



NHSN Antimicrobial Use and Resistance (AUR) Module Reporting for the CMS Promoting Interoperability (PI) Program Office Hours

February 7, 2024

Disclaimer

- Slides & answers are based on:
 - Details in the [FY2023 Hospital Inpatient Prospective Payment System \(IPPS\) final rule](#)
 - CMS published AUR reporting specification sheet for CY 2024 PI Program: <https://www.cms.gov/files/document/cy-2024-antimicrobial-use-and-resistance-surveillance-specification-sheet.pdf>

Goals for today

1. Provide insight to the CMS PI Program requirement for AUR Module reporting
2. Answer questions about AUR Module reporting and how it relates to the CMS PI Program
3. Provide additional resources for facilities to review after the webinar



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Agenda

- Overview of the CMS PI Program requirements using most asked questions of the NHSN Helpdesk & during previous presentations
- Presenters will summarize questions asked by attendees in the Q&A and respond
- Some questions may need a more detailed review by the NHSN AUR Team & you may be asked to send them to the team via ServiceNow or NHSN@cdc.gov
- Please send any questions not answered today to the NHSN AUR Team via ServiceNow or NHSN@cdc.gov

Commonly Asked Questions

Question 1

What is the CMS Promoting Interoperability (PI) Program?

CMS PI Program

- Requires eligible hospitals and critical access hospitals to report on objectives and measures to be considered a meaningful EHR user and avoid a downward payment adjustment
- [2023 Program Requirements | CMS](#)

[2023-16252.pdf \(govinfo.gov\)](#) Page 627

TABLE IX.F.-01.: PERFORMANCE-BASED SCORING METHODOLOGY FOR EHR REPORTING PERIODS IN CY 2024

Objective	Measure	Maximum Points	Required/Optional
Electronic Prescribing	e-Prescribing	10 points	Required
	Query of Prescription Drug Monitoring Program (PDMP)	10 points	Required
Health Information Exchange	Support Electronic Referral Loops by Sending Health Information	15 points	Required (eligible hospitals and CAHs must choose one of the three reporting options)
	-AND-		
	Support Electronic Referral Loops by Receiving and Reconciling Health Information	15 points	
	-OR-		
	Health Information Exchange Bi-Directional Exchange	30 points	
	-OR-		
	Enabling Exchange under the Trusted Exchange Framework and Common Agreement (TEFCA)	30 points	
Provider to Patient Exchange	Provide Patients Electronic Access to Their Health Information	25 points	Required
Public Health and Clinical Data Exchange	Report the following five measures: <ul style="list-style-type: none"> Syndromic Surveillance Reporting Immunization Registry Reporting Electronic Case Reporting Electronic Reportable Laboratory Result Reporting Antimicrobial Use and Resistance (AUR) Surveillance 	25 points	Required
	Report one of the following measures: <ul style="list-style-type: none"> Public Health Registry Reporting Clinical Data Registry Reporting 	5 points (bonus)	Optional

Question 2

How do facilities find out if their hospital participates in the CMS Promoting Interoperability (PI) Program?

Most acute care hospitals participate in the CMS PI Program

- Reach out to person(s) in charge of quality reporting within the facility and/or C-suite
- Critical access hospitals are eligible to participate
- Long term care facilities (skilled nursing/nursing home) are not eligible to participate
- Other types of hospitals that provide inpatient care are not included in the CMS PI Program.
 - Inpatient rehab hospitals (IRF)
 - Inpatient psych hospitals (IPF)
 - Long term acute care hospitals (LTCH/LTAC/LTACH)

PI Program eligibility & NHSN AUR reporting

- Reach out to person(s) in charge of quality reporting within the facility and/or C-suite

		CMS Promoting Interoperability	
		Eligible	Not eligible
NHSN AUR Module	Accept data from	<ul style="list-style-type: none"> Acute care hospitals Critical access hospitals 	<ul style="list-style-type: none"> Inpatient rehab hospitals (IRF) Inpatient psych hospitals (IPF) Long term acute care hospitals (LTCH/LTAC/LTACH)
	Do not accept data from	None	Non-hospital facilities, for example: <ul style="list-style-type: none"> Outpatient dialysis clinics Ambulatory surgery centers Long term care facilities (skilled nursing/nursing home)

Question 3

Are AUR Module data required for the CMS PI Program? If so, when does that start?

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

Question 4

What does “active engagement” mean?

Two ways to be in active engagement with NHSN

- Option 1 – Pre-production and validation
 - Registration within NHSN
 - 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
- **Note:** Definitions of active engagement are set by CMS & are the same for other PI Program measures

CMS update on active engagement

- Beginning in CY 2024, facilities can only spend **one** calendar year in Option 1 – Pre-production and validation
- Example:
 - Facility A attested to Option 1 – Pre-production and validation for 2024
 - Facility A must move to Option 2 – Validated data production for 2025
- **Note:** Facilities can move to Option 2 as soon as they are able (specifically, they don't need to wait in Option 1 for 2024 if they have production AUR data ready)



Question 5

What is the reporting period for the CMS PI Program? Do I need to be reporting AUR data into NHSN now?

EHR Reporting Period



- For CY 2024: 180 continuous days

- **Each facility designates their own EHR reporting period**
 - Facility must use the same 180-day period for **ALL** CMS PI Program measures
 - AU and AR data must be reported for the same 180 days

- Examples:
 - January 1–June 30
 - April 1–September 30
 - July 1–December 31

Question 6

How can NHSN users find out their facility's EHR Reporting Period?

Designated by each facility

- Reach out to person(s) in charge of quality reporting within the facility and/or C-suite
 - Check with the person who has access to the [CMS Hospital Quality Reporting \(HQR\) System](#)

Question 7

Will hospitals be expected to separately attest to meeting reporting requirements or exclusion criteria for AU and AR?

No. AUR is a single measure for CMS PI Program

- No partial credit for reporting either AU or AR
- If the facility isn't in active engagement for both AU and AR, they must have an applicable exclusion or report "No"
 - Attesting "No" means the facility would not get credit for the AUR measure and would fail to satisfy the Public Health and Clinical Data Exchange Objective
 - **Failure to fulfill any of the required measures, including the AUR measure, will result in a score of zero for the Promoting Interoperability Program & could be subject to a downward payment adjustment**

Question 8

What are the exclusions for the AUR measure?

Three exclusions currently

1. Does not have any **patients** in any patient care location for which data are collected by NHSN during the EHR reporting period; or
2. Does not have **electronic medication administration records (eMAR)/barcoded medication administration (BCMA)** records or an **electronic admission discharge transfer (ADT)** system during the EHR reporting period; or
3. Does not have an **electronic laboratory information system (LIS)** or **electronic ADT** system during the EHR reporting period.

Notes on exclusions

- NHSN can provide guidance but ultimately CMS must decide whether a specific scenario meets exclusion criteria
 - Reported in CMS Hospital Quality Reporting (HQR)
 - Exclusions are submitted at the same time PI Program attestations are submitted (specifically, last day in February each year)
- Hospitals claiming an exclusion on AU or AR would claim an exclusion on the measure as a whole
 - NHSN encourages facilities to report the data you have available

HQR system: <https://hqr.cms.gov/hqrng/login>

HQR User guide: <https://www.cms.gov/files/document/hqr-user-guide.pdf>

Notes on exclusions continued

- If the eligible hospital does not have access to **discrete** results for all eligible organisms as outlined in the AUR Module Protocol, the hospital may claim an exclusion to the AUR Measure
- Important point is interoperable access to available data

Exclusion examples

1. Example: If *Candida* isolates are sent out for identification and/or AST and return to the facility via PDF or fax then the facility does not have interoperable data and **should claim the exclusion.**
2. Example: If *Candida* isolates cannot be speciated then those isolates are not eligible for AR Option reporting. Facility should **not** claim PI Program exclusion.
3. Example: If *Candida* isolates are speciated but do not have AST performed, then those isolates are not eligible for AR Option reporting. Facility should **not** claim PI Program exclusion.

Question 9

Does CDC/NHSN provide data to CMS?

No, AUR Measure is attestation based

- CDC/NHSN does not provide any data to CMS for this reporting measure
 - Goal of CMS PI Program is to increase interoperable healthcare data exchange
- Facilities must attest to CMS that they are in active engagement with NHSN
 - Attest within the CMS Hospital Quality Reporting (HQR) system:
<https://hqr.cms.gov/hqrng/login>
- NHSN provides documentation to facilities to use as proof

Question 10

What do facilities need to do to meet the AUR reporting piece of the CMS PI Program?

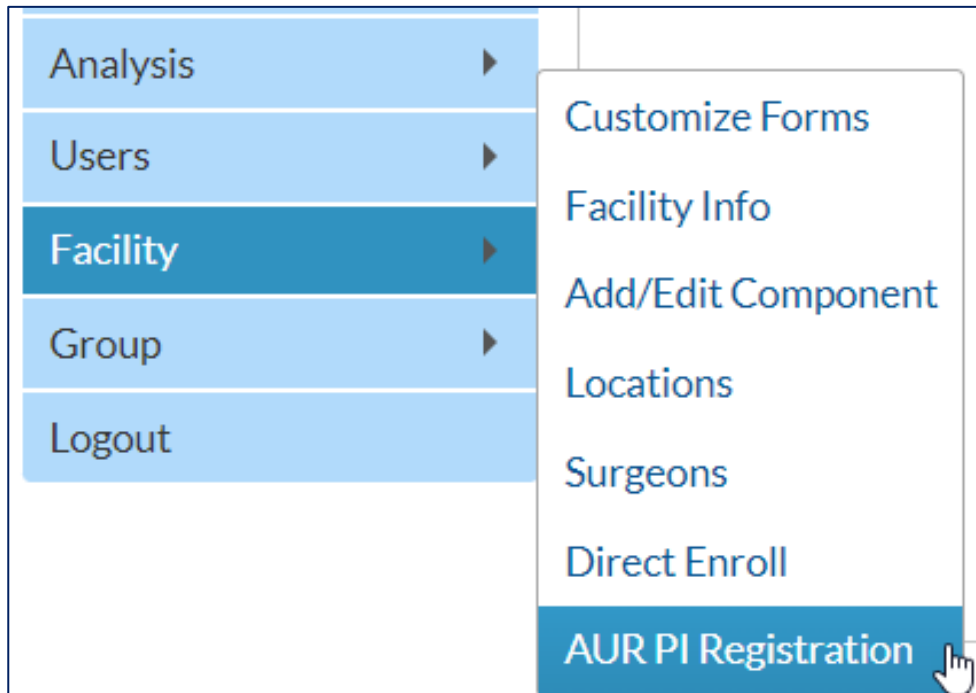
Prerequisites for submitting AUR data for the CMS PI Program

1. Figure out your vendor software situation
 - Certified by ONC and listed on the HealthIT webpage:
<https://chpl.healthit.gov/#/search>
 - Validated by NHSN and listed on the NHSN SDS webpages:
<https://www.cdc.gov/nhsn/cdaportal/sds/au-vendor-list.html> &
<https://www.cdc.gov/nhsn/cdaportal/sds/ar-vendor-list.html>
2. Review Quick Reference Guide: <https://www.cdc.gov/nhsn/pdfs/cda/PHDI-Facility-Guidance-508.pdf>
3. Determine if your facility has done any of the following steps already
 - Over 2,400 facilities have already completed step 1 (registration of intent)



Step 1 – Registration of intent to submit data

- Only the NHSN Facility Administrator can complete this step
- Can add up to two additional email addresses to receive the monthly AUR submission reports



AUR Promoting Interoperability (PI) Program Registration

NHSN Antimicrobial Use and Antimicrobial Resistance reporting has been identified as a measure for public health registry reporting under the CMS Promoting Interoperability (PI) Program (§ 170.315(f)(6)).

By checking this box **Mindy Durrance** registers facility **CDA-XYZ_qa_Test Facility (13860)** intent to satisfy a PI Program objective by submitting NHSN Antimicrobial Use and Antimicrobial Resistance (AUR) monthly data via an electronic interface.

For each year, data intended for inclusion in the annual PI Program status report generated by NHSN must be received no later than the end of January of the following year (i.e., AUR data for 2022 must be reported into NHSN by January 31, 2023).

The below recipients shall receive NHSN PI Program registration confirmation as well as monthly and annual status report emails. Please enter up to two optional additional email addresses that should receive this information regarding your facility's NHSN PI Program status.

NHSN Facility Administrator: [Redacted]
Optional facility PI Program contact: [Redacted]
Optional facility PI Program contact: [Redacted]

Date Registration of Intent Completed: 01/05/2017

Request AUR PI Program Status Report by Year: **Reports**

To complete registration, verify all information on this page and click the SAVE button.

Edit **Back**

Important notes about registration

1. Only completed one time ever
2. Cannot be undone
3. Will immediately kick off the request to send test files to NHSN for validation
4. If you cannot see the registration webpage in NHSN, you are not the NHSN Facility Administrator
5. If the person listed as the NHSN Facility Administrator has left the facility, follow the steps to get that roll reassigned:
<https://www.cdc.gov/nhsn/facadmin/index.html>
6. Not the same as attestation (specifically, no way to designation Option 1 vs Option 2)



Step 2 – Testing and validation of AUR CDA files

- Send 3 files total; 1 test file for each file type:
 - AU
 - AR Event (numerator)
 - AR Denominator
- Ask your vendor for these
- Send to NHSNCDA@cdc.gov

NHSN invites your facility to begin the testing and validation stage. Please send the following test CDAs to the nhsncda@cdc.gov mailbox:

1. Antimicrobial Use Summary CDA
2. Antimicrobial Resistance - Numerator CDA (aka AR Event)
3. Antimicrobial Resistance - Denominator CDA (aka AR Summary)

Important notes about test files

- 1. Send a new email/open a new ticket**
 - Do not reply to existing/old tickets
- 2. Send 1 email/ticket per NHSN orgID**
 - Do not send files for multiple facilities in 1 email/ticket
- 3. Send all 3 files**
 - Must send all 3 files if you'd like a letter saying you've passed validation (last step in Option 1)
 - Must sent all 3 files even if you're already submitting production AU data
- 4. Send as separate .xml files (not a .zip file)**



Step 2 – Testing and validation of AUR CDA files

If your facility is already submitting production AU and AR data, you can skip this step.



Step 3 – Submission of production data

Subject: NHSN AUR Promoting Interoperability (PI) Program Testing and Validation Completed - Ready to Send AUR CDAs to Production

Your facility's Antimicrobial Use Summary, Antimicrobial Resistance – numerator, and Antimicrobial Resistance - denominator (AUR) test CDAs have passed validation.

You may now send all AUR CDAs to the NHSN production environment.

Monthly AUR submission status reports will be automatically generated and emailed to the facility administrator and optional emails listed on the PI Registration page within your NHSN facility.

- Send production AUR data to NHSN monthly
- NHSN will automatically email the NHSN Facility Administrator and optional email contacts a monthly report outlining data submission status

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

Important notes about submitting production data

1. Facilities should upload data on an ongoing basis during their EHR Reporting Period
2. Facilities can report data for months beyond the 180-day EHR Reporting Period
3. While the attestation is at the hospital-level, NHSN encourages facilities to submit AUR data from all inpatient locations individually, Facility-wide inpatient (FacWideIN), and select outpatient locations (ED, pediatric ED, 24hr observation area)*

*Only locations where numerator and denominator can be accurately captured

- Work with your Infection Control team to review/map locations

Question 11

Do facilities to send NHSN test files for validation for “Option 1 – Pre-Production and Validation” if they use a validated vendor?

Yes — Send test files if attesting to Option 1

- If attesting to “Option 1 – Pre-production and Validation”, send test files regardless of the vendor used to submit AUR data
- If attesting to “Option 2 – Validated Production Data”, do not need to send test files for validation

Three Distinct Types of Validation

1. Data validation

- Conducted by the individual facility/system
- Validates data are accurate and complete (e.g., antimicrobial days)

2. CDA file validation

- Part of the CMS PI Program process
- Validates that CDA files pass NHSN business rules (e.g., correct drugs in the file, include all required fields)

Three Distinct Types of Validation continued

3. Vendor software validation

a) NHSN validation: Also known as Synthetic Data Set (SDS) Validation

- Validates vendor software can correctly apply rules of the AUR Protocol

- Required for all vendors:

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

b) ONC certification

- Validated vendor software can generate CDA files that meet format requirements

- Required for all vendors: <https://chpl.healthit.gov/#/search>

Question 12

My hospital already submits AU data to NHSN. Do I need to send AU test files to complete “Option 1 – Pre-Production and Validation”?

Yes — All three files are required

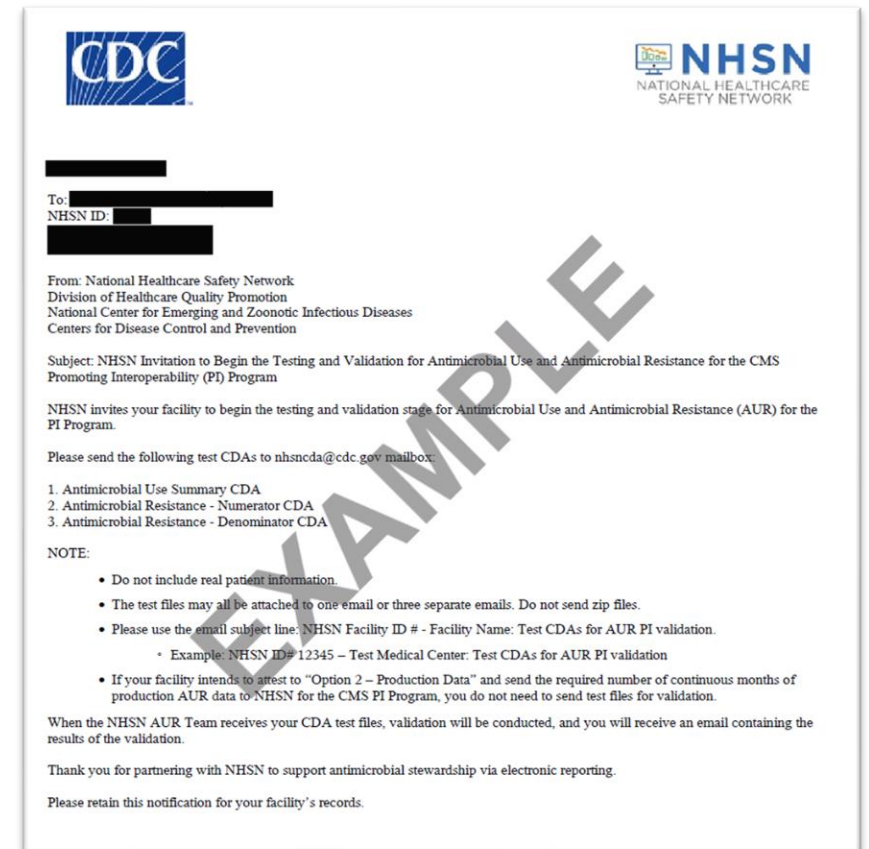
- Submit **one test file of each type (AU Summary, AR Event, and AR Summary)**
 - NHSN cannot send a passing letter without testing all three file types
- If reporting production data for AU but still in the pre-production and validation stage for AR, the hospital would have to complete “Option 1 – Pre-production and Validation” as its overall level of engagement for the measure.
 - Must send all three file types for validation

Question 13

My facility plans to attest to “Option 2 – Validated Data Production”. Why did I receive an email from NHSN asking for test files?

All facilities receive automated request for test files

- The NHSN app automatically sends 2 emails when you register intent to submit AUR Module data for the purposes of the CMS PI Program:
 - Instructions for submitting test files for “Option 1 – Pre-Production and Validation” (sent on the day you register)
 - A reminder to submit test files if your facility has not submitted files after 30 days
 - No need to reply to these emails if planning to send production data



More about the request for test files...

- If your hospital intends to attest to “Option 2 – Validated Production Data”, you can disregard these emails.
- If attesting to “Option 1 – Pre-Production and Validation”
 - Respond to the request for test files within 30 days indicating you registered before having test files ready. **Failure to respond twice within an EHR reporting period will result in that eligible hospital not meeting the measure.**
 - Don’t have test files ready?
 - Send a status update via ServiceNow or to NHSN@cdc.gov at least every 60 days until your hospital has all three test files (AU Summary, AR Event, and AR Summary) ready to send



Question 14

When do facilities need to register & send test files to attest to “Option 1 – Preproduction & Validation” for CY 2024?

It varies...

- Registration should be completed within 60 days of the start of the EHR Reporting Period
 - Note: Facilities should make sure they have test and/or production test files (or almost ready) prior to registering within NHSN
 - After registering, NHSN immediately sends a request for test files
 - Facilities should respond to NHSN requests within 30 days
 - **Failure to respond twice within an EHR reporting period would result in the facility not meeting the measure**
- Ask that facilities submit test files **no later than November 1, 2024**
 - Allows the NHSN team to process the test files

Example timeline for Option 1

- Facility A designates **March 1–August 31** as their 180-day EHR reporting period
- Must register intent to submit AUR data within NHSN by **April 30**
 - CMS specifications: complete registration within 60 days of the start of EHR reporting period
- (to receive a letter back from NHSN showing passing validation) Must send test files no later than **November 1**
 - Send test files as soon as they are ready – no need to wait until Nov 1
 - If not ready 60 days after completing registration, send emailed status updates to NHSN to maintain active engagement status

Question 15

When do facilities need to report AUR data to attest to “Option 2 – Validated Data Production” for CY 2024?

No later than January 31, 2025

- Data should be reported monthly during the EHR Reporting Period
- NHSN automatically sends out status letters on the first day of every month
- Final annual 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

Example timeline for Option 2

- Facility B designates **March 1–August 31** as their 180-day EHR reporting period
- Must register intent to submit AUR data within NHSN by **April 30**
 - CMS specifications: complete registration within 60 days of the start of EHR reporting period
- Must report production AUR data to NHSN for March–August on an ongoing basis
 - NHSN recommends sending the month's data within 30 days of the completion of the month

Question 16

Do the quarterly CMS Quality Reporting Programs deadlines apply to AUR Module reporting for the CMS PI Program?

No — Two separate CMS Programs

- AUR measure within the CMS PI Program does not have quarterly deadlines
- AUR reporting completed on an ongoing basis
- Facilities attest within CMS HQR system once a year (due the last day in February)

Question 17

When and where do facilities complete the PI Program attestations?

Attest within the CMS HQR

- Facilities attest within CMS Hospital Quality Reporting system once a year for the previous year (due the last day in February)
 - Example: Submit attestations for CY 2023 by February 28, 2024
 - Note: This date is subject to change due to weekends, federal holidays, or other changes proposed and finalized in CMS regulations. Date changes are communicated by CMS.
- All PI Program measures are included in the attestation process
- Review CMS PI Program Resource Library for more information:
<https://www.cms.gov/medicare/regulations-guidance/promoting-interopability-programs/resource-library>

Question 18

Where/how do facilities get documentation of active engagement status?

Option 1 Documentation/Verification of Facility Status

- Option 1 – Pre-production & Validation
 - First: email that you've successfully registered & to send test files
 - Sent to NHSN FacAdmin and any optional PI Program users
 - Second: email that your test files pass validation
 - Sent to NHSN FacAdmin and any optional PI Program users
 - Only sent after 1 file for all three types (AU, AR Event, AR Summary) are validated by NHSN

Option 2 Documentation/Verification of Facility Status

- Option 2 – Validated Data Production
 - Monthly email showing AUR data submission status
 - Sent to NHSN FacAdmin and any optional PI Program users
 - Generated the 1st day of each month
 - Annual letter generated February 1st
 - Ad hoc letters can also be generated at any time by the FacAdmin
 - <https://www.cdc.gov/nhsn/pdfs/cda/PHDI-Facility-Guidance-508.pdf>

Subject: PI Program Report of 2023 NHSN AUR data

This notice serves as written confirmation of your CMS Promoting Interoperability (PI) Program status with the National Healthcare Safety Network (NHSN) as of November 29, 2023 for the PI Program Antimicrobial Use and Resistance (AUR) reporting objective according to certification criterion (§ 170.315(f)(6)).

Reporting for this PI Program objective includes reporting of Antimicrobial Use Summary, Antimicrobial Resistance Event, and Antimicrobial Resistance Summary data to NHSN.

For each year, data intended for inclusion in the annual PI Program status report must be uploaded into NHSN no later than the end of January of the following year (i.e., AUR data for 2022 must be reported into NHSN by January 31, 2023).

Registration of Intent Completed: [REDACTED]

The following is a status report of received Antimicrobial Use Summary, Antimicrobial Resistance Event, and Antimicrobial Resistance Summary data per month for 2023.

Month/Year	Antimicrobial Use Summary	Antimicrobial Resistance Events	Antimicrobial Resistance Summary
01/2023	Yes	Yes	Yes
02/2023	Yes	Yes	Yes
03/2023	Yes	Yes	Yes
04/2023	Yes	No	Yes
05/2023	Yes	Yes	Yes
06/2023	Yes	No	No
07/2023	Yes	No	Yes
08/2023	Yes	No	No
09/2023	Yes	Yes	No

Thank you for partnering with NHSN to support antimicrobial stewardship via electronic reporting.

Please retain this notification for your facility's records.

Question 19

Where do I find more information on what data are reported into the AUR Module?

AUR Module Webpage

- Bookmark the link: <https://www.cdc.gov/nhsn/psc/aur/index.html>
- Review the protocol:
<https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf>
- Listen/watch the training webinars:
<https://www.cdc.gov/nhsn/training/patient-safety-component/aur.html>

PI-specific AUR Module Resources

- NHSN/CMS Requirements: <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 2023

[YouTube](#)

[Slide set](#)  [PDF – 3 MB]

[FAQs: AUR Reporting for the CMS Promoting Interoperability Program – October 2023](#)

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

[Office Hours: AUR Module Reporting for the CMS Promoting Interoperability Program – Fall 2023](#)  [PDF – 715 KB]

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

Q&A

Upcoming training opportunities

- Office Hours: NHSN AUR Module for CMS Promoting Interoperability Program
 - Thursday, March 7 from 3:00-4:00 PM Eastern Time
 - Register in advance:
https://cdc.zoomgov.com/webinar/register/WN_LXfukBc8RpmrzWxRyLXNEA

Save the date! 2024 NHSN Annual Training

- Week of March 18–22
 - AUR topics include:
 - AUR Module Reporting for the CMS Promoting Interoperability Program
 - AR Option Standardized Resistant Infection Ratio (SRIR) & Pathogen-specific Standardized Infection Ratio (pSIR)
 - Common AUR Module Data Import Issues and Questions
 - AUR Module Data Quality Validation
 - AUR Module Value Set Resources
 - AUR FAQ session
 - CDC Updates on Hospital Antibiotic Stewardship
 - More information to be shared in the coming weeks

Thank you!

Reach out to us at the NHSN Helpdesk

With SAMS access:

<https://servicedesk.cdc.gov/nhsncsp>

Without SAMS access:

NHSN@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.

