2024
Indian Health Service
Partnership Conference

IHS Certified Health IT - RPMS/EHR

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'ANTIMICROBIAL USE & ANTIMICROBIAL RESISTANCE: MEETING THE AUR MEASURE FOR HOSPITAL PUBLIC HEALTH & PROMOTING INTEROPERABILITY'

Presenting on behalf of IHS OIT/DIT

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Important Acronyms/Terms

NHSN – National Healthcare Safety Network (CDC)

PI – Promoting Interoperability

AU – Antimicrobial Use

AR – Antimicrobial Resistance

AUR – Antimicrobial Use and Antimicrobial Resistance

EH – Eligible Hospital

CAH – Critical Access Hospital

IPPS – Inpatient Prospective Payment System (CMS)

CDA -Clinical Document Architecture

LIS- Laboratory Information System

ADT- Admit, Discharge, Transfer

BCMA- Bar Code Medication Administration

LOINC - Logical Observation Identifiers Names and Codes

SNOMED - Systematized Medical Nomenclature for Medicine

PHA -Public Health Agency

Hospital- Federal & Tribal unless specifically differentiated. (EH/CAH

Today's Objectives for the AUR discussion

- Review the ONC Certified Health IT Certification requirement for the AUR
- Understand the Promoting Interoperability requirement for Public Health reporting objectives for Eligible Hospitals and Critical Access Hospitals
- Understand the AUR Measure and Attesting for Promoting Interoperability.
- Understand which Hospitals will meet all the reporting requirements for the AUR Promoting Interoperability measure.
- Review the AUR Module and the RPMS/EHR software development, support.
- What are the AR and AU?
- Discuss the registration & onboarding process for the IHS Hospitals.
- Steps for a hospital for the AUR to NHSN
- Understand that Local Hospital champions are required for the success of the NHSN reporting.
- Review, revisit Attestation and Options 1 and 2 vs Exclusion

ONC Certified Health IT Certification requirement for the AUR

What is AUR?

The Purpose of the NHSN AUR Module:

NHSN Module provides a mechanism for healthcare facilities to report & analyze AU and/or AR data to inform benchmarking, reduce antimicrobial resistant infections through antimicrobial stewardship, & interrupt transmission of resistant infections at individual healthcare facilities or facility networks.

AU Option – Numerator: antimicrobial days (aka days of therapy) – Denominators: days present & admissions

AR Option – Numerator: isolate level susceptibility results – Denominator: patient days, admissions & encounters

Why AUR?
The Important Government (Agency) Players

Office of the National Coordinator for Health Information Technology. (ONC)

- Responsible for coordinating nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information.
- Certification oversight of Certified EHR vendors.

Centers for Medicare & Medicaid Services (CMS)

- Determines the legislative ruling, regulations and requirements for Promoting Interoperability program.

Centers for Disease Control and Prevention (CDC)

- National Healthcare Safety Network (NHSN)
  - NHSN is the most widely used tracking system for Healthcare Associated Infections (HAI) in the United States. NHSN is used by health care providers to report surveillance data using standardized definitions to identify HAIs.
  - NHSN is the vehicle for reporting the required data to be able to attest YES for the AUR or an exclusion.

IHS Headquarters Office of Information Technology / Division of Information Technology

- Provides ONC Certified and NSHN Validated Health IT software in support of Antimicrobial Use and Antimicrobial Resistance Reporting.
- §170.315(f)(6) Transmission to Public Health Agencies Antimicrobial Use and Resistance reporting as part of the 21st Century Cures Update.

CMS History for PI incentive programs

- **In 2011, the Centers for Medicare and Medicaid Services (CMS) established the Medicare and Medicaid Electronic Health Record (EHR) Incentive Programs** to encourage eligible professionals (EPs), eligible hospitals, and critical access hospitals (CAHs) to adopt, implement, upgrade, and demonstrate meaningful use of certified electronic health record technology (CEHRT).

- **CMS renamed the EHR Incentive Programs to the Medicare and Medicaid Promoting Interoperability Programs in April 2018.** This change moved the programs beyond the existing requirements of meaningful use to a new phase of EHR measurement with an increased focus on interoperability and improving patient access to health information.

- **Beginning in calendar year (CY) 2022, the Medicaid Promoting Interoperability Program ended. The program is currently known as the Medicare Promoting Interoperability Program for eligible hospitals and CAHs**.

History (continued)

On August 28, 2023, CMS released the Fiscal Year (FY) 2024 Medicare Hospital **Inpatient Prospective Payment System (IPPS)** for Acute Care Hospitals and Long-term Care Hospital Prospective Payment System Final Rule. **The Antimicrobial Use & Antimicrobial Reporting attestation for Promoting Interoperability is required.**

The 2023 IPPS rule expands the list of required public health measures under the Promoting Interoperability Program to include antimicrobial use and resistance (AUR) surveillance. Beginning in 2024, to earn full credit under the Public Health Objective (*there are now five required*), hospitals must report AUR data to CDC's National Healthcare Safety Network (NHSN).

To complete this reporting, **hospitals must use health IT certified under ONC's certification program** to the "Transmission to public health agencies — antimicrobial use and resistance reporting" certification criterion.

§ 170.315 (f)(6) *Transmission to public health agencies – antimicrobial use and resistance reporting*— Create antimicrobial use and resistance reporting information for electronic transmission to a PHA.

Promoting Interoperability requirement for Public Health reporting - AUR

AUR Module data REQUIREMENTS 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.**
- ***The Measure* includes the submission of both AU and AR Option data**
- For CY 2024 Hospitals will attest to either:
  - Being in active engagement with NHSN to submit AUR data = YES

    or
  - Claim an applicable exclusion

https://www.cms.gov/regulations-and-guidance/legislation/ehrincentiveprograms

CMS PI : **Public Health & Clinical Data Exchange Objectives for Hospitals**

170.315 (f)(1) Transmission to Immunization Registries

170.315 (f)(2) Transmission to public health agencies – Syndromic Surveillance

170.315 (f)(3) Transmission to public health agencies – Reportable Laboratory Test Values and Values/Results

170.315 (f)(5) Transmission to public health agencies – Electronic Case Reporting

170.315 (f)(6) Transmission to public health agencies – antimicrobial use and resistance reporting

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: • 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: • Public Health Registry Reporting • Clinical Data Registry Reporting	5 points (*bonus*)	Optional

Meet the Measure:

Antimicrobial Use and Resistance (AUR) Surveillance Reporting:

The EH or CAH is in active engagement with the Centers for Disease Control & Prevention's (CDC's) National Healthcare Safety Network (NHSN) to submit antimicrobial use and resistance (AUR) data for the electronic health record (EHR) reporting period and receives a report from NHSN indicating their successful submission of AUR data for the EHR reporting period.

Two ways for an IHS EH/CAH 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 the EHR Reporting Period.

Note: Definitions of active engagement are set by CMS & are the same for other Public Health & Clinical Data Exchange Objective PI Program measures.

Remember, because AUR is a single measure for the CMS PI Program, both AU and AR must be reported for the same continuous 180 days to get credit.

Recent CMS Update on active engagement

Hospitals can only spend 2024 in Option Year 1 – pre-production & validation.

Example:

- Facility A attested to OY1 for 2024 = Pre-production & Validation
- Facility A attested to OY2 for 2025 = Validated production data

Note: Our hospitals can move to Option Year 2 immediately if able.

EHR Reporting Period

For CY 2024: 180 continuous days

Each facility designates their own EHR reporting period – The 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

- 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)

THREE Current EXCLUSIONS

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.

Hospitals enter exclusion in the CMS Hospital Quality Reporting (HQR) system & CMS reviews

HQR system: https://hqr.cms.gov/hqrng/login
HQR User guide: https://www.cms.gov/files/document/hqr-user-guide.pdf

The AUR Measure is attestation based

- CDC/NHSN does not provide any data to CMS for this reporting measure
  - Goal of the CMS PI Program is to increase interoperable healthcare data exchange
    - No AU data is shared with NHSN. Aggregated counts by month & location.
    - No dose, duration or indication.

- 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**

Prerequisites for Hospitals - AUR data submission for the CMS PI Program

1. Use certified & validated EHR –> **RPMS/EHR is certified to the § 170.315 (f)(6) Transmission to public health agencies – antimicrobial use and resistance reporting (March 2024)**

✓Certified by ONC and listed on the HealthIT webpage for IHS as a Certified EHR vendor: https://chpl.healthit.gov/#/listing/10848

2. Validation with 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

Prerequisites for Hospitals – continued…
AUR data submission for the CMS PI Program

3. Recommend review of NHSN Quick Reference Guide:
   https://www.cdc.gov/nhsn/pdfs/cda/PHDI-Facility-Guidance-508.pdf

4. Determine if your facility has completed registration with NHSN for the Patient Safety Component!

Can IHS EH/CAH participate in the AR Option?

YES! IHS Hospitals that have:

- **Electronic Laboratory Information System (LIS)** and
- **Admission Discharge Transfer (ADT) System**
- Or electronic access to required data elements
- Commercial software vendor or "homegrown" internal IT/informatics resources that pass AR Option Synthetic Data Set (SDS) validation (NHSN).

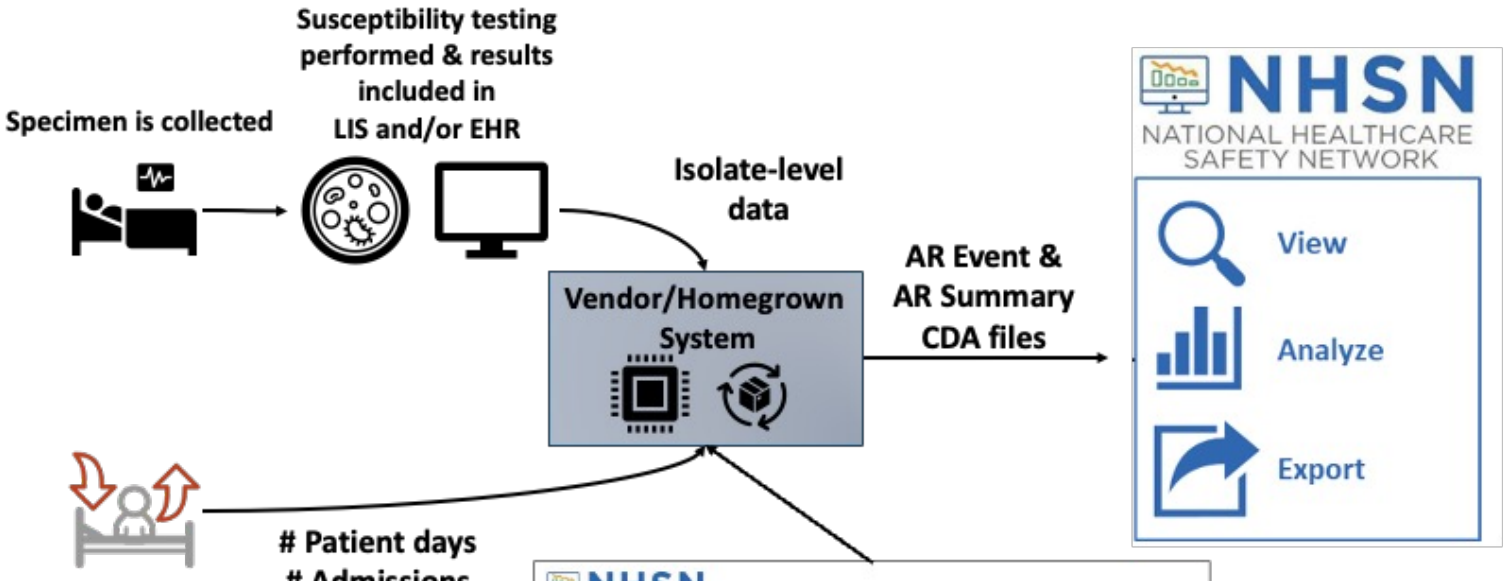
- Data cannot be typed in by hand

Remember for Hospitals - EH/CAH

- AU and AR are both required to submit an attestation of YES to CMS.
  - We are going to discuss this more.
- The inability to report *either* AU or AR *or both* re submission to CMS.
  - We are going to discuss this more.
- **Either will meet the measure.**

Overview of the AR and AU Modules.

Flow of AR Data: From Bedside to NHSN



https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf

LIS: Laboratory Information System
EHR: Electronic Health Record
ADT: Admission Discharge Transfer system
CDA: Clinical Document Architecture

RPMS installations required for AUR Reporting to NHSN

Must have the following installed:

1.	APSPp1034IHS Pharmacy MOD (APSP)	03/01/24 release
2.	ATXp51Taxonomy (ATX)	03/27/24 release
3.	LRp1054 Laboratory Reference (LR)	02/20/24 release
4.	**LRp1055**Laboratory Reference (LR)	06/21/24 release
5.	**BCERp8.0**Certified Electronic Health Record Check	06/21/24 release

No changes in the RPMS/EHR user interface or routine clinical workflow for Lab or Pharmacy partners.

Install LRp1055 and BCERp8.0 regardless of laboratory microbiology workflow.

AR Reporting Requirements

AR Event Required Fields

Patient information - DOB, gender, date admitted to facility, location during specimen collection

Specimen information - Collection date, specimen source

Organism & antimicrobial susceptibility testing information

Reporting Rules –Invasive Sources

Per 14 day period: Same organism from invasive specimen source (**blood & CSF**) reported once per patient

Reporting Rules –Non-Invasive Sources

Per calendar month: Same organism from non-invasive source (**urine & lower respiratory**) reported once per patient

AR Summary Files

Summary record: patient days & admissions Submitted for facility-wide only (aka FacWideIN)

Use same definitions as HAI Modules

- Summary records are not submitted for: Individual inpatient locations
- Individual or combined outpatient locations

Only 1 AR Summary file is submitted per facility, per month

AR Monthly Reporting Details – cont'd

Monthly AR Data Submission

Recommend: Upload within 30 days following the completion of the month.

1 CDA file per AR Event & 1 CDA file for summary data

- Example: 50 separate CDA files for 50 separate AR Events identified per NHSN definitions in the month

1 CDA for facility-wide summary (patient days and admissions for all inpatient locations combined)

All CDA files can be uploaded within 1 Zip file - Maximum: 1000 CDAs or file size of 2 MB per zip file

Monthly Reporting Plans

Add locations to monthly reporting plan prior to uploading data.

Selecting FacWideIN allows AR Events to be reported from all mapped inpatient locations

Each outpatient location is listed separately

Same monthly reporting plan used for HAI reporting

Importing CDA Files into NHSN

Manual upload

Automatic upload from vendor/IT solution using DIRECT CDA Automation

AR Eligible Organisms

All *Acinetobacter species*

Candida albicans

Candida auris

Candida glabrata

Candida parapsilosis

Candida tropicalis

Citrobacter amalonaticus

Citrobacter freundii

Citrobacter koseri

All *Enterobacter species*

All *Enterococcus species*

Escherichia coli

Klebsiella aerogenes

Klebsiella oxytoca

Klebsiella pneumonia

Morganella morganii

Proteus mirabilis

Proteus penneri

Proteus vulgaris

Pseudomonas aeruginosa

Serratia marcescens

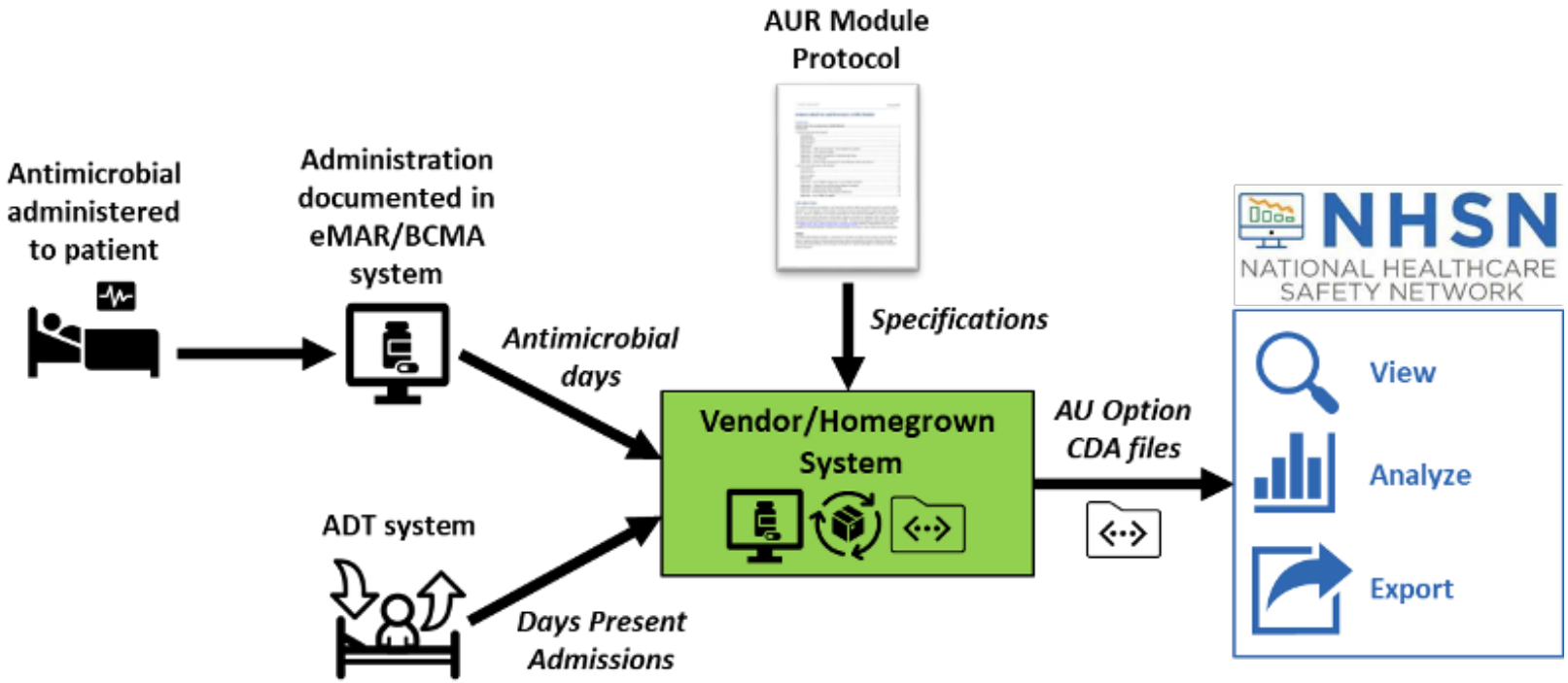
Staphylococcus aureus

Stenotrophomonas maltophilia

Streptococcus agalactiage

Streptococcus pneumoniae

Flow of AU Data: From Bedside to NHSN



AU Eligible Antimicrobial Agents

- Each year NHSN adds and removes reportable AU Option antimicrobial agents
- In CY 2024 NHSN has designated 96 antimicrobial agents as eligible for reporting
- Eligible antimicrobials can be viewed at:
  - Appendix B of NHSN Antimicrobial Use and Resistance (AUR) Module https://www.cdc.gov/nhsn/pdfs/pscmanual/11pscaurcurrent.pdf
  - Additional details including reportable codes and dates of reporting eligibility can be found at https://www.cdc.gov/nhsn/xls/aur/aur-eligible-antimicrobial-agents.xlsx

AU Reporting – Antimicrobial Agents

- **Reportable antimicrobial agents are identified by RxNorm (aka RxCUI) codes**
  - Allows for a standardized method of identifying antimicrobial agents
- **RxNorm codes are automatically populated in the local RPMS Drug File**
  - Accurate RPMS Drug File entries are dependent on diligent entry and upkeep by local Pharmacy Informaticist
- **RxNorm for the administered medication is populated in the RPMS BCMA Medication Log file:**

When the medication is scanned in the BCMA application by the nurse user at the time of medication administration

- **RxNorm code mapping:**
  - Local RPMS Drug File RxNorm fields are populated with the PRODUCT specific RxNorm code
  - NHSN requires INGREDIENT level RxNorm code to be reported
  - The product specific RxNorm is mapped to ingredient level RxNorm using entries in the RPMS ATX PRODUCT INGREDIENT MAP file

AU Reporting – Medication Routes

- Only agents administered via Intravenous, Intramuscular, Digestive Tract, and Respiratory Tract are eligible for AU reporting
- Eligible routes are identified in the RPMS Orders file in the order that corresponds to the medication documented in BCMA

AU Report to NHSN

- Generated Antimicrobial Use Report from RPMS includes:
  - Facility wide summary of all 96 NSHN eligible antimicrobial agents with breakdown of administration by the four identified routes of administration
  - Location (ward) specific summary of all 96 NSHN eligible antimicrobial agents with breakdown of administration by the four identified routes of administration

For the AUR and Promoting Interoperability - IHS Health IT VIPs

Eligible Hospital

- **Promoting Interoperability Coordinator**
- **NHSN Facility Administrator**
- Laboratory Information Consultant/Informatics and Supervisor
- Pharmacy Director
- Pharmacist Informaticist
- Antimicrobial Stewardship Coordinator
- Infection Control
- Information Technology Support (IRM)

Area Office

- **Area Promoting Interoperability Coordinator**
- Area Pharmacy Coordinator
- Area Laboratory Consultant

Challenges for the AR data collection, reporting

IHS EH/CAH Antimicrobial Resistance reporting info & our concerns:

Laboratory results data from the electronic health record system (EHRs) can be used to populate the AR Option numerator records submitted to NHSN in healthcare settings where the LIS is directly connected to the EHRs.

The AR Option obtains denominators of patient days and admissions from the ADT system.

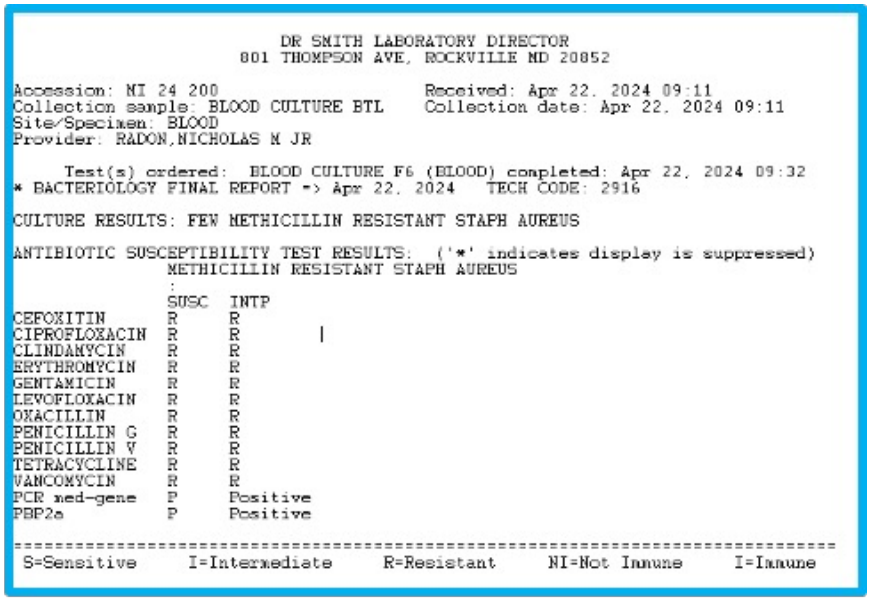
Facilities must not employ manual means of data collection to report AR Option data to NHSN**. 100% Electronic.**

Facilities that do not have access to discrete data elements needed for AR Option reporting are not eligible to participate in the AR Option.

- For example, facilities receiving results via PDF or fax will not be able to participate in the AR Option as those data are not saved as discrete fields.

IHS Hospitals relying on RPMS Microbiology culture reporting:

Discrete Antimicrobial results mapped to LOINC and Organism SNOMED transmitted in the associated patient V MICRO visit files. **Extractable**



```
                    DR SMITH LABORATORY DIRECTOR
                  801 THOMPSON AVE, ROCKVILLE MD 20852

Accession: MI 24 200                    Received: Apr 22, 2024 09:11
Collection sample: BLOOD CULTURE BTL    Collection date: Apr 22, 2024 09:11
Site/Specimen: BLOOD
Provider: RADON,NICHOLAS M JR

     Test(s) ordered:  BLOOD CULTURE F6 (BLOOD) completed: Apr 22, 2024 09:32
* BACTERIOLOGY FINAL REPORT => Apr 22, 2024   TECH CODE: 2916

CULTURE RESULTS: FEW METHICILLIN RESISTANT STAPH AUREUS

ANTIBIOTIC SUSCEPTIBILITY TEST RESULTS:  ('*' indicates display is suppressed)
                METHICILLIN RESISTANT STAPH AUREUS
                :
                SUSC  INTP
CEFOXITIN       R     R
CIPROFLOXACIN   R     R
CLINDAMYCIN     R     R
ERYTHROMYCIN    R     R
GENTAMICIN      R     R
LEVOFLOXACIN    R     R
OXACILLIN       R     R
PENICILLIN G    R     R
PENICILLIN V    R     R
TETRACYCLINE    R     R
VANCOMYCIN      R     R
PCR mec-gene    P     Positive
PBP2a           P     Positive

================================================================================
 S=Sensitive     I=Intermediate     R=Resistant     NI=Not Immune     I=Immune
```

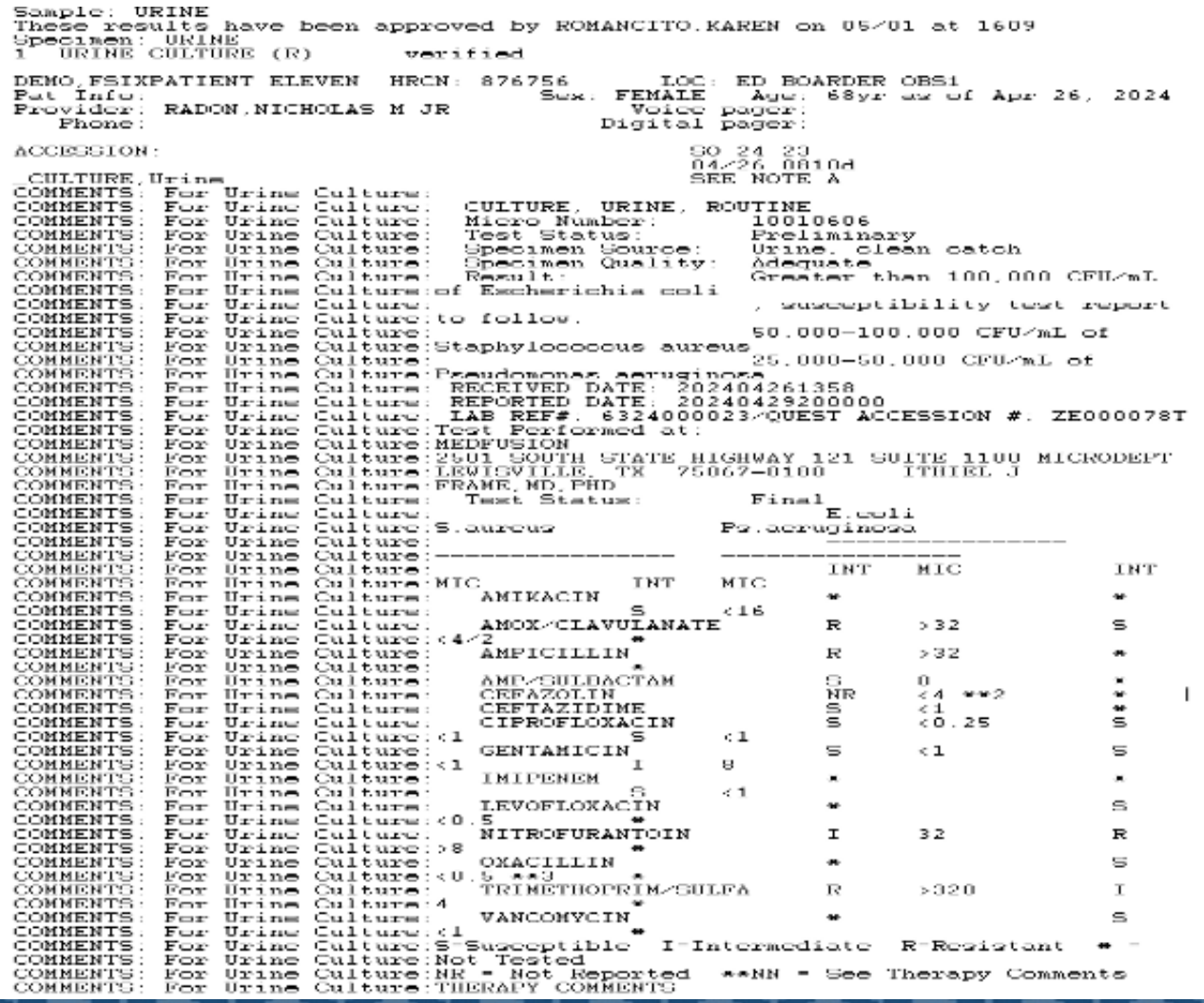
```
NUMBER: 115295                          CULTURE: BLOOD CULTURE F6 (BLOOD)
  PATIENT NAME: DEMO,FSIXPATIENT THREE  VISIT: APR 22, 2024@09:10
  ORGANISM: METHICILLIN RESISTANT STAPH AUREUS
  LR ACCESSION NO.: MI 24 200           RESULT: FEW
  COLLECTION SAMPLE: BLOOD CULTURE BTL  COMPLETE DATE: APR 22, 2024@09:32
  ORGANISM SNOMED: 115329001            UID: 4024000200
  ORDER: 3111                           SOURCE OF DATA INPUT: LAB
  CURRENT STATUS FLAG: RESULTED         ICD CODE: R50.9
  LOINC CODE: 600-7
  COLLECTION DATE AND TIME: APR 22, 2024@09:11:37
  ORDERING PROVIDER: RADON,NICHOLAS M JR
  CLINIC: LABORATORY SERVICES           PARENT: BLOOD CULTURE F6 (BLOOD)
  ORDERING DATE: APR 22, 2024@09:11:37  ORDERING LOCATION: GEN L&D WARD
  DATE/TIME ENTERED: APR 22, 2024@09:32:18
  ENTERED BY: ROMANCITO,KAREN
  DATE/TIME LAST MODIFIED: APR 22, 2024@09:32:18
  LAST MODIFIED BY: ROMANCITO,KAREN     CPT PTR: BLOOD CULTURE (MI)
  PROVIDER NARRATIVE: Fever
SNOMED CT: 370838013
  ORGANISM SNOMED PREF TERM (c): Methicillin resistant Staphylococcus aureus
```

```
NUMBER: 115296                          CULTURE: BLOOD CULTURE F6 (BLOOD)
  PATIENT NAME: DEMO,FSIXPATIENT THREE  VISIT: APR 22, 2024@09:10
  ORGANISM: METHICILLIN RESISTANT STAPH AUREUS
  ANTIBIOTIC: CLINDAMYCIN               LR ACCESSION NO.: MI 24 200
  RESULT: R                             COLLECTION SAMPLE: BLOOD CULTURE BTL
  COMPLETE DATE: APR 22, 2024@09:32     ORGANISM SNOMED: 115329001
  ANTINICRO SUSCEPT LOINC: 18908-4      UID: 4024000200
  ORDER: 3111                           SOURCE OF DATA INPUT: LAB
  ICD CODE: R50.9                       LOINC CODE: 600-7
  COLLECTION DATE AND TIME: APR 22, 2024@09:11:37
  ORDERING PROVIDER: RADON,NICHOLAS M JR
  CLINIC: LABORATORY SERVICES           PARENT: BLOOD CULTURE F6 (BLOOD)
  ORDERING DATE: APR 22, 2024@09:11:37  ORDERING LOCATION: GEN L&D WARD
  DATE/TIME ENTERED: APR 22, 2024@09:32:18
  ENTERED BY: ROMANCITO,KAREN
  DATE/TIME LAST MODIFIED: APR 22, 2024@09:32:18
  LAST MODIFIED BY: ROMANCITO,KAREN     CPT PTR: BLOOD CULTURE (MI)
  PROVIDER NARRATIVE: Fever
SNOMED CT: 370838013
  ORGANISM SNOMED PREF TERM (c): Methicillin resistant Staphylococcus aureus
  ANTIBIOTIC SUSCEPT SHORT NAME (c): CLINDAMYCIN SUSC ISLT
```

IHS Hospitals using an RPMS Reference Lab interface:

Non-Discrete Antimicrobial results

Cannot be extrapolated for data extraction. Results are missing LOINC (Antimicrobial) and SNOMED (Pathogenic Isolate) required mapping.



```
Sample: URINE
These results have been approved by ROMANCITO,KAREN on 05/01 at 1609
Specimen: URINE
1  URINE CULTURE (R)          verified

DEMO,FSIXPATIENT ELEVEN   HRCN: 876756        LOC: ED BOARDER OBS1
Pat Info:                      Sex: FEMALE     Age: 68yr as of Apr 26, 2024
Provider: RADON,NICHOLAS M JR              Voice pager:
   Phone:                                Digital pager:

ACCESSION:                                      SO 24 23
                                                04/26 0810d
 CULTURE,Urine                                  SEE NOTE A
COMMENTS: For Urine Culture:
COMMENTS: For Urine Culture:   CULTURE, URINE, ROUTINE
COMMENTS: For Urine Culture:   Micro Number:          10010606
COMMENTS: For Urine Culture:   Test Status:           Preliminary
COMMENTS: For Urine Culture:   Specimen Source:       Urine, clean catch
COMMENTS: For Urine Culture:   Specimen Quality:      Adequate
COMMENTS: For Urine Culture:   Result:                Greater than 100,000 CFU/mL
COMMENTS: For Urine Culture:of Escherichia coli
COMMENTS: For Urine Culture:                          , susceptibility test report
COMMENTS: For Urine Culture:to follow.
COMMENTS: For Urine Culture:                          50,000-100,000 CFU/mL of
COMMENTS: For Urine Culture:Staphylococcus aureus
COMMENTS: For Urine Culture:                          25,000-50,000 CFU/mL of
COMMENTS: For Urine Culture:Pseudomonas aeruginosa
COMMENTS: For Urine Culture:   RECEIVED DATE: 2024042613S8
COMMENTS: For Urine Culture:   REPORTED DATE: 20240429200000
COMMENTS: For Urine Culture:  LAB REF#. 63240000023/QUEST ACCESSION #. ZE000078T
COMMENTS: For Urine Culture:Test Performed at:
COMMENTS: For Urine Culture:MEDFUSION
COMMENTS: For Urine Culture:2501 SOUTH STATE HIGHWAY 121 SUITE 1100 MICRODEPT
COMMENTS: For Urine Culture:LEWISVILLE, TX  75067-0100      ITHIEL J
COMMENTS: For Urine Culture:FRAME,MD,PHD
COMMENTS: For Urine Culture:   Test Status:          Final
COMMENTS: For Urine Culture:                              E.coli
COMMENTS: For Urine Culture:S.aureus                  Pg.aeruginosa
COMMENTS: For Urine Culture:                                          ----------
COMMENTS: For Urine Culture:----------------   ----------
COMMENTS: For Urine Culture:                                  INT    MIC            INT
COMMENTS: For Urine Culture:MIC          INT   MIC
COMMENTS: For Urine Culture:    AMIKACIN                      *                     *
COMMENTS: For Urine Culture:              S    <16
COMMENTS: For Urine Culture:    AMOX/CLAVULANATE              R      >32            S
COMMENTS: For Urine Culture:<4/2          *
COMMENTS: For Urine Culture:    AMPICILLIN                    R      >32            *
COMMENTS: For Urine Culture:              *
COMMENTS: For Urine Culture:    AMP/SULBACTAM                 S      0              *
COMMENTS: For Urine Culture:    CEFAZOLIN                     NR     <4 **?         *
COMMENTS: For Urine Culture:    CEFTAZIDIME                   S      <1             *
COMMENTS: For Urine Culture:    CIPROFLOXACIN                 S      <0.25          S
COMMENTS: For Urine Culture:<1            S    <1
COMMENTS: For Urine Culture:    GENTAMICIN                    S      <1             S
COMMENTS: For Urine Culture:<1            I    8
COMMENTS: For Urine Culture:    IMIPENEM                      *                     *
COMMENTS: For Urine Culture:              S    <1
COMMENTS: For Urine Culture:    LEVOFLOXACIN                  *                     S
COMMENTS: For Urine Culture:<0.5          *
COMMENTS: For Urine Culture:    NITROFURANTOIN                I      32             R
COMMENTS: For Urine Culture:>8            *
COMMENTS: For Urine Culture:    OXACILLIN                     *                     S
COMMENTS: For Urine Culture:<0.5 **S      *
COMMENTS: For Urine Culture:    TRIMETHOPRIM/SULFA            R      >320           I
COMMENTS: For Urine Culture:4             *
COMMENTS: For Urine Culture:    VANCOMYCIN                    *                     S
COMMENTS: For Urine Culture:<1            *
COMMENTS: For Urine Culture:S-Susceptible  I-Intermediate  R-Resistant  * -
COMMENTS: For Urine Culture:Not Tested
COMMENTS: For Urine Culture:NR - Not Reported  **NN - See Therapy Comments
COMMENTS: For Urine Culture:THERAPY COMMENTS
```

Current Status for AR reporting – IHS EH/CAH

- IHS has 11 Federal/Tribal Hospitals utilizing a **MICRO LIS; use ADT and the BCMA**. = AUR to NHSN
- IHS has 16 Federal/Tribal Hospitals reliant on **REF LAB MICRO** reporting; **using ADT and the BCMA =** AU only is they choose to for the remainder of CY 2024.
- IHS has 7 Federal/Tribal CAHs reliant on **REF LAB MICRO** reporting; **use of ADT and BCMA is not 100% consistent =** AU only is they choose to for the remainder of CY 2024.

Lesson(s) learned for RPMS/EHR software rollout in support of the AUR:

The AUR software was released in the namespace LR Laboratory – the software would have better exposure if the software was released in a new namespace. Having the software released in an RPMS Laboratory patch may have confused all clinical informatics, information specialists, promoting interpretability and NHSN coordinators at the IHS facilities because they must have believed the patch was related to the clinical laboratory software.

NHSN steps for AUR – from the 30,000 foot level

1-800-Call-Karen or itsupport@ihs.gov

The OIT RPMS EHR software application team has completed the following: software development and testing, successful certification, and software deployment; and as a vendor - submitted the Antimicrobial Use (AU) & Antimicrobial Resistance (AR) Synthetic Data Set (SDS) AUR software to NHSN for validation and **passed the AU & AR SDA validation**!

It is important to complete the following steps as soon as possible, please let team know if you would like a conference call to help you with these steps.

1. Confirm your hospital submitted the intent to submit data. Once a facility submits the intent, they will receive a letter via email.
2. Replace the OID number with your assigned OID number.
3. Confirm your OID number on the NHSN web portal.
4. Review your location wards in RPMS and the NHSN web portal, they need to match.
5. Run the TEST menu option to capture files for AR and AU files.
6. Send the files via secure email to OIT AUR support team.
7. Once the three test files are reviewed/validated by the OIT AUR support team, the files will be sent back to you via secure email.
8. Your hospital emails the three test files to the NHSN CDS Helpdesk (NHSNCDA@cdc.gov) via secure email.

Attestation YES/NO, Exclusions

Is an Exclusion bad?

Reminder:

1. Does not have any **patients** in any patient care location for which data are collected by NHSN during the EHR reporting period; or Hospitals enter exclusion in the CMS Hospital Quality Reporting (HQR) system & CMS reviews

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.

Hospitals enter exclusion in the CMS Hospital Quality Reporting (HQR) system & CMS reviews

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

- 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 that is available
  i.e.) AU

“Crikey! We have exclusions for AR (or AU) – what do we do?”

- Upon attestation with CMS, enter the exclusion for not meeting the measure for CY 2024.
  - The exclusion is entered into the Quality Net System, CMS URL.

- Is this bad for the hospital Promoting Interoperability points?
  - **Exclusions met do count towards the measure**. Breathe, it’s okay.

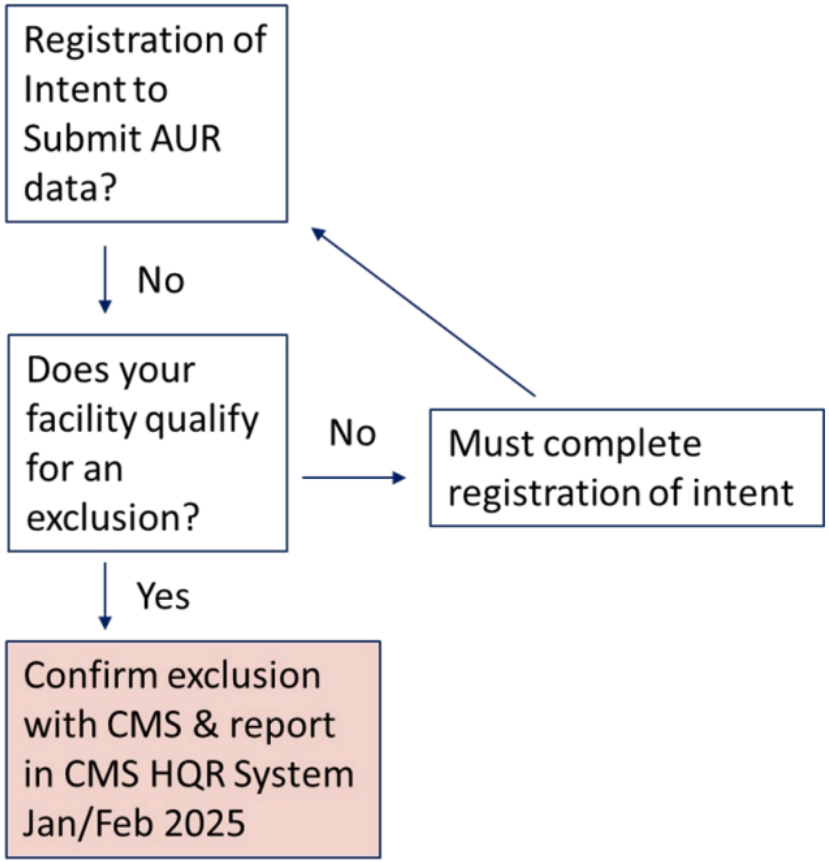
- **If an IHS EH/CAH meets any of the three exclusions:**
  - Make sure that your hospital has installed the RPMS LRp1055 KIDS.
  - Submit the Exclusion

Does not have any patients in any patient care location for which data are collected by NHSN during the EHR reporting period; or

Does not have barcoded medication administration (BCMA) records or an electronic admission discharge transfer (ADT) system during the EHR reporting period; or

Does not have an electronic laboratory information system (LIS) or electronic ADT system during the EHR reporting period.

Status for Attestation: Exclusion



What is ‘active engagement’ for the AUR?

Active Engagement: This means that the eligible hospital or CAH is in the process of moving towards sending "production data" to NHSN or is sending production data to NHSN.

Active Engagement Option 1:

Pre-production and Validation: The eligible hospital or CAH registered to submit data within NHSN; registration was completed within 60 days after the start of the EHR reporting period; and the eligible hospital or CAH is awaiting an invitation from NHSN to begin testing and validation. Then, the eligible hospital or CAH begins the process of testing and validating the electronic submission of data.

Eligible hospitals or CAHs must respond to requests from NHSN within 30 days; failure to respond twice within an EHR reporting period would result in that eligible hospital or CAH not meeting the measure.

Note: This option allows eligible hospitals or CAHs to meet the measure when NHSN has limited resources to initiate the testing and validation process. Eligible hospitals or CAHs that have registered in previous years do not need to submit an additional registration to meet this requirement for each EHR reporting period.

Active Engagement (continued)

Active Engagement Option 2:

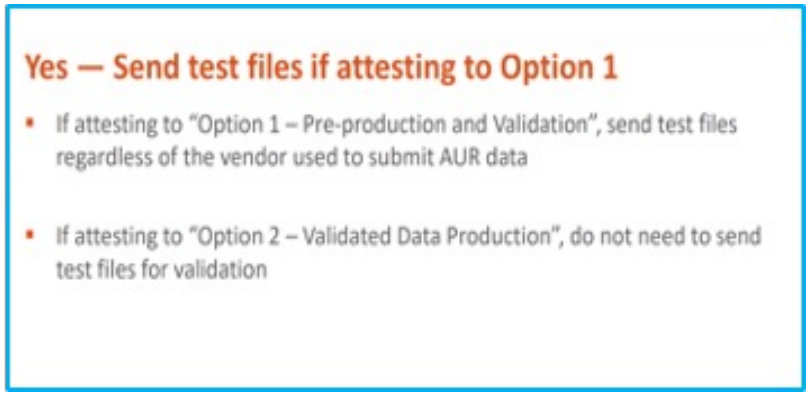
Validated Data Production: The eligible hospital or CAH has completed testing and validation of the electronic submission and is electronically submitting production data to NHSN.

Production Data: Refers to data generated through clinical processes involving patient care, and it is used to distinguish between data and "test data" which may be submitted for the purposes of enrolling in and testing electronic data transfers.

Two ways for an IHS EH/CAH 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



Note: Beginning in CY 2024, facilities can only spend one calendar year in Option 1 (pre-production and validation)

Option 1 – Pre-production & Validation

- **Registration with NHSN 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**

Note: Facilities should make sure they have test and/or production test files (or almost ready) prior to registering within NHSN

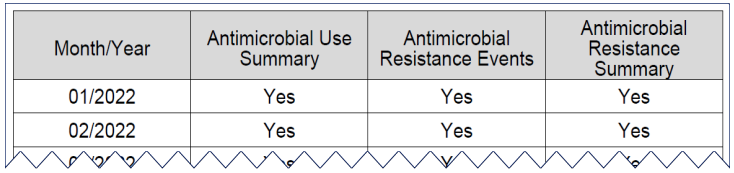
REMEMBER: Send email updates of progress if you registered before test files are ready

- Hospitals are supposed to reply to requests from NHSN within 30 days
  - Failure to respond twice will result in that hospital not meeting the measure
- If you've registered intent but don't have test files ready, email NHSNCDA@cdc.gov a status report at least every 60 days until your test files are ready
  - General email sharing progress towards getting test files

Option 2 – Validated data production

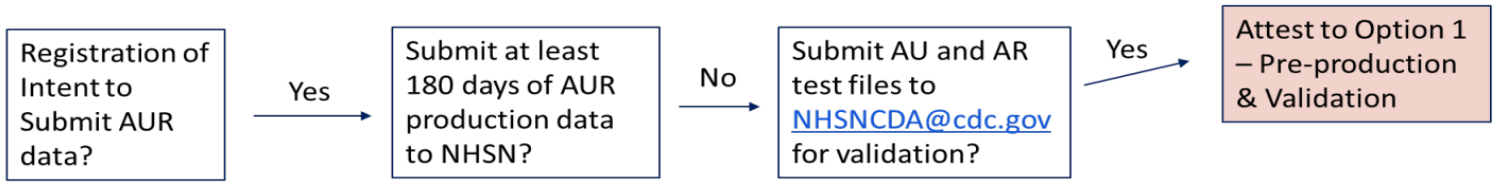
- Per CMS PI Program guidance: Facilities should report data on an ongoing basis during EHR reporting period
- NHSN automatically sends out status letters on the first day of every month
- Final annual letter sent out on February 1 showing previous year's submissions
  - **Submit all relevant AUR data to NHSN no later than January 31, 2025 to be included on the annual report sent to facilities on February 1.**

Note: Facilities should make sure they have test and/or production test files (or almost ready) prior to registering within NHSN

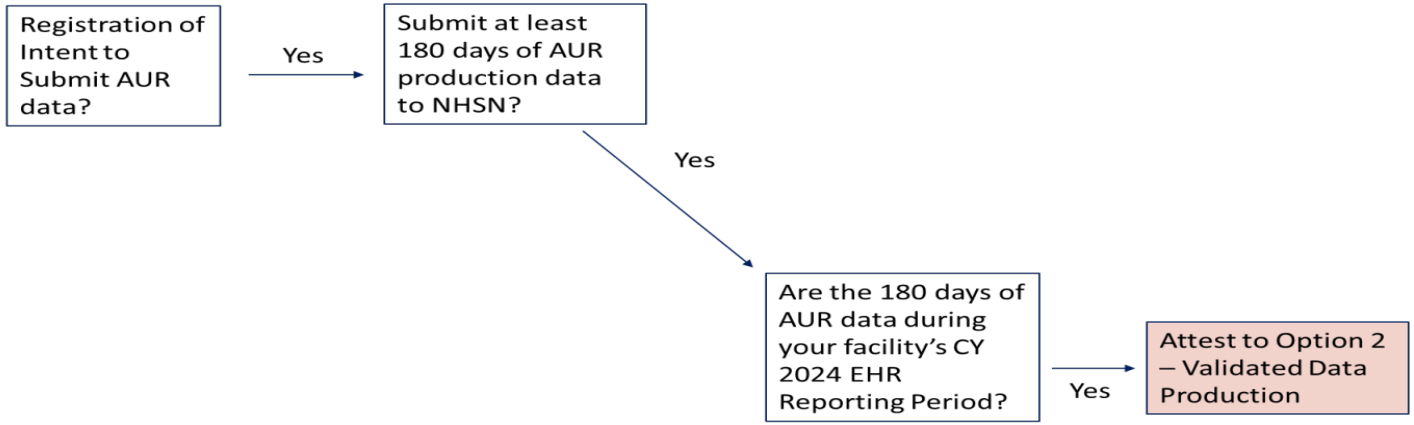


Month/Year	Antimicrobial Use Summary	Antimicrobial Resistance Events	Antimicrobial Resistance Summary
01/2022	Yes	Yes	Yes
02/2022	Yes	Yes	Yes

Status for Attestation: Option 1
No production data but have test files



Status for Attestation: Option 2



In Summary:

Hospitals first have to register intent to submit AUR data within NHSN.

Per the CMS measure specifications, **the registration should be completed within 60 days after the start of the EHR reporting period**.

The registered EH or CAH will then receive an automated email from NHSN inviting it to begin the Testing and Validation step.

Following the instructions in the email, **hospitals must submit one test file for each file type (AU Summary, AR Event, and AR Summary) for validation by the NHSN Team**.

Per the CMS measure specifications, **hospitals should respond to the request for test files within 30 days**. *Failure to respond twice within an EHR reporting period will result in that eligible hospital not meeting the measure.*

NOTE!

If the hospital registers intent to submit AUR data within NHSN prior to having test files ready, the hospital should reply to the request for test files with their current status.

What's new in the **FINAL** IPPS Rule for 2025:

AU Surveillance measure, we propose to adopt three eligible exclusions, as follows Any eligible hospital or CAH may be excluded from the AU Surveillance measure if the eligible hospital or CAH:

(1) Does not have any patients in any patient care location for which data are collected by NHSN during the EHR reporting period;

(2) Does not have an eMAR/BCMA electronic records or an electronic ADT system during the EHR reporting period; or

(3) Does not have a data source containing the minimal discrete data elements that are required for reporting.

AR Surveillance measure, we propose to adopt three eligible exclusions, as follows: Any eligible hospital or CAH may be excluded from the AR Surveillance measure if the eligible hospital or CAH:

(1) Does not have any patients in any patient care location for which data are collected by NHSN during the EHR reporting period;

(2) Does not have an electronic LIS or electronic ADT system during the EHR reporting period; or

(3) Does not have a data source containing the minimal discrete data elements.

FINAL Rule Highlight:

Separate the Antimicrobial Use and Resistance (AUR) Surveillance measure *into two measures*, an Antimicrobial Use (AU) Surveillance measure and an Antimicrobial Resistance (AR) Surveillance measure, beginning with the EHR reporting period in CY 2025.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