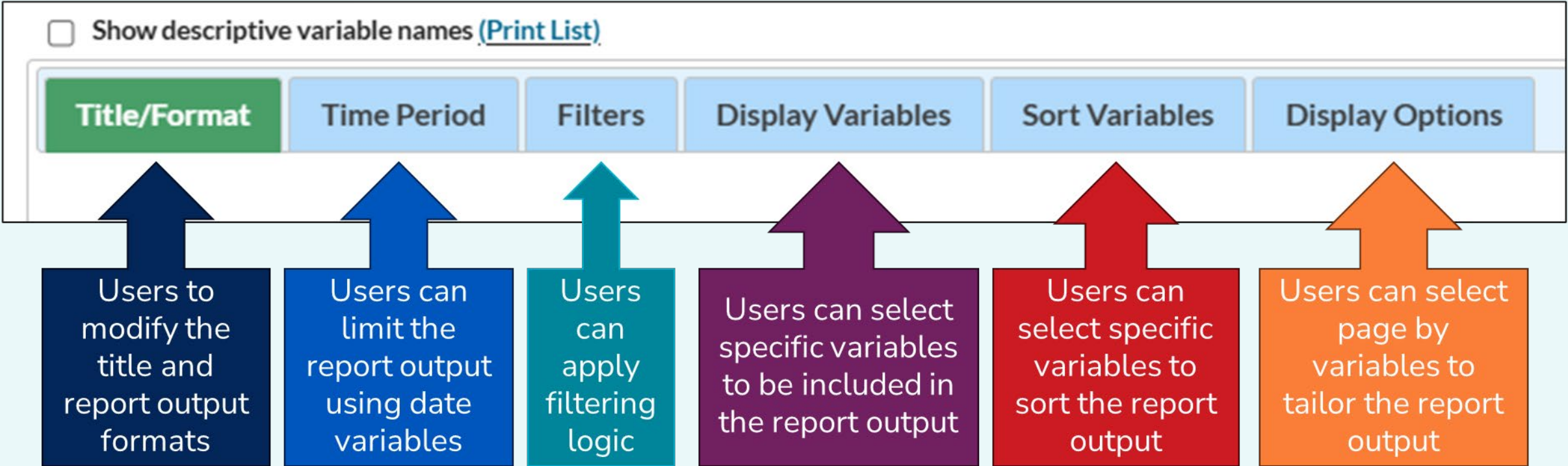
- After data are analyzed in the NHSN data pipeline, data are made available to NHSN users in analysis reports.
- Analysis reports are accessed within the Analysis Section of the NHSN Application.
- Analysis reports will include metric calculations for a facility, as well as supplemental reports such as line listings of events.

Data Pipeline: End-user Analysis Reports - Modifying Reports

- ▶ Run Report
- ⚙️ Modify Report
- 📄 Export Data Set

All line listing reports have the same “Modify Report” options available. Users can use the “Modify Report” options to tailor the report output to facility needs.

The “Show descriptive variable names” option will let users view data labels rather than variable names for ease of interpretation.



Chat and Q & A features are limited to only 1000 participants

Data Pipeline: End-user Analysis Reports All Bacteremia & Fungemia Positive Blood Culture Results

Contains all positive blood culture results and neutrophil counts per patient encounter. There can be multiple rows per encounter and patient ID.

National Healthcare Safety Network

Line Listing - All Bacteremia & Fungemia Positive Blood Culture Results

As of: February 9, 2026 at 3:46 PM UTC

Date Range: dqmmothlygold.bfclinicalevent bldSpecCollectedDate between 10/01/2025 AND 10/15/2025

Filter: NHSNOrgID = 14596

Sort: Sorted by NHSNOrgID,encGrpPerStart

Facility Org ID	CMS Certification Number	Type of Facility	NHSN Encounter Group ID	Patient ID	Patient Age at Encounter	NHSN Encounter Group Period Start DateTime	NHSN Encounter Group Period End DateTime	CDC Location	NHSN Encounter SubGroup HSLOC Category	What calendar date was the blood specimen collected?	What is the SNOMED Code result of the blood culture test?	What is the text description for the result of the blood culture test from the value set?	What is the text description for the result of the blood culture test from the facility?	Is there more than one vCC SNOMED code that represents an organism concept?	Is organism a bacterial skin commensal?
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	OUT:ACUTE:ED		10/5/2025					
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	IN:ACUTE:W/ INP		10/9/2025					
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	IN:ACUTE:W/ INP		10/9/2025	112283007	Escherichia coli	Escherichia coli	0	0
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	IN:ACUTE:W/ INP		10/6/2025	78065002	Enterococcus faecalis	Enterococcus faecalis	0	0
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	IN:ACUTE:W/ INP		10/7/2025	112283007	Escherichia coli	Escherichia coli	0	0
14596			ENCG-20251	PT-0001	57	10/5/2025 14:10	10/10/2025 12:00	IN:ACUTE:W/ INP		10/6/2025	112283007	Escherichia coli	Escherichia coli	0	0
14596			EG-HOB-117	PT-HOB-1172	63	10/10/2025 2:15	10/21/2025 17:45	IN:ACUTE:W/ INP		10/14/2025					
14596			EG-HOB-117	PT-HOB-1172	63	10/10/2025 2:15	10/21/2025 17:45	IN:ACUTE:W/ INP		10/14/2025	1172560002	Cutibacterium modestum	Cutibacterium modestum	0	1
14596			EG-HOB-117	PT-HOB-1172	63	10/10/2025 2:15	10/21/2025 17:45	IN:ACUTE:W/ INP		10/14/2025	87755005	Cutibacterium granulosum	Cutibacterium granulosum	0	1

Total number of records: 9

Footnotes

- 1) PatientID must have at least one blood culture result or neutrophil count result for inclusion in this line listing report.
- 2) A specimen is eligible for an Hospital Onset Bacteremia/Fungemia Event (HOB) if it is collected in an inpatient location on day 4 or later of facility admission; A specimen is eligible for a Community-onset (CO) if HOB event specimen collected in an inpatient location on day 1, 2, or 3 of facility admission; A specimen is eligible for an Outpatient Community Onset Event if it is collected in an 'ED' or 'Obs' location. Please see the protocol for additional event determination criteria.

Source of aggregate data: BFClinicalEvent

Default variables include, NHSNOrgID, ccn, factype, encGrpID, patientID, patientAgeAtVisitEncGrpStartDate, encGrpPerStart, encGrpPerEnd, locCDC, HSLOCcategory, bldSpecCollectedDate, organismSNOMEDCode, organismSNOMEDDesc, facOrganismDesc, organismCodeDuplicate, bacterialSkinCommensal, communityAssocOrganism, genusDesc, speciesDesc, speciationLevel, onsetTypeDesc, onsetOccurDesc, indexEventDate, and infTimeframe14Day

All data presented are fictitious and do not contain actual patient information.

Data Pipeline: Line Listing – All Bacteremia & Fungemia Surveillance Events per Hospital Stay

Contains all patient stays that summarizes bacteremia and fungemia events (HOB, COB, OP-COB). A single row per patientID and patient stay (encounterID).

National Healthcare Safety Network

Line Listing - All Bacteremia & Fungemia Surveillance Events per Hospital Stay

As of: February 9, 2026 at 4:45 PM UTC

Date Range: dqmmmonthlygold.bfencounter encGrpPerStart between 10/01/2025 AND 10/15/2025

Filter: NHSNOrgID = 14596

Sort: Sorted by NHSNOrgID,encGrpPerStart

Facility Org ID	CMS Certification Number	Type of Facility	NHSN Encounter Group ID	Patient ID	NHSN Encounter Group Period Start DateTime	NHSN Encounter Group Period End DateTime	Is the patient 18 years or older?	What is the inpatient admission date?	What is the inpatient discharge date?	What is the number of inpatient days for this hospital stay?	Does this inpatient admission have four or more inpatient days?	What are the patient days eligible for a Hospital onset infection?	Did the patient spend any time in an ED/Obs Unit during this hospital stay?	What is the date of the earliest organisms identified that are hospital onset?	What is the date of the earliest organisms identified that are outpatient community onset?	What is the date of the earliest organisms identified that are community onset?	Did an ED/OBS Community Onset Event Occur?
14596			EG-COB-HOB-001-PT	PT-COB-HOB-001	10/10/2025 7:45	10/21/2025 18:15	1	10/10/2025 14:15	10/21/2025 18:15	12	1	7	1	10/19/2025			0
14596			EG0001-PT0001	PT0001	10/11/2025 12:31	10/15/2025 17:31	1	10/11/2025 16:31	10/15/2025 17:31	5	1	2	1				
14596			EG-HOB-D5-001-PT-H	PT-HOB-D5-001	10/12/2025 6:00	10/24/2025 14:00	1	10/12/2025 10:00	10/24/2025 14:00	13	1	2	1	10/16/2025			0
14596			EG-ADULT-003-PTAD	PTADULT003	10/13/2025 12:23	10/23/2025 2:23	1	10/13/2025 23:23	10/23/2025 2:23	11	1	8	1				
14596			EG-ADULT20-008-PT	PTADULT20-008	10/13/2025 16:00	10/16/2025 10:00	1	10/14/2025 3:00	10/16/2025 10:00	3	0	0	1				
14596			EG-OCTNOV-001-PTC	PTOCTNOV001	10/14/2025 14:10	11/29/2025 6:17	1	10/15/2025 7:10	11/29/2025 6:17	46	1	43	1				
14596			EG-ADULT20-018-PT	PTADULT20-018	10/14/2025 19:54	10/20/2025 1:54	1	10/14/2025 22:54	10/20/2025 1:54	7	1	4	1				

Total number of records: 7

Footnotes

1) A specimen is eligible for an Healthcare Facility Onset Bacteremia/Fungemia Event (HOB) if it is collected in an inpatient location on day 4 or later of facility admission; A specimen is eligible for a Community-onset (CO) if HOB event specimen collected in an inpatient location on day 1, 2, or 3 of facility admission; A specimen is eligible for an Outpatient Community Onset Event if it is collected in an 'ED' or 'Obs' location. Please see the protocol for additional event determination criteria.

2) Hospital Stay: NHSN defines a hospital stay to be inclusive of any: (a) ED/OBS encounters, (b) inpatient admissions, or (c) ED/OBS encounters that lead to inpatient admissions (within 1 hour of ED/OBS encounters).

Source of aggregate data: BFEncounters

Default variables include, NHSNOrgID, ccn, factype, encGrpID, patientID, encGrpPerStart, encGrpPerEnd, patient18Plus, inpAdmitStart, inpAdmitEnd, inpatientDays, inpAdmit4PlusDays, inpatientDaysEligibleforHOB, edOBSVisit, indexHOBEeventDate, indexOPCOBEeventDate, indexCOBEeventDate, opCOBEevent, ocobHSLOC, ocobLocCDC, cobEvent, cobHSLOC, cobLocCDC, hobEvent, hobHSLOC, hobLocCDC, organismCount14Day, oncCOBDesc, oncHOBDesc, nicuCOBFlag, and nicuHOBFlag

Note: Facility and patient-level identifiers are fictitious for this report

Data Pipeline: Rate Table – Bacteremia & Fungemia Clinical Event Data

Filtering for Specific Metrics and Time Values

The screenshot shows a web interface titled "Modify 'Rate Table - Bacteremia & Fungemia Clinical Event Data'". It includes a checkbox for "Show descriptive variable names (Print List)", a "Type: Rate Table" label, and a "Last Generated (UTC): N/A" timestamp. The interface has four tabs: "Title/Format", "Time Period", "Filters" (which is active), and "Display Options". Below the tabs are "Additional Filters: Show" and "Clear" buttons. The main filter area contains a hierarchical structure with "AND" and "OR" operators. Three filter rules are listed, each with a "Delete" button and a circled number (1, 2, or 3) pointing to the value field:

Variable	Operator	Value	Action
ageGroup	equal	adult	Delete
aggregationLevel	equal	Y	Delete
timeValue	equal	2025	Delete

At the bottom of the interface are buttons for "Run", "Save...", "Export...", and "Close".

The Rate Table report for the Bacteremia & Fungemia Clinical Event Data can be stratified into specific groups and time frames through filtering.

Age Group – Adult or pediatric

Aggregation Level – Y, YH, YQ, M

Time Value – YYYY, YYYYH1/2, YYYYQ1/2/3/4, 2025M1-12

Metrics –

- HOB event incidence density rate
- HOB event crude risk
- Inpatient COB prevalence rate
- O-COB prevalence rate

Data Pipeline: Rate Table – Bacteremia & Fungemia Clinical Event Data

National Healthcare Safety Network

Rate Table - Bacteremia & Fungemia Clinical Event Data

As of: February 20, 2026 at 4:52 PM UTC

Date Range: dqmmonthlygold.bfsummary All Dates

Filter: NHSNOrgID = 14596 AND (((ageGroup = adult) AND (aggregationLevel = Y) AND (timeValue = 2025)))

NHSNOrgID	ccn	stratification Level	location	ageGroup	aggregation Level	timeValue	metric	numeratorBF	denominatorBF	rateBF
14596		ageGroup		adult	Y	2025	HOB event incidence density rate	6	332	180.7
14596		ageGroup		adult	Y	2025	O-COB prevalence rate	0	55	0
14596		ageGroup		adult	Y	2025	HOB event crude risk	6	51	11.77
14596		ageGroup		adult	Y	2025	Inpatient COB prevalence rate	1	55	1.818

Total number of records: 4

Footnotes

1). Bacteremia (HOB) crude risk event risk admission rate is calculated as the number of hospital onset events divided by the number of inpatient admissions multiplied by 100 hospital stays eligible for an HOB event occurring within the measurement period multiplied by 100. Healthcare Facility Onset Bacteremia (HOB) event incidence density rate is calculated by dividing the number of hospital healthcare facility onset events by the number of inpatient days eligible for a hospital onset event during the measurement period multiplied by 10,000. The outpatient onset bacteremia (O-COB) prevalence rate is calculated by dividing the number of outpatient (ED/OBS) onset events by the number of emergency department and observation unit encounters occurring within the measurement period multiplied by 100. The inpatient community onset bacteremia (COB) prevalence rate is calculated by dividing the number of COB events divided by inpatient admission patient-stays eligible for a community onset event during the measurement period multiplied by 100.

Source of aggregate data: BFSummary

Note: Facility and patient-level identifiers are fictitious for this report

The footnotes contain information about the rate multipliers for each metric.

Chat and Q & A features are limited to only 1000 participants



Bacteremia and Fungemia Module: Looking Ahead

NHSN Hospital-Onset Bacteremia and Fungemia

Metric	Numerator	Denominator
Hospital-Onset Bacteremia & Fungemia Event	Non-commensal bacteria or fungi from blood culture on hospital day ≥ 4 (excluding patients with prior matching cultures and HOB events)	Total no. of inpatient admissions/inpatient days eligible for HOB event
Outpatient Community-Onset Bacteremia & Fungemia Event	Non-commensal bacteria or fungi from blood culture collected in an ED/OBS location	Total no. ED/OBS Encounters
Inpatient Community-Onset Bacteremia & Fungemia Event	Non-commensal bacteria or fungi from blood culture prior to hospital day 4 (excluding patients with prior matching cultures and COB events)	Total no. of inpatient admissions
Complementary Metrics: For Quality Improvement, NHSN Risk Adjustment		
Blood Culture Utilization	Testing Prevalence: Admissions with at least 1 blood culture	
	Testing Intensity: Total blood cultures among patients with at least 1 blood culture	
Blood Culture Contamination	Skin commensal organism in 1 of 2 blood cultures sets	Total no. of blood culture sets
Matching Commensal HOB Event	Skin commensal from ≥ 2 blood cultures, AND ≥ 5 days of antibiotic treatment	Total no. of inpatient admissions

Chat and Q & A features are limited to only 1000 participants



Next Steps for Users

NHSN Website Has Information About FHIR-based Reporting

Preparing Your Facility for Reporting FHIR Digital Quality Measures (dQMs) to NHSN

[Print](#)

AT A GLANCE

- **Prepare Stakeholders:** Engage key personnel at your facility for the transition to reporting digital quality measures (dQMs) using Healthcare Level Seven International (HL7®) Fast Healthcare Interoperability Resources® (FHIR®).
- **Appoint a Coordinator:** Appoint a staff member to serve as the NHSN dQM Implementation Coordinator to oversee reporting tasks.
- **Task Guide:** Use this page as a resource to prepare for reporting dQMs to NHSN and for compliance tasks.



dQM Readiness webpage provides information on key personnel and action items for facilities preparing to report data via FHIR to NHSN.

<https://www.cdc.gov/nhsn/fhirportal/dqm/fhir-ready.html>

6 KEY ACTION ITEMS

REPORTING FHIR DIGITAL QUALITY MEASURES (dQMs) TO NHSN

	CONNECTIVITY	<p>ENABLE HL7® FHIR® R4 APIs required for reporting NHSN dQMs</p> <p>NHSN FHIR dQMs require specific APIs to be available and exposed in the EHR Production environment for accurate calculation of measures.</p>
	INTEROPERABLE DATA EXCHANGE	<p>ALIGN data with the HL7® FHIR® US Core Implementation Guide</p> <p>NHSN FHIR dQMs will transition to US Core version 6.1.0 and US QI Core version 6.0.0 in calendar year 2026. All FHIR data elements should be compliant with HL7® FHIR® US Core Standardized Terminology and the CDC NHSN dQM Content Package IC, most importantly for "Encounter", "Medication", "Observation", and "Specimen" FHIR resource related profiles. This includes data from third-party lab and pharmacy vendors where local codes are being used.</p>
	ACCURATE PATIENT IDENTIFICATION	<p>NORMALIZE "Encounter" data elements to HL7® FHIR® US Core Standardized Terminology</p> <p>NHSN FHIR dQMs require Encounter.class (valueset), Encounter.class.history, Encounter.location (valueset), and Encounter.type data elements to be <u>complete</u> and normalized per standardized terminology (vs. local codes) for accurate identification of patients of interest for calculation of measures .</p>
	ACCURATE LOCATION IDENTIFICATION	<p>MAP FHIR hospital unit location to NHSN "HSLOC" codes HL7® FHIR® US Core Standardized Terminology</p> <p>NHSN FHIR dQMs require that local codes for FHIR hospital unit locations correlate to NHSN "HSLOC" codes to stratify measures by patient locations.</p>
	ACCURATE CENSUS SUPPORT	<p>ENABLE queries of patient lists to identify eligibility for NHSN FHIR dQMs</p> <p>NHSN FHIR dQMs require an accurate census report to identify patients of interest (including inpatient, emergency department visit, and observation encounters). Examples of ways to report the census include custom Epic API integration via FHIR List and an Oracle Cerner Command Language script to generate a CSV for consumption via SFTP.</p>
	ACCURATE EVENT DETERMINATION	<p>EXPOSE the MedicationAdministration Resource</p> <p>NHSN FHIR dQMs require medication administration data for accurate identification of medication exposures. The FHIR MedicationAdministration resource should be exposed for reporting dQMs to NHSN.</p>



NHSN dQM Implementation Coordinator



The NHSN dQM Implementation Coordinator is crucial for the success of the facility's health system in this effort. This individual will:

- Coordinate with the NHSN Facility Administrator for submission of FHIR dQMs to NHSN.
- Serve as an educator for key personnel at the facility involved with reporting FHIR dQMs to NHSN
- Ensure the IT team is aware of and has implemented [Key Action Items for Reporting FHIR dQMs to NHSN](#) [PDF – 85 MB].
- Share feedback with NHSN about the facility's experience in implementing reporting of FHIR dQMs to NHSN.

- Each facility should identify a dQM Implementation Coordinator to ensure key action items are completed to support dQM reporting

- [Key Action Items](#)



NHSN Acute Care Hospital dQMs

[Print](#)

dQM Resources **dQMs** About

Title	CBE ID*	Download Specifications	Component	Notes
Severe Hypoglycemia	3503e		Medication Safety	
Hospital-onset Bacteremia & Fungemia	3686		Patient Safety	
Healthcare-associated, antibiotic-treated C.difficile Infection	3688		Patient Safety	
Adult Community-onset Sepsis Mortality	TBD		Patient Safety	

NHSN Glycemic Control: Hypoglycemia

[Print](#)

Measure Information Specifications and Measure Resources Technical Release Notes

2025 Reporting Period

NHSN Module Protocol	Glycemic Control
NHSN Protocol	
Headline Metric	Hospital Harm – Severe Hypoglycemia
CMS eCQM ID	CMS816v4
Short Name	HH-Hypo
CBE ID*	
Measure Steward	Centers for Medicare & Medicaid Services (CMS)
Description	The measure assesses the number of inpatient hospitalizations for patients aged 18 and older who were administered at least one hypoglycemic medication during the encounter and who suffer the harm of a severe hypoglycemic event during the encounter
Measure Scoring	Proportion
Measure Type	Outcome
Stratification	None
Risk Adjustment	None

This measure focuses on severe hypoglycemia as an outcome in the hospital inpatient setting. In a study published by the Office of the Inspector General (OIG), in 2018 adverse drug events represented 43% of all adverse events in hospitals among Medicare patients; of those events, hypoglycemia was among the top 5 adverse drug events (Office of the Inspector General, 2022). Inpatient hypoglycemia can be life-threatening and is associated with longer hospital stays and increased medical costs. Severe hypoglycemia (<40 mg/dL) occurs in 2–5% of hospitalized patients with diabetes mellitus, and medication-related hypoglycemic events are common

*Site under development

Questions

Thank you.

For any questions or concerns, contact the NHSN Helpdesk

- **NHSN-ServiceNow** to submit questions to the NHSN Help Desk.
- Access new portal at <https://servicedesk.cdc.gov/nhsncsp>.
- If you do not have a SAMS login, or are unable to access ServiceNow, you can still email the NHSN Help Desk at nhsn@cdc.gov.

For more information, contact CDC

1-800-CDC-INFO (232-4636)

TTY: 1-888-232-6348 <https://www.cdc.gov/>

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

