RESOURCE AND PATIENT MANAGEMENT SYSTEM

IHS Lab Reporting System

(LR)

Addendum to User Manual (AUR)

Version 5.2 Patch 1055
June 2024

Table of Contents

1.0   Introduction

The Lab Reporting System v5.2 p1055 is designed to identify and report on resulted microbiology lab tests and antibiotic medication administered and recorded in the Indian Health Service (IHS) Resource and Patient Management System (RPMS) and exported to files on a monthly schedule. Once these results are identified and summarized, the application will generate files consisting of a series of Health Level Seven (HL7) messages in a format that can be submitted to the National Health and Safety Network (NHSN) per the Antimicrobial Use and Reporting (AUR) specifications.

A second component of the application is an Ensemble production that will generate ARO microbiology lab detail reports, ARO summary reports, and AUP summary reports into an export directory for these HL7/XML files. The sites can then upload them to NHSN.

This document has instructions that should be followed after installing the LR v5.2 p1055 national release, as documented in the LR v5.2 p1055 Installation Addendum. Several steps are required after installation to coordinate the facility's onboarding to the NHSN. A companion document, the LR v5.2 p1055 NHSN Onboarding Guide, can be used to onboard to the NHSN platform for AUR reporting.

The chapters included in the manual cover the main components of this system:

- Introduction
- Overview of Menu Options
- Getting Started
- Regular Exporting of Lab Data and Pharmacy Data
- Troubleshooting

2.0   Overview of Menu Options

The Antimicrobial User and Resistance Reporting System is menu-controlled. The options from the main menu are shown on the following page. A brief description of each option follows.

```
     *************************************************************************
     ** Antimicrobial Resistance and Use Reporting Transmission System  **
     *************************************************************************
                          Version 5.2 (Patch 1055)

                            DEMO HOSPITAL (INST)


   ARO    Antimicrobial Resistance Reporting System ...
   AUR    Antimicrobial Use Reporting System ...
   SP     Site Parameter Setup ...
   MGE    F6 ALERTS MAIL GROUP EDIT

Select Antimicrobial Use and Resistance Reporting (F6) Option: ARO
```

Figure 2-1: Main menu for Antimicrobial Use Resistance Reporting (AUR)

2.1   Antimicrobial Resistance Reporting System (ARO)

The ARO option displays the menu for Antimicrobial Resistance Reporting for the lab tests that resulted in antimicrobial resistance testing. These options allow users to generate the monthly transmission, display the transmission log, rerun a previous monthly transmission, generate a monthly extract for a previous period, and test the extract for a specific date range for data quality checking.

```
     *************************************************************************
     **        Antimicrobial Resistance Reporting Transmission System     **
     *************************************************************************
                          Version 5.2 (Patch 1055)

                            DEMO HOSPITAL (INST)


   AREX    Generate Antimicrobial Resistance Transmission
   ARDL    Display Antimicrobial Resistance Transmission Log
   ARRX    Re-Run Previously Run AM Resistance Transmission
   ARDR    Date Range Antimicrobial Resistance Transactions
   TEST    Date Range Option for Internal Testing

Select Antimicrobial Resistance Reporting System Option:
```

Figure 2-2: Sub Menu for Antimicrobial Resistance Reporting Transmission System (ARO)

2.1.1   Generate Antimicrobial Resistance Transmission (AREX)

The **AREX** option generates an export of microbiology and lab test results for antimicrobial resistance to the export directory configured in the BLRAM Ensemble Production. During the export process, lab results are compiled and then submitted to the Clinical Document Architecture (CDA) document generator to create Antimicrobial Resistance Option (ARO) Numerator and Summary Reports in CDA format (HL7 v3) documents. Once all labs are identified, output files will automatically be created and written to the export directory.

```
Select Antimicrobial Resistance Reporting System Option: AREX   Generate
Antimicrobial Resistance Transmission

This option will generate a transmission of Antimicrobial Resistance
Reporting transactions for the previous month.
You may "^" out at any prompt and will be asked to confirm your entries
prior to generating the transmission.


The date range for this run is Feb 2024.  Feb 01, 2024 to Feb 29, 2024.



In order to accurately calculate the patient days and admissions, the ADT
Census must be Recalculated up through Feb 29, 2024
The computer database location for this run is DEMO HOSPITAL (INST).

Do you want to continue? N// YES
Generating New Log entries.
Do you want to QUEUE this to run at a later time? N// O

Generating Antimicrobial Resistance Transactions.   (21)
Updating log entry.
```

Figure 2-3: Sample Interaction to Generate an Antimicrobial Resistance Transmission

Generating the ARO Numerator and Summary reports may take several minutes after executing this option. Users will not see the output files in the export directory until the CDA document generation is completed, even though the user has returned to the menu. A log entry is then created in the **BLRAM EXPORT LOG** file.

This option can be scheduled to run at a desired interval in the task manager. BLRAM QUEUE EXPORT can also be scheduled to run automatically. See the VA Kernel user manual for instructions on scheduling an option to run at a desired interval.

2.1.2   Display Antimicrobial Resistance Transmission Log (ARDL)

The **BLRAM EXPORT LOG** file is a historical record of the exports made. The **ARDL** report option allows the AUR Lab Export Manager to review various items contained in the export log file after an ARO export was executed, including the Export Log Number, Run Database/Location, Beginning Date, Ending Date, Export Type, Transmission Status, # of Lab Tests Exported and Filename Created. The details for each Lab Test exported can be displayed within each Log Entry, including the V Lab IEN, Test Name, Result, and Result Date.

```
Select Antimicrobial Resistance Reporting System Option: ARDL   Display
Antimicrobial Resistance Transmission Log


Display ANTIMICROBIAL RESISTANCE TRANSMISSION Log Entry

Type a ??  and press enter at the following prompt to view a list of RUN
DATES. Or, if you know the run date you can enter it in the format
MM/DD/YY:  e.g. 2/26/19

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: T   MAR 25, 2024
     1   3-25-2024@10:36:42
     2   3-25-2024@10:36:59
     3   3-25-2024@10:37:21
CHOOSE 1-3: 3  3-25-2024@10:37:21
```

Figure 2-4: Sample Interaction to Display and Select an Antimicrobial Resistance
Transmission Log

The data will be displayed on a ListMan screen, as shown below.

```
OUTPUT BROWSER              Mar 25, 2024 10:37:36     Page:   1 of   2
Antimicrobial Resistance Transmission Log Display


               ANTIMICROBIAL RESISTANCE TRANSMISSION LOG REPORT
      Information for Log Entry 30 Run Date:  MAR 25, 2024@10:36:42

                             Number:   30
            Run Database/Location:   DEMO HOSPITAL (INST)
                  Beginning Date:   MAR 24, 2024
                     Ending Date:   MAR 25, 2024
                     Export Type:   DATE RANGE
             Transmission Status:   SUCCESSFULLY COMPLETED
      # V MICRO tests transmitted:   0
         # V MICRO tests skipped:   0
       # V LAB tests transmitted:   0
          # V LAB tests skipped:   0
                    # Admissions:   0
                # Inpatient Days:   0
        # Inpatient Blood Cultures:   0
                   # ER Encounters:   0
               # ER Blood Cultures:   0
           # Observation Encounters:   0
        # Observation Blood Cultures:   0
```

```
   V MICROBIOLOGY ENTRIES EXPORTED

V MICROBIOLOGY ENTRIES SKIPPED

   V LAB ENTRIES EXPORTED

          Enter ?? for more actions
>>>
+    NEXT SCREEN         -     PREVIOUS SCREEN     Q    QUITDONE -- Press
ENTER to Continue:
```

Figure 2-5: Sample Display for Antimicrobial Resistance Reporting Transmission Log

This option can allow a site to attest that they report to NHSN every month.

2.1.3   Re-Run Previously Run AM Resistance Transmission (ARRX)

Use the **ARRX** option if a transmission done previously never made it to the export directory and the output files cannot be found.

```
Select Antimicrobial Resistance Reporting System Option: ARRX   Re-Run
Previously Run AM Resistance Transmission

Type a ??  and press enter at the following prompt to view a list of
ORIGINAL RUN DATES.
Alternatively, if you know the original run date you can enter it in the
format MM/DD/YY:
e.g. 2/26/19

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: T   MAR 25, 2024
     1    3-25-2024@10:36:42
     2    3-25-2024@10:36:59
     3    3-25-2024@10:37:21
CHOOSE 1-3: 3    3-25-2024@10:37:21

Log entry 32 was for date range FEB 01, 2024 through FEB 29, 2024.
Do you want to regenerate the Antimicrobial transactions for this run? N//
YES

Generating Antimicrobial Resistance transactions.   (21)
Updating log entry.
DONE -- Press ENTER to Continue:
```

Figure 2-6: Main Sub Menu for Antimicrobial Resistance Reporting Transmission System

2.1.4   Date Range Antimicrobial Resistance Transmission (ARDR)

The **ARDR** option can export all resulting antimicrobial resistance lab tests for a selected month and year to the export directory, which can be uploaded to NHSN. This option should only be used if NHSN requests you to resubmit data from a specific period.

```
Select Antimicrobial Resistance Reporting System Option: ARDR   Date Range
Antimicrobial Resistance Transactions
```

```
                        DEMO HOSPITAL (INST)

***  ANTIMICROBIAL RESISTANCE REPORTING TRANSMISSION FOR A SELECTED MONTH
***

This program will generate Antimicrobial Resistance transactions for a
month/year that you enter.  A log entry will be created to log
the data generated.

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for reporting: 12/23   (DEC 23, 2023)
Enter only a Month and four digit year.  E.g., 01/2021 or JAN 2021

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for Reporting: 12/2023   (DEC 2023)

Log entry 33 will be created and data generated for
date range DEC 01, 2023 to DEC 31, 2023.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Resistance transactions.   (9)
Updating log entry.
DONE -- Press ENTER to Continue:
```

Figure 2-7: Sample Interaction to Generate a Transmission for a Specified Month and Year

2.1.5   Date Range Option for Internal Testing (TEST)

The **TEST** option can export all results of antimicrobial resistance lab tests for a date
range to an intermediary file to allow troubleshooting of the extracted data in addition
to the export directory.

```
Select Antimicrobial Resistance Reporting System Option: TEST  Date Range
Option for Internal Testing

                        DEMO HOSPITAL (INST)

   *** ANTIMICROBIAL RESISTANCE REPORTING TRANSMISSION FOR A DATE RANGE ***


This program will generate Antimicrobial Resistance transactions for a
month/year that you enter.  A log entry will be created which will log the
data generated.

Do you wish to continue? Y// ES
Please enter the date range for which Antimicrobial Resistance data should
be generated.

Enter beginning Visit Date for Search:  T-1   (MAR 24, 2024)

Enter ending Visit Date for Search:  T   (MAR 25, 2024)
```

```
Log entry 30 will be created and data generated for date range MAR 24, 2024
to MAR 25, 2024.


In order to accurately calculate the patient days and admissions,
the ADT Census must be Recalculated up through Mar 25, 2024
Recalculation can be done from the ADT Supervisor menu or by running
the ADS (Admissions and Discharges) sheet.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Resistance transactions.   (1)

The ^BLRTMP nodes are in G:\pub\export\
The file name is BLRAM_20240325_30.txt


Updating log entry.
DONE -- Press ENTER to Continue:
End of Job.  Press ENTER.:
```

Figure 2-8: Testing Menu Option to Extract for a Specific Date Range

2.2 Antimicrobial Use Reporting System … (AUR)

The AUR option displays the menu for Antimicrobial Use Reporting for the antimicrobial medications administered for antimicrobial use reporting. These options allow users to generate the monthly transmission, display the transmission log, rerun a previous monthly transmission, generate a monthly extract for a previous period, and test the extract for a specific date range for data quality checking.

```
                 **************************************************
                 **      Antimicrobial Use Reporting System     **
                 **************************************************
                            Version 5.2 (Patch 1055)

                            DEMO HOSPITAL (INST)


    AUEX   Generate Antimicrobial Use Report
    AUDL   Display Antimicrobial Use Report Log
    AURX   Re-Run Previously Run AM Use Report
    AUDR   Date Range Antimicrobial Use Report
    TEST   Date Range Option for Internal Testing

Select Antimicrobial Use Reporting System Option:
```

Figure 2-9: Sub Menu Options for the Antimicrobial Use Reporting System

2.2.1   Generate Antimicrobial Use Report (AUEX)

The **AUEX** option exports antimicrobial pharmacy data for antimicrobial use to the export directory configured in the BLRAM Ensemble Production. Medication administration data is compiled and submitted during export to the CDA document generator to create Antimicrobial Use Reporting (AUP) Summary Reports in CDA format (HL7 v3) documents. Once all medications administered are identified, output files will automatically be created and written to the export directory.

Generating the AUP Summary reports may take several minutes after executing this option. Even though you have returned to your menu, you will not see the output files in the export directory until the CDA document generation is completed. A log entry is then created in the **BLRAU EXPORT LOG** file.

This option can be scheduled to run at a desired interval in the task manager. BLRAU QUEUE EXPORT is another option that can be scheduled to run automatically. See the VA Kernel user manual for instructions on scheduling an option to run at a desired interval.

```
Select Antimicrobial Use Reporting System Option: AUEX   Generate
Antimicrobial Use Report

This option will generate a transmission of an Antimicrobial Use
Report for a specified month/year.
You may "^" out at any prompt and will be ask to confirm your entries
prior to generating the transmission.


The date range for this run is Feb 2024.  Feb 01, 2024 to Feb 29, 2024.


The computer database location for this run is DEMO HOSPITAL (INST).

Do you want to continue? N// YES
Generating New Log entry.
Do you want to QUEUE this to run at a later time? N// O

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.3
```

Figure 2-10: Sample Interaction to Generate an Antimicrobial Use Report Extract

2.2.2   Display Antimicrobial Use Report Log (AUDL)

The **BLRAU EXPORT LOG** file is a historical record of the exports made. The **AUDL** report option allows the AUR Pharmacy Export Manager to review various items contained in the export log file after an AUR export was executed, including the Export Log Number, Run Database/Location, Beginning Date, Ending Date, Export Type, Transmission Status, # of Medications Administered Exported and Filename Created. The details for each Medication by Antimicrobial Agent (primary ingredient) exported in each Log Entry can be displayed, including the BCMA IEN, Antimicrobial Agent, Route Administered, and Therapy Days.

This option can allow a site to attest that they report to NHSN every month.

```
Select Antimicrobial Use Reporting System Option: AUDL   Display
Antimicrobial Use Log


Display ANTIMICROBIAL USE REPORT Log Entry

Type a ??  and press enter at the following prompt to view a list of RUN
DATES.
Or, if you know the run date you can enter it in the format MM/DD/YY:  e.g.
2/26/19

Select BLRAU ANTIMICROBIAL USE LOG RUN DATE/TIME: T   MAR 25, 2024
     1    3-25-2024@10:39:29
     2    3-25-2024@10:39:42
     3    3-25-2024@10:39:54

CHOOSE 1-3: 3   3-25-2024@10:39:54
```

Figure 2-11: Sample Interaction to Display an Antimicrobial Use Report Extract Log Entry

The data will be displayed on a ListMan screen, as shown below.

```
OUTPUT BROWSER               Mar 25, 2024 10:39:54          Page: 1 of  22
Antimicrobial Use Report Log Display


                   ANTIMICROBIAL USE REPORT LOG REPORT
       Information for Log Entry 49 Run Date:  MAR 25, 2024@10:39:42

                                 Number:   49
                               Facility:   DEMO HOSPITAL (INST)
                         Beginning Date:   FEB 01, 2024
                            Ending Date:   FEB 29, 2024
                     Month/Year of Report:   FEB 2024
                            Export Type:   REGULAR
                    Transmission Status:   SUCCESSFULLY COMPLETED
_____

   FACWIDEIN (1250-0)          INPATIENT DAYS: 57   ADMISSIONS: 3
   ----------------------------------------------------------------------------
     RXNORM     DRUG NAME                     ROUTE                    TOTAL #
   ----------------------------------------------------------------------------
     620        amantadine                                               1
```

```
                                         2522-1 Digestive Tract    2
                                         2523-9 Respiratory tract   0
                                         47625008 Intravascular     0
                                         78421000 Intramuscular     0
      723        amoxicillin                                        1
                                         2522-1 Digestive Tract    2
                                         2523-9 Respiratory tract   0
                                         47625008 Intravascular     0
                                         78421000 Intramuscular     0
      1272       aztreonam                                          4
                                         2522-1 Digestive Tract    0
                                         2523-9 Respiratory tract   5
                                         47625008 Intravascular     0
                                         78421000 Intramuscular     0
      2191       ceftazidime                                        3
                                         2522-1 Digestive Tract    0
                                         2523-9 Respiratory tract   0
                                         47625008 Intravascular     3
                                         78421000 Intramuscular     1
+        Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
```

Figure 2-12: Sample Display of a Portion of an Antimicrobial Use Report Log Display

Each reporting location is displayed above by antimicrobial agent (RXNORM) and medication route. Detailed records are displayed at the end of the log to allow for the review of specific medications that have been reviewed or skipped.

```
_____

BCMA ANTIMICROBIAL ADMINSTRATION ENTRIES REVIEWED AND COUNTED
-------------------------------------------------------------------------
BCMAIEN   HRN     PATIENT                  WARD              WARD CODE
-------------------------------------------------------------------------
198      464646  DEMO,FSIX FOUR           EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 310155       DRUG: ERYTHROMYCIN 250MG TAB
   ROLL UP RXNORM: 4053  erythromycin
   ACTION TIME: Feb 29, 2024@11:20:01    ROUTE: ORAL (2522-1)
199      464646  DEMO,FSIX FOUR           EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 205964       DRUG: CLINDAMYCIN 600MG/4ML INJ
   ROLL UP RXNORM: 2582  clindamycin
   ACTION TIME: Feb 29, 2024@11:20:19    ROUTE: INTRAMUSCULAR (78421000)
200      464646  DEMO,FSIX FOUR           EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 313890       DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 29, 2024@11:20:59    ROUTE: IV PIGGYBACK (47625008)
201      464646  DEMO,FSIX FOUR           EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 348719       DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 29, 2024@11:21:22    ROUTE: INHALATION (2523-9)
202      464646  DEMO,FSIX FOUR           EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 901610       DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ROLL UP RXNORM: 1272  aztreonam
   ACTION TIME: Feb 29, 2024@11:21:50    ROUTE: INHALATION (2523-9)
182      262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 348719       DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 20, 2024@23:23:02    ROUTE: INHALATION (2523-9)
```

```
183       262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 901610      DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ROLL UP RXNORM: 1272  aztreonam
   ACTION TIME: Feb 20, 2024@23:23:12     ROUTE: INHALATION (2523-9)
184       262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 562508      DRUG: AMOXICILLIN/CLAVULANATE 875MG/125MG TAB
   ROLL UP RXNORM: 19711  amoxicillin / clavulanate
   ACTION TIME: Feb 20, 2024@23:25:56     ROUTE: ORAL (2522-1)
185       262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 20, 2024@23:27:10     ROUTE: IV PIGGYBACK (47625008)
186       262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 1668264     DRUG: ERYTHROMYCIN 50MG/ML INJECTABLE SOLUTION
   ROLL UP RXNORM: 4053  erythromycin
   ACTION TIME: Feb 20, 2024@23:29:36     ROUTE: INTRAMUSCULAR (78421000)
187       262626  DEMO,FSIX TWO            ICU WARD    (1027-2)
   RXNORM: 205964      DRUG: CLINDAMYCIN 600MG/4ML INJ
   ROLL UP RXNORM: 2582  clindamycin
   ACTION TIME: Feb 20, 2024@23:30:11     ROUTE: INTRAMUSCULAR (78421000)
168       565656  DEMO,FSIX FIVE           OBSERVATION (1162-7)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 15, 2024@11:45:02     ROUTE: IV PIGGYBACK (47625008)
169       565656  DEMO,FSIX FIVE           OBSERVATION (1162-7)
   RXNORM: 348719      DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 15, 2024@13:09:03     ROUTE: INHALATION (2523-9)
…
```

Figure 2-13: Sample Display of a Entries Reviewed and Counted

```
_____

BCMA ANTIMICROBIAL ADMINSTRATION ENTRIES REVIEWED AND NOT COUNTED (SKIPPED)
--------------------------------------------------------------------------
IEN     HRN    PATIENT          WARD                         ADM DATE/TIME
--------------------------------------------------------------------------

172       565656  DEMO,FSIX FIVE            OBSERVATION (1162-7)
   RXNORM: 313890       DRUG: cefTAZidime 1gm INJ
   ACTION TIME: Feb 15, 2024@21:06:20    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

176       565656  DEMO,FSIX FIVE            OBSERVATION (1162-7)
   RXNORM: 901610       DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ACTION TIME: Feb 15, 2024@21:12:25    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

177       565656  DEMO,FSIX FIVE            OBSERVATION (1162-7)
   RXNORM: 239191       DRUG: AMOXICILLIN 250MG/5ML SUSP
   ACTION TIME: Feb 15, 2024@21:14:33    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

179       343434  DEMO,FSIX THREE           PEDIATRIC WARD (1076-9)
   RXNORM: 901610        DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ACTION TIME: Feb 15, 2024@21:27:46    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

167       565656  DEMO,FSIX FIVE            UNKNOWN/UNABLE TO FI ()
   RXNORM: 352082       DRUG: MOXIFLOXACIN 400MG PREMIX IV
   ACTION TIME: Feb 15, 2024@10:43:34    ROUTE:  ()
   REASON SKIPPED: COULD NOT MAP TO INGREDIENT RXCUI - NOT REPORTABLE

180       464646  DEMO,FSIX FOUR            UNKNOWN/UNABLE TO FI ()
   RXNORM: 313890       DRUG: cefTAZidime 1gm INJ
   ACTION TIME: Feb 15, 2024@21:39:32    ROUTE:  ()
   REASON SKIPPED: CANNOT DETERMINE WARD/LOCATION OR NOT A REPORTABLE
WARD/LOCAT
```

Figure 2-14: Sample Display of a Entries Reviewed and Not Counted (Skipped)

2.2.3   Re-Run Previously Run AM Use Report (AURX)

Use the **AURX** option if a transmission done previously never made it to the export directory and the output files cannot be found.

```
Select Antimicrobial Use Reporting System Option: AURX   Re-Run Previously
Run AM  Use Report

Type a ??  and press enter at the following prompt to view a list of
ORIGINAL RUN DATES.
Or, if you know the original run date you can enter it in the format
MM/DD/YY:  e.g. 2/26/19

Select BLRAU ANTIMICROBIAL USE LOG RUN DATE/TIME: T   MAR 25, 2024
    1   3-25-2024@10:39:29
    2   3-25-2024@10:39:42
CHOOSE 1-2: 2   3-25-2024@10:39:42
```

```
Log entry 49 was for date range FEB 01, 2024 through FEB 29, 2024.
Do you want to regenerate the Antimicrobial Use Report for this run? N//
YES

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.3
DONE -- Press ENTER to Continue:
```

Figure 2-15: Sample Interaction for Re-Run Antimicrobial Use Report

2.2.4　Date Range Antimicrobial Use Report (AUDR)

The **AUDR** option exports all administered antimicrobial use for a specified month and year range to the export directory, which can be uploaded to NHSN. This option should only be used if NHSN requests that you resubmit data from a specific period.

```
Select Antimicrobial Use Reporting System Option: AUDR   Date Range
Antimicrobial Use Report

                         DEMO HOSPITAL (INST)

         *****   ANTIMICROBIAL USE REPORT IN A SELECTED MONTH   *****


This program will generate an Antimicrobial Use report for a
month/year that you enter.  A log entry will be created which will log
the data generated.

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for reporting: 12/2023   (DEC 2023)

Log entry 50 will be created and data generated for
date range DEC 01, 2023 to DEC 31, 2023.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.4
DONE -- Press ENTER to Continue:
```

Figure 2-16: Sample Interaction for Antimicrobial Use Reporting System Option by Date Range

2.2.5　Date Range Option for Internal Testing (TEST)

The **TEST** option can be used to export all antimicrobial use medications administered for a date range to an intermediary file to allow troubleshooting of the extracted data in addition to the export directory.

```
Select Antimicrobial Use Reporting System Option: TEST   Date Range Option
for Internal Testing

                          DEMO HOSPITAL (INST)

         *****   ANTIMICROBIAL USE REPORT IN A SELECTED MONTH   *****


This program will generate an Antimicrobial Use report for a
month/year that you enter.  A log entry will be created which will log
the data generated.

Do you wish to continue? Y// ES
Please enter the date range for which Antimicrobial Resistance data
should be generated.

Enter beginning Visit Date for Search:  T-1   (MAR 24, 2024)

Enter ending Visit Date for Search:  T   (MAR 25, 2024)

Log entry 48 will be created and data generated for
date range MAR 24, 2024 to MAR 25, 2024.


In order to accurately calculate the patient days and admissions,
the ADT Census must be Recalculated up through Mar 25, 2024
Recalculation can be done from the ADT Supervisor menu or by running
the ADS (Admissions and Discharges) sheet.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Use report. ... hold on .

The ^BLRTMP nodes are in G:\pub\export\
The file name is BLRAU_20240325_48.txt


Updating log entry.

RUN TIME (H.M.S): 0.0.1
DONE -- Press ENTER to Continue:
End of Job.  Press ENTER.:
```

Figure 2-17: Sample Interaction for Antimicrobial User Reporting System Option for Testing a Specific Date Range

2.3   Site Parameter Setup (SP)

The BLRZMENU security key restricts the SP option and can be used to display and update their Antimicrobial Use and Resistance Reporting site parameters. This option has four submenu options, as described below.

```
   SPD     Display AU Site Parameters
   WS      Site Parameter and Ward Setup (NHSN Codes)
   MR      Medication Route Setup
   FMR     Find Medication Routes Used
```

```
```

Figure 2-18: Menu Options for the Site Parameters Setup Sub Menu

2.3.1   Display AU Site Parameters (SPD)

The **SPD** option displays the current site parameters associated with the AUR reporting functionality including the NHSN Facility OID and Ward and Medication Route mappings to NHSN codes.

Please note this option should only be used with guidance from the AUR project team in order to allow the export to function effectively based on the site's lab setup and configuration.

```
Display ANTIMICROBIAL USE SITE PARAMETERS

Select your facility.  Type ?? to see a list of facilities.

Select BLRAU ANTIMICROB USE SITE PARAMETERS: DEMO HOSPITAL (INST)        HEA


OUTPUT BROWSER                 Mar 25, 2024 10:42:17         Page: 1 of   3
Antimicrobial Use Site Parameter Display


                  ANTIMICROBIAL USE REPORT SITE PARAMETERS

Site:  DEMO HOSPITAL (INST)

NHSN ASSIGNED FACILITY OID:  1.111.222.333.580

EMERGENCY DEPARTMENT NHSN CODE: 1108-0   Emergency Department

OBSERVATION NHSN CODE:  1162-7   24-Hour Observation Area

   WARDS
     ICU WARD                     1027-2         Medical Critical Care
     SWING BED
     CHH INPATIENT
     MEDICAL WARD                 1060-3         Medical Ward
     MULTI SERVICE
     EAST GENMED
     WEST
     SOUTH OBGYN
     INPATIENT FLOOR
     NEWBORN ICU
     GENERAL MEDICINE
     PEDIATRIC WARD               1076-9         Pediatric Medical Ward
     MEDICAL WEST
     CZ CHH WARD
     POST SURGERY

   MEDICATION ROUTES
     ORAL                         2522-1         Digestive tract
     J TUBE                       2522-1         Digestive tract
     G TUBE                       2522-1         Digestive tract
     RECTAL                       2522-1         Digestive tract
```

```
     INTRAVENOUS                    47625008      Intravascular
     INTRAMUSCULAR                  78421000      Intramuscular
     TOPICAL
     INHALATION                     2523-9        Respiratory tract
     IV PIGGYBACK                   47625008      Intravascular
     IV PUSH                        47625008      Intravascular
     ORAL PO                        2522-1        Digestive tract
         Enter ?? for more actions
>>>
+    NEXT SCREEN          -    PREVIOUS SCREEN      Q    QUIT
```

Figure 2-19: Display Site Parameters for Antimicrobial Use and Resistance Reporting (AUR)

2.3.2   Site Parameter and Ward Setup (NHSN Codes) (WS)

The **WS** option can be used to map Wards, ER and Observation units to NHSN location codes and the NHSN Facility OID.

```
Select Site Parameter Setup Option: WS   Site Parameter and Ward Setup
(NHSN Codes)

This option is used to map WARDS, the ER and Observation Units to NHSN
Location Codes and enter your site ID.
Each Ward, the ER and Observation units must be assigned an appropriate
NHSN location code.
The site parameters will be pre-populated with all Wards defined in the
RPMS Ward Location file.  If a Ward is not active you can leave the NHSN
code blank.  Only Wards that are assigned an NHSN location code will be
reported.


Do you wish to continue? Y// ES


Enter the ANTIMICROBIAL USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes// <return>   (Yes)

EMERGENCY ROOM NHSN CODE: Emergency Department//
OBSERVATION NHSN CODE: 24-Hour Observation Area//
NHSN ASSIGNED FACILITY OID: 1.111.222.333.580//

The next screen will present all Wards and associated NHSN codes.
```

Figure 2-20: Sample Interaction to Update Site Parameters for Antimicrobial Use and
        Resistance Reporting (AUR)

```
Update Ward NHSN Codes        Mar 25, 2024 10:42:45        Page: 1 of  1
    WARD                                 NHSN CODE


1)  ICU WARD                            1027-2   Medical Critical Care
2)  SWING BED
3)  CHH INPATIENT
4)  MEDICAL WARD                        1060-3   Medical Ward
5)  MULTI SERVICE
6)  EAST GENMED
7)  WEST
8)  SOUTH OBGYN
9)  INPATIENT FLOOR
10) NEWBORN ICU
11) GENERAL MEDICINE
12) PEDIATRIC WARD                      1076-9   Pediatric Medical Ward
13) MEDICAL WEST
14) CZ CHH WARD
15) POST SURGERY


         Enter ?? for more actions
S    Select Ward                        Q    Quit
```

Figure 2-21: Listing of Wards Mapped to NHSN Location Codes

2.3.3   Medication Route Setup (MR)

The **MR** option can be used to map the medication routes identified in the **Find Medication Routes in Use** option to the four values that NHSN wants the site to report on. The user will be asked to select the site for reporting. In the ListMan, the user will select a medication route from the list and if it can be categorized as Digestive tract, Intramuscular, Intravascular, or Respiratory tract.

```
Select Site Parameter Setup Option: MR   Medication Route Setup

This option is used to map Medication Routes to NHSN Codes.
The site parameters have been pre-populated with common Medication Routes
used in BCMA, the IV Pharmacy System and Unit Dose for drugs with a
VA Drug Class indicating it is an Antimicrobial drug.

This list must be mapped to the codes below.  You can add additional
Medication Routes to the list.

The 4 codes are:
    - Digestive tract route      2522-1
    - Intramuscular route (IM)   78421000
    - Intravascular route (IV)   47625008
    - Respiratory tract route    2523-9


Do you wish to continue? Y// ES


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes//   (Yes)

Update Med Route NHSN Codes   Mar 25, 2024 10:43:03        Page: 1 of   1
    MED ROUTE                              NHSN CODE DESCRIPTION


1)  ORAL                                   2522-1    Digestive tract
2)  J TUBE                                 2522-1    Digestive tract
3)  G TUBE                                 2522-1    Digestive tract
4)  RECTAL                                 2522-1    Digestive tract
5)  INTRAVENOUS                            47625008  Intravascular
6)  INTRAMUSCULAR                          78421000  Intramuscular
7)  TOPICAL
8)  INHALATION                             2523-9    Respiratory tract
9)  IV PIGGYBACK                           47625008  Intravascular
10) IV PUSH                                47625008  Intravascular
11) ORAL PO                                2522-1    Digestive tract




        Enter ?? for more actions
U   Update NHSN Code      AD   Add Medication Route Q    Quit
```

Figure 2-22: Display of Medication Routes with NHSN Codes Assigned

2.3.4 Find Medication Routes Used (FMR)

The **FMR** option can be used to identify the medication routes used at the site. This list can be used with the MR option to map those medication routes that need to be reported to NHSN. Queuing the process is recommended to allow the search to be complete without the user waiting for an undetermined amount of time.

```
This option is used to scan the BCMA, IV Med and Unit Dose medication files
to find all Medication Routes used with Antimicrobial drugs (VA DRUG CLASS
AM*). Those that are found will be put into the Medication Route site
parameter so they can be assigned an NHSN code.


This process could take up to an hour depending on how large those files
are so it is recommended that you queue to run in the background.


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
         ...OK? Yes//   (Yes)

Won't you queue this ? Y// NO
<CR> to continue:
```

Figure 2-23: Sample Interaction to Find Medication Routes Used at the Site to be Mapped

2.3.5 F6 ALERTS MAIL GROUP EDIT (MGE)

The **MGE** option can be used to manage the RPMS users who should be alerted to the AUR Reporting transmission generation tasks status. This option allows users to be added or removed from the F6 ALERTS mail group.

```
Select Antimicrobial Use and Resistance Reporting (F6) Option: MGE   F6
ALERTS MAIL GROUP


                             DEMO HOSPITAL (INST)
Date: 03/25/24                     RPMS Lab
Time: 10:44 AM
                                  F6 ALERTS
BLREMERA
                           Mail Group Modifications
                              MAIN MENU
-------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):
```

Figure 2-24: AUR ALERTS Mail Group Modifications main menu

From the main menu, type **3** to list the users assigned to the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      RPMS Lab
Time: 10:44 AM
                                   F6 ALERTS
BLREMERA
                            Mail Group Modifications
                                  MAIN MENU
------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):3
```

Figure 2-25: AUR ALERTS Mail Group main menu–Select 3 to List Users

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory                    Page 1
Time: 10:44 AM                      F6 ALERTS
BLREMERA
                            Mail Group Members


    DUZ         Name
------------------------------------------------------------------------
    1111        LABORATORY, USER
    2222        PHARMACY, USER
    3333        INFORMATICIST, USER
    4444        INFECTION CONTROL, USER
    5555        AREA SUPPORT, USER

        5 Members
```

Figure 2-26: AUR ALERTS Mail Group Members List

From the main menu, type **2** to delete users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      RPMS Lab
Time: 10:44 AM
                                   F6 ALERTS
BLREMERA
                            Mail Group Modifications
                                  MAIN MENU
------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 2
```

Figure 2-27: AUR ALERTS Mail Group main menu–Select 2 to Delete User

```
                                   DEMO HOSPITAL (INST)
Date: 03/25/24                        IHS Laboratory
Time: 10:44 AM
                                        F6 ALERTS
BLREMERA
                            Delete User from Mail Group
------------------------------------------------------------------------------

Select one of the users below to delete:

     1 LABORATORY, USER
     2 PHARMACY, USER
     3 INFORMATICIST, USER
     4 INFECTION CONTROL, USER
     5 AREA SUPPORT, USER

Enter Number: 2

    PHARMACY, USER deleted from F6 ALERTS Mail Group
```

Figure 2-28: AUR ALERTS–Successfully Deleted User from Mail Group

```
                                   DEMO HOSPITAL (INST)
Date: 03/25/24                        IHS Laboratory
Time: 10:44 AM
                                        F6 ALERTS
BLREMERA
                            Delete User from Mail Group
------------------------------------------------------------------------------

Select one of the users below to delete:

     1 LABORATORY, USER
     2 INFORMATICIST, USER
     3 INFECTION CONTROL, USER
     4 AREA SUPPORT, USER

Enter Number:

    Exit/No Entry.

        Press RETURN Key: ^

    1 User deleted from F6 ALERTS

    0 Errors when trying to delete users from F6 ALERTS
```

Figure 2-29: AUR ALERTS–Successfully Deleted User from Mail Group

From the main menu, type **1** to add users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      RPMS Lab
Time: 10:44 AM
                                    F6 ALERTS
BLREMERA
                            Mail Group Modifications
                                  MAIN MENU
------------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 1
```

Figure 2-30: AUR ALERTS Mail Group main menu–Select 1 to Add User

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      IHS Laboratory
Time: 10:44 AM
                                    F6 ALERTS
BLREMERA
                            Add User to Mail Group
------------------------------------------------------------------------------

Select NEW PERSON: PHARMACY NEW, USER       BHS

    PHARMCY NEW, USER added to F6 ALERTS
```

Figure 2-31: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      IHS Laboratory
Time: 10:44 AM
                                    F6 ALERTS
BLREMERA
                            Add User to Mail Group
------------------------------------------------------------------------------

Select NEW PERSON: ^

    Exit/No Entry.

        Press RETURN Key:

    1 Users added to F6 ALERTS

    0 Errors when trying to add users to F6 ALERTS
```

Figure 2-32: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

```
BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
         ...OK? Yes//   (Yes)

Won't you queue this ? Y// NO
<CR> to continue:
```

Figure 2-33: main menu for Antimicrobial Use Resistance Reporting (AUR)

3.0 Getting Started: System Setup for Regular Lab Exports

The following section addresses configuration items that should have been addressed in the Install Guide when the software was initially installed. However, this material is presented here in case there are remaining configuration settings that were not addressed during installation and configuration.

3.1 Confirm Laboratory Test Attributes

Assign SNOMED CODES to Organisms (Etiology) for Reporting

Using FileMan, assign SNOMED CODES to each eligible organism using the ETIOLOGY FIELD file# 61.2 for NHSN AR reporting.

See Appendix A for the list of Organism names and their assigned SNOMED CODES.

```
VA FileMan 22.0

Select VA FileMan Option: ENter or Edit File Entries

INPUT TO WHAT FILE: TOPOGRAPHY FIELD// 61.2   ETIOLOGY FIELD
EDIT WHICH FIELD: ALL//


Select ETIOLOGY FIELD NAME: ECOLI
      1    ECOLI  ESCHERICHIA COLI      112283007
      2    ECOLI  E. COLI 0157:H7       103429008
CHOOSE 1-2: 1  ESCHERICHIA COLI      112283007
NAME: ESCHERICHIA COLI//
CLASS/GROUP-TRIBE/FAMILY: EBACT//
SNOMED CODE: 112283007//
GRAM STAIN: GRAM NEGATIVE//
Select *BIOCHEMICAL WORKUP:
IDENTIFIER: BACTERIUM//
Select TITLE OF ARTICLE:
ABBREVIATION: ECOLI//
Select SYNONYM: ECOLI//
SUSCEPTIBILITY EDIT TEMPLATE: LR GRAM NEG
*SENSITIVITY DISPLAY TEMPLATE:
HEALTH DEPT REPORT:
Select ETIOLOGY WKLD CODE:

Select ETIOLOGY FIELD NAME:
```

Figure 3-1: ETIOLOGY FIELD file example

3.2 Confirm Laboratory Test Attributes

Assign LOINC CODES to antibiotic names (antimicrobial susceptibility) for reporting.

Using FileMan, assign LOINC CODES to each reportable antibiotic name using the ANTIMICROBIAL SUSCEPTIBILITY file# 62.06 for NHSN AR reporting.

See Appendix B for the list of Antibiotic names and their assigned LOINC CODES.

```
VA FileMan 22.0

Select VA FileMan Option: ENter or Edit File Entries


INPUT TO WHAT FILE: ETIOLOGY FIELD// 62.06   ANTIMICROBIAL SUSCEPTIBILITY
EDIT WHICH FIELD: ALL//


Select ANTIMICROBIAL SUSCEPTIBILITY NAME: AMP
     1    AMPICILLIN        AMPICILLIN
     2    AMPICILLIN/SULBACTAM       AMPICILLIN/SULBACTAM
CHOOSE 1-2: 1   AMPICILLIN     AMPICILLIN
NAME: AMPICILLIN//
PRINT ORDER: 10.04//
Select SUSCEPTIBILITY RESULT: I//
  SUSCEPTIBILITY RESULT: I//
  DEFAULT INTERPRETATION: I//
  Select *ORGANISM:
  Select ALTERNATE INTERPRETATION:
Select SUSCEPTIBILITY RESULT:
Select *SPECIMEN:
DISPLAY COMMENT:
INTERNAL NAME: AMPICILLIN//
ABBREVIATION: AMP//
DEFAULT SCREEN: ALWAYS DISPLAY//
Select ALTERNATE SCREEN:
NATIONAL VA LAB CODE: Ampicillin//
LOINC: 18864-9//

Select ANTIMICROBIAL SUSCEPTIBILITY NAME:
```

Figure 3-2: ANTIMICROBIAL SUSCEPTIBILITY file example

3.3   Confirm Laboratory Test Attributes

Assign SNOMED CODES to specimen type (topography) for reporting.

Using FileMan, assign SNOMED CODES to each specimen type for urine, blood, lower respiratory (sputum), and CSF samples using the TOPOGRAPHY FIELD file# 61 for NHSN AR reporting.

Table 3-1: SNOMED CODES and specimen type (topography)

Specimen	SNOMED CODE
URINE	122575003
CATHETER URINE	122565001
CSF	58450006

Specimen	SNOMED CODE
BLOOD	119297000
VENOUSBLOOD	122555007
ARTERIALBLOOD	122552005
WHOLEBLOOD	258580003
SPUTUM	119334006
LOWERRESPIRATORY	258606004

```
VA FileMan 22.0


Select VA FileMan Option: ENter or Edit File Entries



INPUT TO WHAT FILE: HOSPITAL LOCATION// TOPOGRAPHY FIELD
EDIT WHICH FIELD: ALL//


Select TOPOGRAPHY FIELD NAME: URINE        122575003
NAME: URINE//
ICDO CODE:
HL7 CODE: UR//
LEDI HL7: Urine//
TIME ASPECT:
SNOMED CODE: 122575003//
SEX SPECIFIC:
Select SYNONYM:
WEIGH:
COLLECTION SAMPLE:
Select TITLE OF ARTICLE:
ABBREVIATION:
*NEGATIVE BACTERIOLOGY COMMENT:


Select TOPOGRAPHY FIELD NAME: BLOOD
     1    BLOOD        119297000
     2    BLOOD BAND CELL        0X161
     3    BLOOD BASOPHIL        0X180
     4    BLOOD EOSINOPHIL        0X170
     5    BLOOD ERYTHROCYTE        0X120
Press <RETURN> to see more, '^' to exit this list, OR
CHOOSE 1-5: 1    BLOOD    119297000
NAME: BLOOD//
ICDO CODE:
HL7 CODE: BLD//
LEDI HL7: Whole blood//
TIME ASPECT:
SNOMED CODE: 119297000//
SEX SPECIFIC:
Select SYNONYM:
WEIGH:
COLLECTION SAMPLE:
Select TITLE OF ARTICLE:
ABBREVIATION:
*NEGATIVE BACTERIOLOGY COMMENT:


Select TOPOGRAPHY FIELD NAME: SPUTUM        119334006
```

```
NAME: SPUTUM//
ICDO CODE:
HL7 CODE: SPT//
LEDI HL7: Sputum//
TIME ASPECT:
SNOMED CODE: 119334006//
SEX SPECIFIC:
Select SYNONYM:
WEIGH:
COLLECTION SAMPLE:
Select TITLE OF ARTICLE:
ABBREVIATION:
*NEGATIVE BACTERIOLOGY COMMENT:


Select TOPOGRAPHY FIELD NAME: CSF            258450006
NAME: CSF//
ICDO CODE:
HL7 CODE: CSF//
LEDI HL7: Cerebral spinal fluid//
TIME ASPECT:
SNOMED CODE: 258450006//
SEX SPECIFIC:
Select SYNONYM:
WEIGH:
COLLECTION SAMPLE:
Select TITLE OF ARTICLE:
ABBREVIATION:
*NEGATIVE BACTERIOLOGY COMMENT:

Select TOPOGRAPHY FIELD NAME:
```

Figure 3-3: TOPOGRAPHY file examples

3.4   Confirm Laboratory Test Attributes

Confirm collection sample file entries include the specimen types for urine, blood, csf, and sputum.

Using FileMan, confirm that the DEFAULT SPECIMEN field includes the Urine, Blood, CSF, and Sputum specimens used for ordering the Culture Laboratory Tests using the COLLECTION SAMPLE file# 62 for NHSN AR reporting.

```
VA FileMan 22.0

Select VA FileMan Option: ENter or Edit File Entries

INPUT TO WHAT FILE: ANTIMICROBIAL SUSCEPTIBILITY// 62   COLLECTION SAMPLE
EDIT WHICH FIELD: ALL//


Select COLLECTION SAMPLE NAME: SPUTUM CULTURE
NAME: SPUTUM CULTURE//
DEFAULT SPECIMEN: SPUTUM//
TUBE TOP COLOR: STERILE CUP//
VOLUME LARGE:
VOLUME SMALL:
LAB SECTION:
```

```
CAN LAB COLLECT:
Select SYNONYM:
Select ACCESSION AREA:


Select COLLECTION SAMPLE NAME: CSF CULTURE
NAME: CSF CULTURE//
DEFAULT SPECIMEN: CSF//
TUBE TOP COLOR: STERILE//
VOLUME LARGE:
VOLUME SMALL:
LAB SECTION:
CAN LAB COLLECT:
Select SYNONYM:
Select ACCESSION AREA:


Select COLLECTION SAMPLE NAME: URINE,STERILE
NAME: URINE,STERILE//
DEFAULT SPECIMEN: URINE//
TUBE TOP COLOR: STERILE CUP//
VOLUME LARGE:
VOLUME SMALL:
LAB SECTION:
CAN LAB COLLECT:
Select SYNONYM:
Select ACCESSION AREA:


Select COLLECTION SAMPLE NAME: BLOOD CULTURE
NAME: BLOOD CULTURE//
DEFAULT SPECIMEN: BLOOD//
TUBE TOP COLOR: BLOOD BTL//
VOLUME LARGE:
VOLUME SMALL:
LAB SECTION:
CAN LAB COLLECT:
Select SYNONYM:
Select ACCESSION AREA:


Select COLLECTION SAMPLE NAME:
```

Figure 3-4: COLLECTION SAMPLE file examples

3.5   Confirm Laboratory Test Attributes

Confirm that the laboratory test contains the collection sample with the default specimen. Using FileMan, confirm that the laboratory test and collection sample includes the default specimen for urine, blood, CSF, and sputum specimens using the LABORATORY TEST file# 60 for NHSN AR reporting.

```
VA FileMan 22.0


Select VA FileMan Option: INquire to File Entries
```

```
OUTPUT FROM WHAT FILE: 60    LABORATORY TEST
Select LABORATORY TEST NAME:    URINE CULTURE
ANOTHER ONE: BLOOD CULTURE
ANOTHER ONE: SPUTUM CULTURE
ANOTHER ONE: CSF CULTURE
ANOTHER ONE:
STORE THESE ENTRY ID'S IN TEMPLATE:
STANDARD CAPTIONED OUTPUT? Yes//
Include COMPUTED fields:  (N/Y/R/B): NO//
DISPLAY AUDIT TRAIL? No//

LABTEST IEN: 2000107                     NAME: URINE CULTURE
  TYPE: BOTH                             SUBSCRIPT: MICROBIOLOGY
  UNIQUE ACCESSION #: YES                UNIQUE COLLECTION SAMPLE: NO
  EDIT CODE: BACTERIOLOGY1               HIGHEST URGENCY ALLOWED: ROUTINE
  REQUIRED TEST: YES                     PRINT NAME: URINE CULTURE
COLLECTION SAMPLE: URINE,STERILE
INSTITUTION: DEMO HOSPITAL               ACCESSION AREA: MICROBIOLOGY
SITE NOTES DATE: FEB 20, 2024
 NOTE:   REVIEWED FOR AUR. KR


LABTEST IEN: 1142                        NAME: BLOOD CULTURE
  TYPE: BOTH                             SUBSCRIPT: MICROBIOLOGY
  UNIQUE ACCESSION #: YES                *QUICK INDEX: YES
  EDIT CODE: BACTERIOLOGY2               EXTRA LABELS: 1
  HIGHEST URGENCY ALLOWED: ROUTINE       REQUIRED TEST: YES
  PRINT NAME: BLOOD CULTURE
COLLECTION SAMPLE: BLOOD CULTURE
INSTITUTION: DEMO HOSPITAL               ACCESSION AREA: MICROBIOLOGY
SITE NOTES DATE: FEB 09, 2024
 NOTE:   REVIEWED FOR AUR. KR


LABTEST IEN: 2001378                     NAME: SPUTUM CULTURE
  TYPE: BOTH                             SUBSCRIPT: MICROBIOLOGY
  UNIQUE ACCESSION #: YES                UNIQUE COLLECTION SAMPLE: YES
  EDIT CODE: BACTERIOLOGY2               HIGHEST URGENCY ALLOWED: ROUTINE
  REQUIRED TEST: YES                     PRINT NAME: SPUTUM CULTURE
COLLECTION SAMPLE: SPUTUM CULTURE
INSTITUTION: DEMO HOSPITAL               ACCESSION AREA: MICROBIOLOGY
SITE NOTES DATE: FEB 20, 2024
 NOTE:   REVIWED FOR AUR KR


LABTEST IEN: 2001396                     NAME: CSF CULTURE
  TYPE: BOTH                             SUBSCRIPT: MICROBIOLOGY
  UNIQUE ACCESSION #: YES                UNIQUE COLLECTION SAMPLE: YES
  EDIT CODE: BACTERIOLOGY2               HIGHEST URGENCY ALLOWED: ROUTINE
  REQUIRED TEST: YES                     PRINT NAME: CSF CULTURE
COLLECTION SAMPLE: CSF CULTURE
INSTITUTION: DEMO HOSPITAL               ACCESSION AREA: MICROBIOLOGY
SITE NOTES DATE: FEB 20, 2024
 NOTE:   REVIEWED FOR AUR KR

Select LABORATORY TEST NAME:
```

Figure 3-5: LABORATORY TEST file examples

3.6   Assign Security Keys

BLRZ AUR AM/AU MENU: This key unlocks the main Antimicrobial Use and Resistance Reporting (AUR) menu and should be assigned to any personnel who will be tasked with performing or monitoring the Antimicrobial Resistance Reporting System or Antimicrobial Use Reporting System exports.

BLRAMZMENU: This key unlocks the Antimicrobial Resistance Reporting System [BLRAMMENU]. This key should be given to any personnel who will be tasked with supporting the Antimicrobial Resistance Reporting System exports.

BLRAUZMENU: This key unlocks the Antimicrobial Use Reporting System ... [BLRAUMENU]. This key should be given to any personnel who will be tasked with supporting the Antimicrobial Use Reporting System exports.

BLRZ AUAM SITE PARAMETER: This key unlocks the Site Parameter Setup ... [BLRAU SITE PARAMETER MENU]. This key should be given to any personnel who will be tasked with supporting the Antimicrobial Use and Resistance Reporting functionality.

BLRZ F6 ALERTS MG EDIT: This key unlocks the option to update the Mail Group with users who should receive alerts for this application.

BLRZAURTEST: This key unlocks the Antimicrobial Use Reporting System and Antimicrobial Resistance Reporting System option Date Range Option for Internal Testing [TEST]. This key should be given to any personnel who will be tasked with supporting the internal testing of the Antimicrobial Use and Resistance Reporting System exports.

3.7   Assign Menu Options

BLR AUR AM/AU MENU: This is the main AR/AU menu and should be assigned to any personnel who will be tasked with performing or monitoring the Antimicrobial Resistance Reporting System or Antimicrobial Use Reporting System exports. This option is locked with the BLRZ AUR AM/AU MENU security key. This menu option has 4 sub-menus/options:

- **BLRAMMENU**: This is the main Antimicrobial Resistance (AR) menu. It is locked with security key BLRAMZMENU and should be assigned to any personnel who will be tasked with performing or monitoring the Antimicrobial Resistance Reporting System exports.

- **BLRAUMENU**: This is the main Antimicrobial Use (AU) menu. It is locked with security key BLRAUZMENU and should be assigned to any personnel who will be tasked with performing or monitoring the Antimicrobial Use Reporting System exports.

- **BLRAU SITE PARAMETER MENU**: This menu option updates the site parameters for both the AR and AU reporting and should be assigned to any personnel who will be tasked with updating the Antimicrobial Use and Resistance Reporting System configuration settings.

- **MGE F6 ALERTS MAIL GROUP EDIT**: This option is used to update the Mail Group with users who should receive alerts for this application. This option is locked with security key BLRZ F6 ALERTS MG EDIT.

3.8   Edit the Site Parameters

The **SP** option is restricted by the BLRZMENU security key and can be used to display and update their Antimicrobial Use and Resistance Reporting site parameters. This option has four submenu options as described below.

```
   SPD     Display AU Site Parameters
   WS      Site Parameter and Ward Setup (NHSN Codes)
   MR      Medication Route Setup
   FMR     Find Medication Routes Used
```

Figure 3-1: Menu Options for the Site Parameters Setup Sub Menu

3.8.1   Site Parameter and Ward Setup (NHSN Codes) (WS)

The **WS** option can map Wards, ER, and Observation units to NHSN location codes and the NHSN Facility OID.

```
Select Site Parameter Setup Option: WS  Site Parameter and Ward Setup (NHSN
Codes)

This option is used to map WARDS, the ER and Observation Units to NHSN
Location Codes and enter your site ID.
Each Ward, the ER and Observation units must be assigned an appropriate
NHSN location code.
The site parameters will be pre-populated with all Wards defined in the
RPMS Ward Location file.  If a Ward is not active you can leave the NHSN
code blank.  Only Wards that are assigned an NHSN location code will be
reported.



Do you wish to continue? Y// ES


Enter the ANTIMICROBIAL USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes// <return>  (Yes)

EMERGENCY ROOM NHSN CODE: Emergency Department//
OBSERVATION NHSN CODE: 24-Hour Observation Area//
NHSN ASSIGNED FACILITY OID: 1.111.222.333.580//

The next screen will present all Wards and associated NHSN codes.
```

Figure 3-2: Sample Interaction to Update Site Parameters for Antimicrobial Use and
    Resistance Reporting (AUR)

```
Update Ward NHSN Codes        Mar 25, 2024 10:42:45        Page: 1 of   1
     WARD                              NHSN CODE


1)   ICU WARD                         1027-2   Medical Critical Care
2)   SWING BED
3)   CHH INPATIENT
4)   MEDICAL WARD                      1060-3   Medical Ward
5)   MULTI SERVICE
6)   EAST GENMED
7)   WEST
8)   SOUTH OBGYN
9)   INPATIENT FLOOR
10)  NEWBORN ICU
11)  GENERAL MEDICINE
12)  PEDIATRIC WARD                    1076-9   Pediatric Medical Ward
13)  MEDICAL WEST
14)  CZ CHH WARD
15)  POST SURGERY


        Enter ?? for more actions
S    Select Ward                      Q    Quit
```

Figure 3-3: Listing of Wards Mapped to NHSN Location Codes

3.8.2   Medication Route Setup (MR)

The **MR** option can be used to map the medication routes identified in the **Find Medication Routes in Use** option to the four values that NHSN wants the site to report on. The user will be asked to select the site for reporting. In the ListMan, the user will select a medication route from the list and if it can be categorized as Digestive tract, Intramuscular, Intravascular, or Respiratory tract.

```
Select Site Parameter Setup Option: MR  Medication Route Setup

This option is used to map Medication Routes to NHSN Codes.
The site parameters have been pre-populated with common Medication Routes
used in BCMA, the IV Pharmacy System and Unit Dose for drugs with a
VA Drug Class indicating it is an Antimicrobial drug.

This list must be mapped to the codes below.  You can add additional
Medication Routes to the list.

The 4 codes are:
     - Digestive tract route      2522-1
     - Intramuscular route (IM)   78421000
     - Intravascular route (IV)   47625008
     - Respiratory tract route    2523-9


Do you wish to continue? Y// ES


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes//   (Yes)

Update Med Route NHSN Codes   Mar 25, 2024 10:43:03        Page: 1 of   1
    MED ROUTE                               NHSN CODE DESCRIPTION


1)   ORAL                                   2522-1    Digestive tract
2)   J TUBE                                 2522-1    Digestive tract
3)   G TUBE                                 2522-1    Digestive tract
4)   RECTAL                                 2522-1    Digestive tract
5)   INTRAVENOUS                            47625008  Intravascular
6)   INTRAMUSCULAR                          78421000  Intramuscular
7)   TOPICAL
8)   INHALATION                             2523-9    Respiratory tract
9)   IV PIGGYBACK                           47625008  Intravascular
10)  IV PUSH                                47625008  Intravascular
11)  ORAL PO                                2522-1    Digestive tract



        Enter ?? for more actions
U    Update NHSN Code    AD   Add Medication Route Q    Quit
```

Figure 3-4: Display of Medication Routes with NHSN Codes Assigned

3.8.3 Find Medication Routes Used (FMR)

The **FMR** option can be used to identify the medication routes used at the site. This list can be used with the MR option to map those medication routes that need to be reported to NHSN. Queuing the process is recommended to allow the search to be completed without the user waiting for an undetermined amount of time.

```
This option is used to scan the BCMA, IV Med and Unit Dose medication files
to find all Medication Routes used with Antimicrobial drugs (VA DRUG CLASS
AM*). Those that are found will be put into the Medication Route site
parameter so they can be assigned an NHSN code.


This process could take up to an hour depending on how large those files
are so it is recommended that you queue to run in the background.


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes//   (Yes)

Won't you queue this ? Y// NO
<CR> to continue:
```

Figure 3-5: Sample Interaction to Find Medication Routes Used at the Site to be Mapped

3.8.4 F6 ALERTS MAIL GROUP EDIT (MGE)

The **MGE** option can be used to manage the RPMS users who should be alerted to the AUR Reporting transmission generation tasks status. This option allows users to be added or removed from the F6 ALERTS mail group.

```
Select Antimicrobial Use and Resistance Reporting (F6) Option: MGE   F6
ALERTS MAIL GROUP


                            DEMO HOSPITAL (INST)
Date: 03/25/24                    RPMS Lab
Time: 10:44 AM
                               F6 ALERTS
BLREMERA
                        Mail Group Modifications
                             MAIN MENU
-------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):
```

Figure 3-6: AUR ALERTS Mail Group Modifications main menu

From the main menu, type **3** to list the users assigned to the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                     RPMS Lab
Time: 10:44 AM

                                   F6 ALERTS
BLREMERA
                          Mail Group Modifications
                               MAIN MENU
------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):3
```

Figure 3-7: AUR ALERTS Mail Group main menu–Select 3 to List Users

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                   IHS Laboratory                    Page 1
Time: 10:44 AM                     F6 ALERTS
BLREMERA
                            Mail Group Members


    DUZ       Name
------------------------------------------------------------------------
    1111      LABORATORY, USER
    2222      PHARMACY, USER
    3333      INFORMATICIST, USER
    4444      INFECTION CONTROL, USER
    5555      AREA SUPPORT, USER


        5 Members
```

Figure 3-8: AUR ALERTS Mail Group Members List

From the main menu, type **2** to delete users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                     RPMS Lab
Time: 10:44 AM

                                   F6 ALERTS
BLREMERA
                          Mail Group Modifications
                               MAIN MENU
------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 2
```

Figure 3-9: AUR ALERTS Mail Group main menu–Select 2 to Delete User

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                           Delete User from Mail Group
-----------------------------------------------------------------------------

Select one of the users below to delete:

     1 LABORATORY, USER
     2 PHARMACY, USER
     3 INFORMATICIST, USER
     4 INFECTION CONTROL, USER
     5 AREA SUPPORT, USER

Enter Number: 1

    LABORATORY, USER deleted from F6 ALERTS Mail Group
```

Figure 3-10: AUR ALERTS–Successfully Deleted User from Mail Group

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                           Delete User from Mail Group
-----------------------------------------------------------------------------

Select one of the users below to delete:

     1 PHARMACY, USER
     2 INFORMATICIST, USER
     3 INFECTION CONTROL, USER
     4 AREA SUPPORT, USER

Enter Number:

    Exit/No Entry.

        Press RETURN Key: ^

    1 User deleted from F6 ALERTS

    0 Errors when trying to delete users from F6 ALERTS
```

Figure 3-11: AUR ALERTS–Successfully Deleted User from Mail Group

From the main menu, type **1** to add users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                     RPMS Lab
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                            Mail Group Modifications
                                 MAIN MENU
----------------------------------------------------------------------------
    1) Add User to Mail Group          2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 1
```

Figure 3-12: AUR ALERTS Mail Group main menu–Select 1 to Add User

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                            Add User to Mail Group
----------------------------------------------------------------------------

Select NEW PERSON: LABORAOTRY NEW, USER

    LABORATORY, NEW USER added to F6 ALERTS
```

Figure 3-13: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                            Add User to Mail Group
----------------------------------------------------------------------------

Select NEW PERSON: ^

    Exit/No Entry.

        Press RETURN Key:

    1 Users added to F6 ALERTS

    0 Errors when trying to add users to F6 ALERTS
```

Figure 3-14: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

3.9   Recurring Tasks

Following successful onboarding, the export process will be scheduled as recurring tasks in TaskMan as BLRAM QUEUE EXPORT and BLRAU QUEUE EXPORT, as described below in Section 4.0. These exports can be monitored via the Display Antimicrobial Resistance Option Log Entry (ARDL) option or the Display Antimicrobial Use Report Entry (AUDL) option, as documented in Section 4.2 and Section 4.6, respectively.

4.0   Regular Exporting of Antimicrobial Use and Resistance Data

This section addresses the day-to-day operations of the exporting process. The information here assumes that your site completed the NHSN onboarding, initial testing, and setting up the recurring task as described in the LR v5.2 p 1055 Install Addendum.

When the initial data validation to NHSN is complete, a site will begin monthly exports to be uploaded to NHSN. Each option used is described in detail in this section of the manual. The normal process would be the following:

1. Generate the antimicrobial resistance transmission files. The option to generate the antimicrobial resistance transmission files is called **AREX - Generate Antimicrobial Resistance Transmission**. (See Section 4.1 for details on using this option.) The option **BLRAM QUEUE EXPORT** can also be scheduled to run automatically in TaskMan. This alleviates the need for the user to run the **AREX** option manually.

2. Generate the antimicrobial use transmission files. The option to generate the antimicrobial resistance transmission files is **AUEX-Generate Antimicrobial Use Transmission** (See Section 4.1 for details on using this option). The option **BLRAU QUEUE EXPORT** can also be scheduled to run automatically in TaskMan. This alleviates the need for the user to run the **AUEX** option manually.

3. The exported files will be manually uploaded to NHSN on most sites. Options to automatically submit exported files have not been identified and implemented.

4.1   Generate Antimicrobial Resistance Reporting Transactions (AREX)

This option generates the Antimicrobial Resistance Reporting Option (ARO) detail and summary export files. It will generate transactions (HL7/CDA messages) for each resulting antimicrobial resistance laboratory test identified by the logic for the previous month. For example, if the option is run on Jan 18, 2024, the export/extract will be from December 1, 2023, through December 31, 2023.

When you select the **AREX** option, it will loop through all visits to be exported, and then the processing stops and returns you to your menu. When that process has been completed, you will see files in the export directory with names like AUR numerator - 33227062-1 -Apr302024.xml, ARO Summary - 33227062-1 -Apr302024 .xml, where the first number is the Job Number for the extract, the second number is the incremental counter for the file created by the job and the last is the date the extract was started.

The system is not configured to automatically SFTP this file to NHSN. The NHSN onboarding team will provide information on how and where to upload the files manually.

After it has been successfully transferred, the file can be archived. You should maintain at least a year's worth of files before deleting them if a file is lost or needs to be sent to the NHSN platform.

The **AREX** option should be run monthly, no later than seven days after the end of the previous month. When the **AREX** option is executed, the following dialog occurs. For demonstration purposes, the execution of the **AREX** option is not queued in this example. The **BLRAM QUEUE EXPORT** option can be queued to run in the background. You should run this after normal working hours when the system is not heavily used.

Use the following steps to generate an export transaction:

1. At the **Select Antimicrobial Resistance Reporting Menu Option:** prompt, type **AREX**.

2. Type **YES** at the "**Do you want to continue?**" prompt.

3. Type **YES** or **NO** at the "**Do you want to Queue this to run at a later time?**" prompt.

> **Note:** Consider queueing after normal working hours when the system is not in heavy use.

```
                 **************************************************
                 **      Antimicrobial Use Reporting System     **
                 **************************************************
                              Version 5.2 (Patch 1055)

                              DEMO HOSPITAL (INST)


   AREX    Generate Antimicrobial Resistance Transmission
   ARDL    Display Antimicrobial Resistance Transmission Log
   ARRX    Re-Run Previously Run AM Resistance Transmission
   ARDR    Date Range Antimicrobial Resistance Transactions
   TEST    Date Range Option for Internal Testing

Select Antimicrobial Resistance Reporting System Option: AREX   Generate
Antimicrobial Resistance Transmission

This option will generate a transmission of Antimicrobial Resistance
Reporting transactions for the previous month.
You may "^" out at any prompt and will be ask to confirm your entries
prior to generating the transmission.


The date range for this run is Dec 2023.  Dec 01, 2023 to Dec 31, 2023.
```

```
The computer database location for this run is DEMO HOSPITAL (INST).

Do you want to continue? N// YES
Generating New Log entry.
```

Figure 4-1: Generating AREX Export Records

4.2   Display Export Log Entry (ARDL)

This menu option can be utilized for your site to attest to monthly antimicrobial resistance reporting to NHSN for the AUR module.

After you run an export, you can display information about which lab tests were generated and available to upload to NHSN. The **Antimicrobial Resistance Reporting Log** file is a historical record of the exports generated. The **ARDL** report option allows the user to review various items in a transmission log file after executing an AREX. The following information is contained in the log file and may be reviewed using the **ARDL** report option:

- The sequence number of the Antimicrobial Resistance reporting export.

- The date range of the export.

- The beginning and ending times for the generation.

- Total run time.

- The run location (i.e., where the export was done).

- Export type: regular or date range export.

- Transmission status.

- A total count of the number of HL7/CDA messages exported.

- Lab tests exported.

> **Note:** If the value for any of the above record counts is zero, the line referring to that count will not be displayed.

To display the Antimicrobial Resistance Reporting export log entry:

1. At the "**Select Antimicrobial Resistance Reporting Export Menu Option:**" prompt, type **ARDL**.

2. At the "**Select BLRAM ANTIMICROBIAL RESISTANCE Log Beginning Date:**" prompt, type the log number or the beginning date of the transaction log of interest. If you do not know the date, type a question mark (**?**) and press Enter to view a list of the export logs.

3. You may print the entry or browse the output on the screen. At the "**Do you want to:**" prompt, type **P** (Print Output) or **B** (Browse Output on Screen). You will be prompted to select an output device if you select print.

```
                    **************************************************
                    **      Antimicrobial Use Reporting System     **
                    **************************************************
                              Version 5.2 (Patch 1055)

                             DEMO HOSPITAL (INST)


   AREX    Generate Antimicrobial Resistance Transmission
   ARDL    Display Antimicrobial Resistance Transmission Log
   ARRX    Re-Run Previously Run AM Resistance Transmission
   ARDR    Date Range Antimicrobial Resistance Transactions
   TEST    Date Range Option for Internal Testing

Select Antimicrobial Resistance Reporting System Option: ARDL   Display
Antimicrobial Resistance Transmission Log

Display ANTIMICROBIAL RESISTANCE TRANSMISSION Log Entry

Type a ?? and press enter at the following prompt to view a list of RUN
DATES.
Or, if you know the run date you can enter it in the format MM/DD/YY:  e.g.
2/26
/19

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: T   JAN 19, 2024
  partial match to:  JAN 19, 2024@08:20:42
         ...OK? Yes//   (Yes)

OUTPUT BROWSER              Jan 19, 2024 08:22:11          Page: 1 of 10
Antimicrobial Resistance Transmission Log Display


              ANTIMICROBIAL RESISTANCE TRANSMISSION LOG REPORT
      Information for Log Entry 124 Run Date:  JAN 19, 2024@08:20:42

                                  Number:   124
                 Run Database/Location:   DEMO HOSPITAL (INST)
                        Beginning Date:   DEC 01, 2023
                           Ending Date:   DEC 31, 2023
                           Export Type:   REGULAR
                   Transmission Status:   E
            # V MICRO tests transmitted:   30
               # V MICRO tests skipped:   26
             # V LAB tests transmitted:   0
                # V LAB tests skipped:   0
                        # Admissions:   8
                    # Inpatient Days:   489
           # Inpatient Blood Cultures:   11
                     # ER Encounters:   7
                  # ER Blood Cultures:   4
            # Observation Encounters:   1
         # Observation Blood Cultures:

  V MICROBIOLOGY ENTRIES EXPORTED
110112    BLOOD CULTURE (MI)              DEMO,FSIXPATIENT ONE
```

```
    Dec 01, 2023  UID: 4023000185          INPATIENT
110113    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT THR
    Dec 01, 2023  UID: 4023000186          EMERGENCY DEPARTMENT
110136    CSF CULTURE (MI)                 DEMO,FSIXPATIENT ONE
    Dec 01, 2023  UID: 4023000187          INPATIENT
110137    CSF CULTURE (MI)                 DEMO,FSIXPATIENT THR
    Dec 01, 2023  UID: 4023000188          EMERGENCY DEPARTMENT
110138    URINE CULTURE (MI)               DEMO,FSIXPATIENT ONE
    Dec 01, 2023  UID: 4023000189          INPATIENT
110139    URINE CULTURE (MI)               DEMO,FSIXPATIENT THR
    Dec 01, 2023  UID: 4023000190          EMERGENCY DEPARTMENT
110140    SPUTUM CULTURE (MI)              DEMO,FSIXPATIENT ONE
    Dec 01, 2023  UID: 4023000191          INPATIENT
+         Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
    Dec 01, 2023  UID: 4023000191          INPATIENT
110141    SPUTUM CULTURE (MI)              DEMO,FSIXPATIENT THR
    Dec 01, 2023  UID: 4023000192          EMERGENCY DEPARTMENT
110142    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT SEV
    Dec 04, 2023  UID: 4023000193          INPATIENT
110143    CSF CULTURE (MI)                 DEMO,FSIXPATIENT SEV
    Dec 04, 2023  UID: 4023000194          INPATIENT
110144    URINE CULTURE (MI)               DEMO,FSIXPATIENT SEV
    Dec 04, 2023  UID: 4023000195          INPATIENT
110145    SPUTUM CULTURE (MI)              DEMO,FSIXPATIENT SEV
    Dec 04, 2023  UID: 4023000196          INPATIENT
110146    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT EIG
    Dec 04, 2023  UID: 4023000197          INPATIENT
110147    CSF CULTURE (MI)                 DEMO,FSIXPATIENT EIG
    Dec 04, 2023  UID: 4023000198          INPATIENT
110148    URINE CULTURE (MI)               DEMO,FSIXPATIENT EIG
    Dec 04, 2023  UID: 4023000199          INPATIENT
110149    SPUTUM CULTURE (MI)              DEMO,FSIXPATIENT EIG
    Dec 04, 2023  UID: 4023000200          INPATIENT
+         Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
    Dec 04, 2023  UID: 4023000200          INPATIENT
110680    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT NIN
    Dec 15, 2023  UID: 4023000225          INPATIENT
110681    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT TEN
    Dec 15, 2023  UID: 4023000226          INPATIENT
110682    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT ELE
    Dec 15, 2023  UID: 4023000227          INPATIENT
110683    BLOOD CULTURE (MI)               DEMO,FSIXPATIENT TWE
    Dec 15, 2023  UID: 4023000228          EMERGENCY DEPARTMENT
110684    CSF CULTURE (MI)                 DEMO,FSIXPATIENT NIN
    Dec 15, 2023  UID: 4023000229          INPATIENT
110685    CSF CULTURE (MI)                 DEMO,FSIXPATIENT ELE
    Dec 15, 2023  UID: 4023000230          INPATIENT
110687    CSF CULTURE (MI)                 DEMO,FSIXPATIENT TWE
    Dec 15, 2023  UID: 4023000232          EMERGENCY DEPARTMENT
110927    URINE CULTURE (MI)               DEMO,FSIXPATIENT ONE
    Dec 19, 2023  UID: 4023000233          INPATIENT
110928    URINE CULTURE (MI)               DEMO,FSIXPATIENT THR
    Dec 19, 2023  UID: 4023000234          EMERGENCY DEPARTMENT
+         Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
    Dec 19, 2023  UID: 4023000234          EMERGENCY DEPARTMENT
```

```
110929    URINE CULTURE (MI)              DEMO,FSIXPATIENT SEV
   Dec 19, 2023  UID: 4023000235          INPATIENT
110930    URINE CULTURE (MI)              DEMO,FSIXPATIENT EIG
   Dec 19, 2023  UID: 4023000236          INPATIENT
110931    SPUTUM CULTURE (MI)             DEMO,FSIXPATIENT ONE
   Dec 19, 2023  UID: 4023000237          INPATIENT
110933    SPUTUM CULTURE (MI)             DEMO,FSIXPATIENT SEV
   Dec 19, 2023  UID: 4023000239          INPATIENT
110934    SPUTUM CULTURE (MI)             DEMO,FSIXPATIENT EIG
   Dec 19, 2023  UID: 4023000240          INPATIENT

V MICROBIOLOGY ENTRIES SKIPPED
110480    BLOOD CULTURE (MI)              DEMO,FSIXPATIENT ONE    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000201
110481    CSF CULTURE (MI)                DEMO,FSIXPATIENT ONE    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000202
110482    BLOOD CULTURE (MI)              DEMO,FSIXPATIENT THR    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000203
110483    CSF CULTURE (MI)                DEMO,FSIXPATIENT THR    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000204
110484    BLOOD CULTURE (MI)              DEMO,FSIXPATIENT SEV    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000205
110485    CSF CULTURE (MI)                DEMO,FSIXPATIENT SEV    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000206
110486    BLOOD CULTURE (MI)              DEMO,FSIXPATIENT EIG    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000207
110487    CSF CULTURE (MI)                DEMO,FSIXPATIENT EIG    Dec 05,
2023
   Invasive 14 day rule
   UID: 4023000208
110672    URINE CULTURE (MI)              DEMO,FSIXPATIENT ONE    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000217
110673    SPUTUM CULTURE (MI)             DEMO,FSIXPATIENT ONE    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000218
110674    URINE CULTURE (MI)              DEMO,FSIXPATIENT THR    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000219
110675    SPUTUM CULTURE (MI)             DEMO,FSIXPATIENT THR    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000220
```

```
110676    URINE CULTURE (MI)            DEMO,FSIXPATIENT SEV    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000221
110677    SPUTUM CULTURE (MI)           DEMO,FSIXPATIENT SEV    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000222
+        Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
   UID: 4023000222
110678    URINE CULTURE (MI)            DEMO,FSIXPATIENT EIG    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000223
110679    SPUTUM CULTURE (MI)           DEMO,FSIXPATIENT EIG    Dec 12,
2023
   Non-invasive 30 day rule
   UID: 4023000224
110686    CSF CULTURE (MI)              DEMO,FSIXPATIENT TEN    Dec 15,
2023
   No Valid SNOMED in Lab Data file for Accession MI 23 231.
   UID: 4023000231
110932    SPUTUM CULTURE (MI)           DEMO,FSIXPATIENT THR    Dec 19,
2023
   No Valid SNOMED in Lab Data file for Accession MI 23 238.
   UID: 4023000238
110936    BLOOD CULTURE (MI)            DEMO,FSIXPATIENT NIN    Dec 19,
2023
   Invasive 14 day rule
   UID: 4023000242
110937    BLOOD CULTURE (MI)            DEMO,FSIXPATIENT ELE    Dec 19,
2023
   Invasive 14 day rule
   UID: 4023000243
+        Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN     Q    QUIT
   UID: 4023000243
110938    BLOOD CULTURE (MI)            DEMO,FSIXPATIENT TWE    Dec 19,
2023
   Invasive 14 day rule
   UID: 4023000244
110939    CSF CULTURE (MI)              DEMO,FSIXPATIENT NIN    Dec 19,
2023
   Invasive 14 day rule
   UID: 4023000245
110940    CSF CULTURE (MI)              DEMO,FSIXPATIENT ELE    Dec 19,
2023
   Invasive 14 day rule
   UID: 4023000246
110941    CSF CULTURE (MI)              DEMO,FSIXPATIENT TEN    Dec 19,
2023
   No Valid SNOMED in Lab Data file for Accession MI 23 247.
   UID: 4023000247
110942    BLOOD CULTURE (MI)            DEMO,ALTON CHARLES      Dec 19,
2023
   Patient DEMO,ALTON CHARLES [22530] Not Valid because Not InPatient on
12/19/2
   UID: 4023000249
```

```
110983    CSF CULTURE (MI)              DEMO,FSIXPATIENT TWE    Dec 19,
2023
    Invasive 14 day rule
    UID: 4023000248

    V LAB ENTRIES EXPORTED



          Enter ?? for more actions
>>>
+    NEXT SCREEN         -     PREVIOUS SCREEN     Q    QUIT    4294479
_COVID-19(Abbott ID NOW)   COVID-19 POSITIVE   10/9/2020@1
```

Figure 4-2: Displaying the Antimicrobial Resistance Reporting export log entry

4.3   Re-Run Previously Run Resistance Transmission (ARRX)

The Re-Run Previously Run Resistance Transmission (**ARRX**) option is available for use if a given transmission is lost, damaged, or destroyed, and the file must be re-created and re-sent to the destination. This should rarely, if ever, occur.

This option serves as a backup function that allows for regenerating antimicrobial resistance lab events that had been previously compiled when the **AREX** option was executed. If a log entry for a particular date range has been purged, then the **ARRX** option cannot be executed.

```
Select Antimicrobial Resistance Reporting System Option: ARRX   Re-Run
Previously Run AM Resistance Transmission

Type a ?? and press enter at the following prompt to view a list of
ORIGINAL RUN DATES.
Or, if you know the original run date you can enter it in the format
MM/DD/YY:
e.g. 2/26/19

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: T   MAR 25, 2024
     1    3-25-2024@10:36:42
     2    3-25-2024@10:36:59
     3    3-25-2024@10:37:21
CHOOSE 1-3: 3   3-25-2024@10:37:21

Log entry 32 was for date range FEB 01, 2024 through FEB 29, 2024.
Do you want to regenerate the Antimicrobial transactions for this run? N//
YES

Generating Antimicrobial Resistance transactions.   (21)
Updating log entry.
DONE -- Press ENTER to Continue:
```

Figure 4-3: Main Sub Menu for Antimicrobial Resistance Reporting Transmission System

To use the **ARRX** option, use the following steps:

1. At the "**Select Electronic Lab Reporting Export Menu Option:**" prompt, type **ARRX**.

2. At the "**Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME:**" prompt, type the beginning date of the transaction log. If you do not know this date, type a question mark (**?**) and press **Enter** to view a list of the previous transactions.

3. Type **YES** or **NO** at the "**Do you want to regenerate the transactions for this run?**" prompt. If the date range displayed is incorrect, type **NO** to return to the main **Antimicrobial Resistance Reporting** menu.

4. At the "**Do you want to Queue this to run at a later time?**" prompt, type **YES** or **NO**.

```
               **************************************************
               **      Antimicrobial Use Reporting System      **
               **************************************************
                          Version 5.2 (Patch 1055)

                          DEMO HOSPITAL (INST)


    AMEX    Generate Antimicrobial Resistance Transmission
    AMDL    Display Antimicrobial Resistance Transmission Log
    AMRX    Re-Run Previously Run AM Resistance Transmission
    AMDR    Date Range Antimicrobial Resistance Transactions
    TEST    Date Range Option for Internal Testing

Select Antimicrobial Resistance Reporting System Option: AMRX   Re-Run
Previously Run AM Resistance Transmission

Type a ?? and press enter at the following prompt to view a list of
ORIGINAL RUN DATES.
Or, if you know the original run date you can enter it in the format
MM/DD/YY:
e.g. 2/26/19

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: T   JAN 19, 2024
??

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: 1/19   JAN 19,
2024 ??

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: 01/19/2024   JAN
19, 20
24 ??

Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME:  ?
 Answer with BLRAM ANTIMICROBIAL RESISTANCE LOG LOG NUMBER, or
     RUN DATE/TIME
 Do you want the entire BLRAM ANTIMICROBIAL RESISTANCE LOG List? Y (Yes)
    Choose from:
    1           JUL 13, 2023@14:56:31
    2           JUL 13, 2023@14:59:20
    3           JUL 13, 2023@15:18:29
    4           JUL 13, 2023@15:22:10
    5           JUL 13, 2023@15:24
    6           JUL 13, 2023@15:24:40
    7           JUL 13, 2023@15:26:58
```

```
8              JUL 13, 2023@15:29:47
9              JUL 13, 2023@15:31:19
10             JUL 13, 2023@15:33:03
11             JUL 13, 2023@15:34:54
12             JUL 13, 2023@15:36:27
13             JUL 13, 2023@15:37:16
14             JUL 14, 2023@10:41:46
15             JUL 14, 2023@11:00:06
16             JUL 18, 2023@08:43:15
17             JUL 18, 2023@08:56:53
18             JUL 18, 2023@09:02:23
19             JUL 18, 2023@09:06:10
20             JUL 18, 2023@09:11:32
21             JUL 20, 2023@15:37:51
22             JUL 26, 2023@09:46:06
23             JUL 26, 2023@12:29:06
24             JUL 28, 2023@14:02:54
25             JUL 31, 2023@13:56:16
26             AUG 01, 2023@14:14:24
27             AUG 10, 2023@14:28:28
28             AUG 11, 2023@15:14:06
29             AUG 11, 2023@17:47:05
30             AUG 21, 2023@08:19:23
31             AUG 21, 2023@08:26:41
32             AUG 24, 2023@12:15:26
33             AUG 29, 2023@14:34:46
35             AUG 30, 2023@07:55:51
37             AUG 30, 2023@09:06:47
38             AUG 30, 2023@09:26:51
39             AUG 30, 2023@10:44:09
40             AUG 30, 2023@14:49:29
41             AUG 30, 2023@14:50:35
43             OCT 10, 2023@12:01:02
44             OCT 10, 2023@12:02:38
45             OCT 10, 2023@12:35:40
46             OCT 10, 2023@13:19:32
47             OCT 11, 2023@09:04:24
48             OCT 11, 2023@09:12:47
49             OCT 11, 2023@09:14:17
50             OCT 11, 2023@10:43:01
75             NOV 06, 2023@10:20:36
76             NOV 06, 2023@11:53:15
77             NOV 06, 2023@17:12:10
80             NOV 07, 2023@16:38:03
81             NOV 08, 2023@06:55:07
82             NOV 08, 2023@14:50:21
83             NOV 14, 2023@10:42:45
85             NOV 30, 2023@12:04:42
86             NOV 30, 2023@12:16:07
87             DEC 01, 2023@08:47:31
90             DEC 01, 2023@12:41:03
91             DEC 04, 2023@09:51:47
92             DEC 04, 2023@11:54:15
93             DEC 06, 2023@11:08:23
94             DEC 06, 2023@11:37:23
95             DEC 07, 2023@10:53:03
96             DEC 07, 2023@11:43:22
97             DEC 07, 2023@11:44:40
103            JAN 02, 2024@08:26:39
104            JAN 02, 2024@13:28:22
105            JAN 02, 2024@13:31:21
```

```
    106          JAN 03, 2024@08:52:36
    107          JAN 03, 2024@09:41:39
    108          JAN 03, 2024@13:28:41
    109          JAN 04, 2024@07:38:22
    114          JAN 08, 2024@09:26:38
    116          JAN 08, 2024@10:13:41
    117          JAN 08, 2024@14:15:15
    118          JAN 10, 2024@14:05:25
    119          JAN 10, 2024@14:26:51


Select BLRAM ANTIMICROBIAL RESISTANCE LOG RUN DATE/TIME: 119 1-10-
2024@14:26:51


Log entry 119 was for date range DEC 01, 2023 through
JAN 09, 2024.
Do you want to regenerate the Antimicrobial transactions for this run? N//
YES


Generating Antimicrobial Resistance transactions.   (97)
Updating log entry.
DONE -- Press ENTER to Continue:
```

Figure 4-4: Using the ARRX option

4.4   Date Range Antimicrobial Resistance Transmission (ARDR)

The **ARDR** option can be used to export all results of antimicrobial resistance lab tests for a selected month and year to the export directory, which can be uploaded to NHSN. This option should only be used if you are requested by NHSN to resubmit data from a certain time period.

```
Select Antimicrobial Resistance Reporting System Option: ARDR   Date Range
Antimicrobial Resistance Transactions

                        DEMO HOSPITAL (INST)

***  ANTIMICROBIAL RESISTANCE REPORTING TRANSMISSION FOR A SELECTED MONTH
***

This program will generate Antimicrobial Resistance transactions for a
month/year that you enter.  A log entry will be created which will log
the data generated.

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for reporting: 12/23   (DEC 23, 2023)
Enter only a Month and 4 digit year.  E.g. 01/2021 or JAN 2021

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for reporting: 12/2023   (DEC 2023)

Log entry 33 will be created and data generated for
```

```
date range DEC 01, 2023 to DEC 31, 2023.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Resistance transactions.   (9)
Updating log entry.
DONE -- Press ENTER to Continue:
```

Figure 4-5: Sample Interaction to Generate a Transmission for a Specified Month and Year

4.5   Generate Antimicrobial Use Report (AUEX)

The **AUEX** option exports antimicrobial pharmacy data for antimicrobial use to the export directory configured in the BLRAM ensemble production. Medication administration data is compiled and submitted during export to the CDA document generator to create antimicrobial use reporting (AUP) summary reports in CDA format (HL7 v3) documents. Once all medications administered are identified, output files will automatically be created and written to the export directory.

The process of generating the AUP Summary reports may take several minutes to complete after this option is executed. You will not see the output files in the export directory until the CDA document generation has been completed, even though you have returned to your menu. A log entry is then created in the **BLRAU EXPORT LOG** file.

This option can be scheduled to run at a desired interval in the task manager. BLRAU QUEUE EXPORT is another option that can be scheduled to run automatically. For instructions on scheduling an option to run at a desired interval, see the VA Kernel user manual.

```
Select Antimicrobial Use Reporting System Option: AUEX    Generate
Antimicrobial Use Report

This option will generate a transmission of an Antimicrobial Use
Report for a specified month/year.
You may "^" out at any prompt and will be ask to confirm your entries
prior to generating the transmission.


The date range for this run is Feb 2024.  Feb 01, 2024 to Feb 29, 2024.


The computer database location for this run is DEMO HOSPITAL (INST).

Do you want to continue? N// YES
Generating New Log entry.
Do you want to QUEUE this to run at a later time? N// O

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.3
```

Figure 4-6: Sample Interaction to Generate an Antimicrobial Use Report Extract

4.6   Display Antimicrobial Use Report Log (AUDL)

The **BLRAU EXPORT LOG** file is a historical record of the exports made. The
AUDL report option allows the AUR Pharmacy Export Manager to review various
items contained in the export log file after an AUR export was executed, including
the Export Log Number, Run Database/Location, Beginning Date, Ending Date,
Export Type, Transmission Status, # of Medications Administered Exported and
Filename Created. Within each Log Entry, the details for each Medication by
Antimicrobial Agent (primary ingredient) exported can be displayed, which includes
the BCMA IEN, Antimicrobial Agent, Route Administered, and Therapy Days.

This option can be utilized to allow a site to attest that they are reporting to NHSN on
a monthly basis.

```
Select Antimicrobial Use Reporting System Option: AUDL  Display
Antimicrobial Use Log


Display ANTIMICROBIAL USE REPORT Log Entry

Type a ?? and press enter at the following prompt to view a list of RUN
DATES.
Or, if you know the run date you can enter it in the format MM/DD/YY:  e.g.
2/26/19

Select BLRAU ANTIMICROBIAL USE LOG RUN DATE/TIME: T   MAR 25, 2024
     1   3-25-2024@10:39:29
     2   3-25-2024@10:39:42
     3   3-25-2024@10:39:54

CHOOSE 1-3: 3  3-25-2024@10:39:54
```

Figure 4-7: Sample Interaction to Display an Antimicrobial Use Report Extract Log Entry

The data will display in a ListMan screen as shown in the following display.

```
OUTPUT BROWSER              Mar 25, 2024 10:39:54         Page: 1 of  22
Antimicrobial Use Report Log Display


                    ANTIMICROBIAL USE REPORT LOG REPORT
       Information for Log Entry 49 Run Date:  MAR 25, 2024@10:39:42

                                 Number:   49
                                Facility:   DEMO HOSPITAL (INST)
                          Beginning Date:   FEB 01, 2024
                            Ending Date:   FEB 29, 2024
                     Month/Year of Report:   FEB 2024
                             Export Type:   REGULAR
                     Transmission Status:    SUCCESSFULLY COMPLETED
_____


   FACWIDEIN (1250-0)          INPATIENT DAYS: 57    ADMISSIONS: 3
  -----------------------------------------------------------------------
      RXNORM     DRUG NAME                    ROUTE                TOTAL #
  -----------------------------------------------------------------------
     620        amantadine                                          1
                                      2522-1 Digestive Tract    2
                                      2523-9 Respiratory tract   0
                                      47625008 Intravascular     0
                                      78421000 Intramuscular     0
     723        amoxicillin                                         1
                                      2522-1 Digestive Tract    2
                                      2523-9 Respiratory tract   0
                                      47625008 Intravascular     0
                                      78421000 Intramuscular     0
     1272       aztreonam                                           4
                                      2522-1 Digestive Tract    0
                                      2523-9 Respiratory tract   5
                                      47625008 Intravascular     0
                                      78421000 Intramuscular     0
     2191       ceftazidime                                         3
                                      2522-1 Digestive Tract    0
                                      2523-9 Respiratory tract   0
                                      47625008 Intravascular     3
                                      78421000 Intramuscular     1
+        Enter ?? for more actions
>>>
+   NEXT SCREEN        -    PREVIOUS SCREEN      Q    QUIT
```

Figure 4-8: Sample Display of a Portion of an Antimicrobial Use Report Log Display

Each reporting location is displayed as shown above by antimicrobial agent
(RXNORM) and medication route. Detailed records are displayed at the end of the
log to allow review of specific medications reviewed or skipped.

```
_____

BCMA ANTIMICROBIAL ADMINSTRATION ENTRIES REVIEWED AND COUNTED
--------------------------------------------------------------------
BCMAIEN   HRN     PATIENT                 WARD            WARD CODE
--------------------------------------------------------------------
198      464646  DEMO,FSIX FOUR          EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 310155      DRUG: ERYTHROMYCIN 250MG TAB
   ROLL UP RXNORM: 4053  erythromycin
   ACTION TIME: Feb 29, 2024@11:20:01    ROUTE: ORAL (2522-1)
199      464646  DEMO,FSIX FOUR          EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 205964      DRUG: CLINDAMYCIN 600MG/4ML INJ
   ROLL UP RXNORM: 2582  clindamycin
   ACTION TIME: Feb 29, 2024@11:20:19    ROUTE: INTRAMUSCULAR (78421000)
200      464646  DEMO,FSIX FOUR          EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 29, 2024@11:20:59    ROUTE: IV PIGGYBACK (47625008)
201      464646  DEMO,FSIX FOUR          EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 348719      DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 29, 2024@11:21:22    ROUTE: INHALATION (2523-9)
202      464646  DEMO,FSIX FOUR          EMERGENCY DEPARTMENT (1108-0)
   RXNORM: 901610      DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ROLL UP RXNORM: 1272  aztreonam
   ACTION TIME: Feb 29, 2024@11:21:50    ROUTE: INHALATION (2523-9)
182      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 348719      DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 20, 2024@23:23:02    ROUTE: INHALATION (2523-9)
183      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 901610      DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ROLL UP RXNORM: 1272  aztreonam
   ACTION TIME: Feb 20, 2024@23:23:12    ROUTE: INHALATION (2523-9)
184      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 562508      DRUG: AMOXICILLIN/CLAVULANATE 875MG/125MG TAB
   ROLL UP RXNORM: 19711  amoxicillin / clavulanate
   ACTION TIME: Feb 20, 2024@23:25:56    ROUTE: ORAL (2522-1)
185      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 20, 2024@23:27:10    ROUTE: IV PIGGYBACK (47625008)
186      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 1668264     DRUG: ERYTHROMYCIN 50MG/ML INJECTABLE SOLUTION
   ROLL UP RXNORM: 4053  erythromycin
   ACTION TIME: Feb 20, 2024@23:29:36    ROUTE: INTRAMUSCULAR (78421000)
187      262626  DEMO,FSIX TWO           ICU WARD    (1027-2)
   RXNORM: 205964      DRUG: CLINDAMYCIN 600MG/4ML INJ
   ROLL UP RXNORM: 2582  clindamycin
   ACTION TIME: Feb 20, 2024@23:30:11    ROUTE: INTRAMUSCULAR (78421000)
168      565656  DEMO,FSIX FIVE          OBSERVATION (1162-7)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ROLL UP RXNORM: 2191  ceftazidime
   ACTION TIME: Feb 15, 2024@11:45:02    ROUTE: IV PIGGYBACK (47625008)
169      565656  DEMO,FSIX FIVE          OBSERVATION (1162-7)
   RXNORM: 348719      DRUG: TOBRAMYCIN 300MG/5ML INHALATION SOLUTION U/D
   ROLL UP RXNORM: 10627  tobramycin
   ACTION TIME: Feb 15, 2024@13:09:03    ROUTE: INHALATION (2523-9)
…
```

Figure 4-9: Sample Display of a Entries Reviewed and Counted

```
_____

BCMA ANTIMICROBIAL ADMINSTRATION ENTRIES REVIEWED AND NOT COUNTED (SKIPPED)
----------------------------------------------------------------------------
IEN     HRN     PATIENT         WARD                        ADM DATE/TIME
----------------------------------------------------------------------------

172      565656  DEMO,FSIX FIVE          OBSERVATION (1162-7)
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ACTION TIME: Feb 15, 2024@21:06:20    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

176      565656  DEMO,FSIX FIVE          OBSERVATION (1162-7)
   RXNORM: 901610      DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ACTION TIME: Feb 15, 2024@21:12:25    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

177      565656  DEMO,FSIX FIVE          OBSERVATION (1162-7)
   RXNORM: 239191      DRUG: AMOXICILLIN 250MG/5ML SUSP
   ACTION TIME: Feb 15, 2024@21:14:33    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

179      343434  DEMO,FSIX THREE         PEDIATRIC WARD    (1076-9)
   RXNORM: 901610      DRUG: AZTREONAM 75 MG/ML INHALATION SOLUTION
   ACTION TIME: Feb 15, 2024@21:27:46    ROUTE:  ()
   REASON SKIPPED: ALREADY COUNTED THIS DATE/PATIENT/ROLLUP RXNORM/ROUTE

167      565656  DEMO,FSIX FIVE          UNKNOWN/UNABLE TO FI ()
   RXNORM: 352082      DRUG: MOXIFLOXACIN 400MG PREMIX IV
   ACTION TIME: Feb 15, 2024@10:43:34    ROUTE:  ()
   REASON SKIPPED: COULD NOT MAP TO INGREDIENT RXCUI - NOT REPORTABLE

180      464646  DEMO,FSIX FOUR          UNKNOWN/UNABLE TO FI ()
   RXNORM: 313890      DRUG: cefTAZidime 1gm INJ
   ACTION TIME: Feb 15, 2024@21:39:32    ROUTE:  ()
   REASON SKIPPED: CANNOT DETERMINE WARD/LOCATION OR NOT A REPORTABLE
WARD/LOCAT
```

Figure 4-10: Sample Display of Entries Reviewed and Not Counted (Skipped)

4.7   Re-Run Previously Run AM Use Report (AURX)

Use the **AURX** option if a transmission done previously never made it to the export directory and the output files cannot be found.

```
Select Antimicrobial Use Reporting System Option: AURX   Re-Run Previously
Run AM  Use Report

Type a ?? and press enter at the following prompt to view a list of
ORIGINAL RUN DATES.
Or, if you know the original run date you can enter it in the format
MM/DD/YY:  e.g. 2/26/19

Select BLRAU ANTIMICROBIAL USE LOG RUN DATE/TIME: T   MAR 25, 2024
     1   3-25-2024@10:39:29
     2   3-25-2024@10:39:42
CHOOSE 1-2: 2   3-25-2024@10:39:42
```

```
Log entry 49 was for date range FEB 01, 2024 through FEB 29, 2024.
Do you want to regenerate the Antimicrobial Use Report for this run? N//
YES

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.3
DONE -- Press ENTER to Continue:
```

Figure 4-11: Sample Interaction for Re-Run Antimicrobial Use Report

4.8   Date Range Antimicrobial Use Report (AUDR)

The **AUDR** option exports all administered antimicrobial use for a specified month and year range to the export directory, which can be uploaded to NHSN. This option should only be used if NHSN requests that you resubmit data from a certain time period.

```
Select Antimicrobial Use Reporting System Option: AUDR   Date Range
Antimicrobial Use Report

                       DEMO HOSPITAL (INST)

        *****   ANTIMICROBIAL USE REPORT IN A SELECTED MONTH  *****


This program will generate an Antimicrobial Use report for a
month/year that you enter.  A log entry will be created which will log
the data generated.

Please enter the month/year for which Antimicrobial Resistance data
should be generated.

Enter the Month/Year for reporting: 12/2023   (DEC 2023)

Log entry 50 will be created and data generated for
date range DEC 01, 2023 to DEC 31, 2023.

Do you wish to continue? N// YES
Generating New Log entry.

Generating Antimicrobial Use report. ... hold on .
Updating log entry.

RUN TIME (H.M.S): 0.0.4
DONE -- Press ENTER to Continue:
```

Figure 4-12: Sample Interaction for Antimicrobial Use Reporting System Option by Date Range

5.0   Maintenance

The site parameter menu options below should not be used without guidance and support to ensure that uploads to NHSN for AUR are successful. Each option is described below, but it is strongly recommended that they be used without consideration to ensure that new medication routes and wards are mapped to NHSN locations for accurate reporting.

5.1   Edit the Site Parameters

The **SP** option is restricted by the BLRZMENU security key and can be used to display and update their Antimicrobial Use and Resistance Reporting site parameters. This option has four submenu options, as described below.

```
    SPD     Display AU Site Parameters
    WS      Site Parameter and Ward Setup (NHSN Codes)
    MR      Medication Route Setup
    FMR     Find Medication Routes Used
```

Figure 5-1: Menu Options for the Site Parameters Setup Sub Menu

5.1.1   Site Parameter and Ward Setup (NHSN Codes) (WS)

The **WS** option can be used to map wards, ER, and observation units to NHSN location codes and the NHSN facility OID.

```
Select Site Parameter Setup Option: WS   Site Parameter and Ward Setup
(NHSN Codes)

This option is used to map WARDS, the ER and Observation Units to NHSN
Location Codes and enter your site ID.
Each Ward, the ER and Observation units must be assigned an appropriate
NHSN location code.
The site parameters will be pre-populated with all Wards defined in the
RPMS Ward Location file.  If a Ward is not active you can leave the NHSN
code blank.  Only Wards that are assigned an NHSN location code will be
reported.


Do you wish to continue? Y// ES


Enter the ANTIMICROBIAL USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes// <return>   (Yes)

EMERGENCY ROOM NHSN CODE: Emergency Department//
OBSERVATION NHSN CODE: 24-Hour Observation Area//
NHSN ASSIGNED FACILITY OID: 1.111.222.333.580//

The next screen will present all Wards and associated NHSN codes.
```

Figure 5-2: Sample Interaction to Update Site Parameters for Antimicrobial Use and
        Resistance Reporting (AUR)

```
Update Ward NHSN Codes        Mar 25, 2024 10:42:45      Page: 1 of   1
     WARD                                NHSN CODE


1)  ICU WARD                          1027-2   Medical Critical Care
2)  SWING BED
3)  CHH INPATIENT
4)  MEDICAL WARD                      1060-3   Medical Ward
5)  MULTI SERVICE
6)  EAST GENMED
7)  WEST
8)  SOUTH OBGYN
9)  INPATIENT FLOOR
10) NEWBORN ICU
11) GENERAL MEDICINE
12) PEDIATRIC WARD                    1076-9   Pediatric Medical Ward
13) MEDICAL WEST
14) CZ CHH WARD
15) POST SURGERY


        Enter ?? for more actions
S    Select Ward                      Q    Quit
```

Figure 5-3: Listing of Wards Mapped to NHSN Location Codes

5.1.2   Medication Route Setup (MR)

The **MR** option can be used to map the medication routes identified in the **Find
Medication Routes in Use** option to the four values that NHSN wants the site to
report on. The user will be asked to select the site for reporting. In the ListMan, the
user will select a medication route from the list and if it can be categorized as
digestive tract, intramuscular, intravascular, or respiratory tract.

```
Select Site Parameter Setup Option: MR   Medication Route Setup

This option is used to map Medication Routes to NHSN Codes.
The site parameters have been pre-populated with common Medication Routes
used in BCMA, the IV Pharmacy System and Unit Dose for drugs with a
VA Drug Class indicating it is an Antimicrobial drug.

This list must be mapped to the codes below.  You can add additional
Medication Routes to the list.

The 4 codes are:
    - Digestive tract route      2522-1
    - Intramuscular route (IM)   78421000
    - Intravascular route (IV)   47625008
    - Respiratory tract route    2523-9


Do you wish to continue? Y// ES


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
```

```
        ...OK? Yes//    (Yes)

Update Med Route NHSN Codes   Mar 25, 2024, 10:43:03        Page: 1 of
1
    MED ROUTE                              NHSN CODE DESCRIPTION


1)  ORAL                                   2522-1    Digestive tract
2)  J TUBE                                 2522-1    Digestive tract
3)  G TUBE                                 2522-1    Digestive tract
4)  RECTAL                                 2522-1    Digestive tract
5)  INTRAVENOUS                            47625008  Intravascular
6)  INTRAMUSCULAR                          78421000  Intramuscular
7)  TOPICAL
8)  INHALATION                            2523-9    Respiratory tract
9)  IV PIGGYBACK                           47625008  Intravascular
10) IV PUSH                                47625008  Intravascular
11) ORAL PO                                2522-1    Digestive tract




        Enter ?? for more actions
U    Update NHSN Code      AD   Add Medication Route Q    Quit
```

Figure 5-4: Display of Medication Routes with NHSN Codes Assigned

5.1.3   Find Medication Routes Used (FMR)

The **FMR** option can be used to identify the medication routes used at the site. This list can be used with the MR option to map those medication routes that need to be reported to NHSN. Queuing the process is recommended to allow the search to be completed without the user waiting for an undetermined amount of time.

```
This option is used to scan the BCMA, IV Med and Unit Dose medication files
to find all Medication Routes used with Antimicrobial drugs (VA DRUG CLASS
AM*). Those that are found will be put into the Medication Route site
parameter so they can be assigned an NHSN code.


This process could take up to an hour depending on how large those files
are so it is recommended that you queue to run in the background.


BLRAU ANTIMICROB USE SITE: DEMO HOSPITAL (INST)
        ...OK? Yes//    (Yes)

Won't you queue this ? Y// NO
<CR> to continue:
```

Figure 5-5: Sample interaction to find medication routes used at the site to be mapped

5.1.4   F6 ALERTS MAIL GROUP EDIT (MGE)

The **MGE** option can be used to manage the RPMS users who should be alerted to the AUR Reporting transmission generation tasks status. This option allows users to be added or removed from the F6 ALERTS mail group.

```
Select Antimicrobial Use and Resistance Reporting (F6) Option: MGE    F6
ALERTS MAIL GROUP


                           DEMO HOSPITAL (INST)
Date: 03/25/24                    RPMS Lab
Time: 10:44 AM
                                F6 ALERTS
BLREMERA
                         Mail Group Modifications
                              MAIN MENU
--------------------------------------------------------------------------
    1) Add User to Mail Group           2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):
```

Figure 5-6: AUR ALERTS Mail Group Modifications main menu

From the main menu, type **3** to list the users assigned to the mail group.

```
                           DEMO HOSPITAL (INST)
Date: 03/25/24                    RPMS Lab
Time: 10:44 AM
                                F6 ALERTS
BLREMERA
                         Mail Group Modifications
                              MAIN MENU
--------------------------------------------------------------------------
    1) Add User to Mail Group           2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3):3
```

Figure 5-7: AUR ALERTS Mail Group main menu–Select 3 to List Users

```
                           DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory                  Page 1
Time: 10:44 AM                      F6 ALERTS
BLREMERA
                           Mail Group Members

   DUZ       Name
--------------------------------------------------------------------------
   1111      LABORATORY, USER
   2222      PHARMACY, USER
   3333      INFORMATICIST, USER
   4444      INFECTION CONTROL, USER
   5555      AREA SUPPORT, USER


        5 Members
```

Figure 5-8: AUR ALERTS Mail Group Members List

From the main menu, type **2** to delete users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                      RPMS Lab
Time: 10:44 AM

                                 F6 ALERTS
BLREMERA
                            Mail Group Modifications
                                 MAIN MENU
-----------------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 2
```

Figure 5-9: AUR ALERTS Mail Group main menu–Select 2 to Delete User

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                          Delete User from Mail Group
-----------------------------------------------------------------------------

Select one of the users below to delete:

     1 LABORATORY, USER
     2 PHARMACY, USER
     3 INFORMATICIST, USER
     4 INFECTION CONTROL, USER
     5 AREA SUPPORT, USER

Enter Number: 4

     INFECTION CONTROL, USER deleted from F6 ALERTS Mail Group
```

Figure 5-10: AUR ALERTS–Successfully Deleted User from Mail Group

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                    IHS Laboratory
Time: 10:44 AM
                                 F6 ALERTS
BLREMERA
                          Delete User from Mail Group
-----------------------------------------------------------------------------

Select one of the users below to delete:

     1 LABORATORY, USER
     2 PHARMACY, USER
     3 INFORMATICIST, USER
     4 AREA SUPPORT, USER

Enter Number:

    Exit/No Entry.

        Press RETURN Key: ^
```

```
   1 User deleted from F6 ALERTS

   0 Errors when trying to delete users from F6 ALERTS
```

Figure 5-11: AUR ALERTS–Successfully Deleted User from Mail Group

From the main menu, type **1** to add users from the mail group.

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                   RPMS Lab
Time: 10:44 AM
                                  F6 ALERTS
BLREMERA
                           Mail Group Modifications
                                MAIN MENU
-----------------------------------------------------------------------
    1) Add User to Mail Group            2) Delete User From Mail Group
    3) List Users on Mail Group

Select:  (1-3): 1
```

Figure 5-12: AUR ALERTS Mail Group main menu–Select 1 to Add Use

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                   IHS Laboratory
Time: 10:44 AM
                                  F6 ALERTS
BLREMERA
                           Add User to Mail Group
-----------------------------------------------------------------------

Select NEW PERSON: INFECTION CONTROL NEW, USER

    INFECTION CONTROL NEW, USER added to F6 ALERTS
```

Figure 5-13: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

```
                              DEMO HOSPITAL (INST)
Date: 03/25/24                   IHS Laboratory
Time: 10:44 AM
                                  F6 ALERTS
BLREMERA
                           Add User to Mail Group
-----------------------------------------------------------------------

Select NEW PERSON: ^

    Exit/No Entry.

        Press RETURN Key:

    1 Users added to F6 ALERTS
```

```
      0 Errors when trying to add users to F6 ALERTS
```

Figure 5-14: AUR ALERTS Mail Group main menu–Select an RPMS User to Add

Appendix A   Rules of Behavior

The Resource and Patient Management (RPMS) system is an information system operated by the United States Department of Health and Human Services (HHS) and the Indian Health Service (IHS) that is FOR OFFICIAL USE ONLY. The RPMS system is monitored; therefore, no expectation of privacy shall be assumed. Individuals found performing unauthorized activities are subject to disciplinary action, including criminal prosecution.

In accordance with IHS policy, all RPMS users (Contractors and IHS Employees) will be provided a copy of the Rules of Behavior (ROB) and must acknowledge that they have received and read them before being granted access to an RPMS system.

- For a listing of general ROB for all users, see the most recent edition of the IHS General User Security Handbook (SOP 06-11a).

- For a listing of system administrators/managers' rules, see the most recent edition of the IHS Technical and Managerial Handbook (SOP 06-11b).

Both documents are available on this IHS Website:
https://home.ihs.gov/security/index.cfmhttp://security.ihs.gov/.

> **Note**:   Users must be logged on to the IHS D1 Intranet to access these documents.

The ROB listed in the following sections are specific to RPMS.

A.1   All RPMS Users

In addition to these rules, each application may include additional ROBs that may be defined within that application's documentation (e.g., dental, pharmacy).

A.1.1   Access

RPMS users shall:

- Only use data for which you have been granted authorization.

- Only give information to personnel who have access authority and have a need to know.

- Always verify a caller's identification and job purpose with your supervisor or the entity provided as an employer before providing any information system access, sensitive or nonpublic agency information.

- Be aware that personal use of information resources is authorized on a limited basis within the provisions of Indian Health Manual Part 8, "Information Resources Management," Chapter 6, "Limited Personal Use of Information Technology Resources."

RPMS users shall not:

- Retrieve information for someone who does not have the authority to access the information.

- Access, research, or change any user account, file, directory, table, or record not required to perform their official duties.

- Store sensitive files on a PC hard drive, portable devices, or media if access to the PC or files cannot be physically or technically limited.

- Exceed their authorized access limits in RPMS by changing information or searching databases beyond the responsibilities of their jobs or by divulging information to anyone not authorized to know that information.

A.1.2   Information Accessibility

RPMS shall restrict access to information based on the type and identity of the user. However, regardless of the type of user, access shall be restricted to the minimum level necessary to perform the job.

RPMS users shall:

- Access only those documents they created and those other documents to which they have a valid need-to-know and to which they have specifically granted access through an RPMS application based on their menus (job roles), keys, and FileMan access codes. Some users may be afforded additional privileges based on their functions, such as system administrator or application administrator.

- Acquire a written preauthorization in accordance with IHS policies and procedures before interconnection to or transferring data from RPMS.

A.1.3   Accountability

RPMS users shall:

- Behave ethically, technically proficient, informed, and trustworthy.

- Log out of the system whenever they leave the vicinity of their personal computers (PCs).

- Be alert to threats and vulnerabilities in the security of the system.

- Report all security incidents to their local Information System Security Officer (ISSO)

- Differentiate tasks and functions to ensure that no person has sole access to or control of important resources.

- Protect all sensitive data entrusted to them as part of their government employment.

- Abide by all Department and Agency policies, procedures, and guidelines related to ethics, conduct, behavior, and information technology (IT) information processes.

A.1.4   Confidentiality

RPMS users shall:

- Be aware of the sensitivity of electronic and hard copy information and protect it accordingly.

- Store hard copy reports/storage media containing confidential information in a locked room or cabinet.

- Erase sensitive data on storage media before reusing or disposing of the media.

- Protect all RPMS terminals from public viewing at all times.

- Abide by all Health Insurance Portability and Accountability Act (HIPAA) regulations to ensure patient confidentiality.

RPMS users shall not:

- Allow confidential information to remain on the PC screen when someone not authorized to access that data is nearby.

- Store sensitive files on a portable device or media without encrypting.

A.1.5   Integrity

RPMS users shall:

- Protect their systems against viruses and similar malicious programs.

- Observe all software license agreements.

- Follow industry standard procedures for maintaining and managing RPMS hardware, operating system software, application software, and/or database software and database tables.

- Comply with all copyright regulations and license agreements associated with RPMS software.

RPMS users shall not:

- Violate federal copyright laws.

- Install or use unauthorized software within the system libraries or folders.

- Users may not use freeware, shareware, or public domain software on/with the system without their manager's written permission and without first scanning it for viruses.

A.1.6   System Logon

RPMS users shall:

- Have a unique user identification/account name and password.

- Be granted access based on authenticating the account name and password entered.

- Be locked out of an account after five successive failed login attempts within a specified time period (e.g., one hour).

A.1.7   Passwords

RPMS users shall:

- Change passwords a minimum of every 90 days.

- Create passwords with a minimum of eight characters.

- If the system allows, use a combination of alpha-numeric characters for passwords, with at least one uppercase letter, one lowercase letter, and one number. If possible, it is recommended that a special character be used in the password.

- Change vendor-supplied passwords immediately.

- Protect passwords by committing them to memory or storing them safely (do not store passwords in login scripts or batch files).

- Change passwords immediately if the password has been seen, guessed, or otherwise compromised, and report the compromise or suspected compromise to their ISSO.

- Keep user identifications (IDs) and passwords confidential.

RPMS users shall not:

- Use common words found in any dictionary as a password.

- Use obvious readable passwords or passwords that incorporate personal data elements (e.g., user's name, date of birth, address, telephone number, or social security number; names of children or spouses; favorite band, sports team, or automobile; or other personal attributes).

- Share passwords/IDs with anyone or accept using another's password/ID, even if offered.

- Reuse passwords. A new password must contain no more than five characters per eight characters from the previous password.

- Post passwords.

- Keep a password list in an obvious place, such as under keyboards, in desk drawers, or in any other location where it might be disclosed.

- Give a password out over the phone.

A.1.8 Backups

RPMS users shall:

- Plan for contingencies such as physical disasters, loss of processing, and disclosure of information by preparing alternate work strategies and system recovery mechanisms.

- Make backups of systems and files on a regular, defined basis.

- If possible, store backups away from the system in a secure environment.

A.1.9 Reporting

RPMS users shall:

- Contact and inform their ISSO that they have identified an IT security incident and begin the reporting process by providing an IT Incident Reporting Form regarding this incident.

- Report security incidents as detailed in the IHS Incident Handling Guide (SOP 05-03).

RPMS users shall not:

- Assume that someone else has already reported an incident. The risk of an incident going unreported far outweighs the possibility that an incident gets reported more than once.

A.2 Session Timeouts

The RPMS system implements system-based timeouts, which allow users to exit a prompt after 5 minutes of inactivity.

RPMS users shall:

- Utilize a screen saver with password protection set to suspend operations at no greater than 10 minutes of inactivity. This will prevent inappropriate access and viewing of any material displayed on the screen after some period of inactivity.

A.2.1   Hardware

RPMS users shall:

- Avoid placing system equipment near obvious environmental hazards (e.g., water pipes).

- Keep an inventory of all system equipment.

- Keep records of maintenance/repairs performed on system equipment.

RPMS users shall not:

- Eat or drink near system equipment.

A.2.2   Awareness

RPMS users shall:

- Participate in organization-wide security training as required.

- Read and adhere to security information pertaining to system hardware and software.

- Take the annual information security awareness.

- Read all applicable RPMS manuals for the applications used in their jobs.

A.2.3   Remote Access

Each subscriber organization establishes its own policies for determining which employees may work at home or in other remote workplace locations. Any remote work arrangement should include policies that

- Are in writing.

- Provide remote user authentication through ID and password or other acceptable technical means.

- Outline the work requirements, security safeguards, and procedures the employee must follow.

- Ensure adequate storage of files, removal, and nonrecovery of temporary files created in processing sensitive data, virus protection, and intrusion detection, and provide physical security for government equipment and sensitive data.

- Establish mechanisms to back up data created and/or stored at alternate work locations.

Remote RPMS users shall:

- Remotely access RPMS through a virtual private network (VPN) whenever possible. Direct dial-in access must be justified and approved in writing, and its use secured in accordance with industry best practices or government procedures.

Remote RPMS users shall not:

- Disable any encryption established for network, internet, and Web browser communications.

A.2.4   RPMS Developers

RPMS developers shall:

- When writing or revising code, always remember to protect the confidentiality, availability, and integrity of RPMS.

- Always follow the IHS RPMS Programming Standards and Conventions (SAC) when developing RPMS.

- Only access information or code within the namespaces they have been assigned as part of their duties.

- Remember that all RPMS code is the property of the U.S. Government, not the developer.

- Not access live production systems without obtaining appropriate written access and shall only retain that access for the shortest period possible to accomplish the task that requires the access.

- Observe the separation of duties, policies, and procedures to the fullest extent possible.

- Document or comment on all changes to any RPMS software when the change or update is made. Documentation shall include the programmer's initials, change date, and reason for the change.

- Checksums or other integrity mechanisms should be used when releasing their certified applications to ensure the integrity of the routines within their RPMS applications.

- Follow industry best standards for systems assigned to develop, maintain, and abide by all Department and Agency policies and procedures.

- Document and implement security processes whenever available.

RPMS developers shall not:

- Write any code that adversely impacts RPMS, such as backdoor access, "Easter eggs," time bombs, or any other malicious code, or make inappropriate comments within the code, manuals, or help frames.

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Release any sensitive agency or patient information.

A.2.5   Privileged Users

Personnel with significant access to processes and data in RPMS, such as system security administrators, systems administrators, and database administrators, have added responsibilities to ensure its secure operation.

Privileged RPMS users shall:

- Verify that any user requesting access to any RPMS system has completed the appropriate access request forms.

- Ensure that government and contractor personnel understand and comply with license requirements. End users, supervisors, and functional managers are ultimately responsible for this compliance.

- Advise the system owner on matters concerning information technology security.

- Assist the system owner in developing security plans, risk assessments, and supporting documentation for the certification and accreditation process.

- Ensure that any changes to RPMS that affect contingency and disaster recovery plans are conveyed to the person responsible for maintaining continuity of operations plans.

- Ensure that adequate physical and administrative safeguards are operational within their areas of responsibility and that access to information and data is restricted to authorized personnel on a need-to-know basis.

- Verify that users have received appropriate security training before allowing access to RPMS.

- Implement applicable security access procedures and mechanisms, incorporate appropriate levels of system auditing, and review audit logs.

- Document and investigate known or suspected security incidents or violations and report them to the ISSO, Chief Information Security Officer (CISO), and systems owner.

- Protect the supervisor, superuser, or system administrator passwords.

- Avoid instances where the same individual is responsible for several functions (e.g., transaction entry and transaction approval).

- Watch for unscheduled, unusual, and unauthorized programs.

- Help train system users on the appropriate use and security of the system.

- Establish protective controls to ensure the system's accountability, integrity, confidentiality, and availability.

- Replace passwords when a compromise is suspected. Delete user accounts as quickly as possible after the user is no longer authorized to use the system. Passwords forgotten by their owner should be replaced, not reissued.

- Terminate user accounts when a user transfers or has been terminated. If the user has the authority to grant authorizations to others, review these other authorizations. Retrieve any devices used to gain access to the system or equipment. Cancel login IDs and passwords and delete or reassign related active and backup files.

- If the system is left on and unattended, use a suspended program to prevent an unauthorized user from logging on with the current user's ID.

- Verify the user's identity when resetting passwords. This can be done in person or by having the user answer a question that can be compared to one in the administrator's database.

- Shall follow industry best standards for systems they are assigned to and abide by all Department and Agency policies and procedures.

Privileged RPMS users shall not:

- Access any files, records, systems, etc., that are not explicitly needed to perform their duties

- Grant any user or system administrator access to RPMS unless proper documentation is provided.

- Release any sensitive agency or patient information.

Appendix B   List of Eligible Organisms for the NHSN AR Option

The following lists the organism names and their assigned SNOMED codes.

Table B-1: Organism names and assigned SNOMED Codes

Organism Name	SNOMED CODE
Genus Acinetobacter (organism)	7757008
Acinetobacter baumannii (organism)	91288006
Acinetobacter baumannii group (organism)	1003795002
Acinetobacter baylyi (organism)	423974000
Acinetobacter beijerinckii (organism)	771547006
Acinetobacter bereziniae (organism)	700398000
Acinetobacter bouvetii (organism)	424539001
Acinetobacter calcoaceticus (organism)	82550008
Acinetobacter courvalinii (organism)	890447005
Acinetobacter dispersus (organism)	788668000
Acinetobacter genospecies (organism)	131203002
Acinetobacter gerneri (organism)	424700008
Acinetobacter grimontii (organism)	423329001
Acinetobacter guillouiae (organism)	700397005
Acinetobacter gyllenbergii (organism)	450384008
Acinetobacter haemolyticus (organism)	77045006
Acinetobacter indicus (organism)	708566008
Acinetobacter johnsonii (organism)	252000
Acinetobacter junii (organism)	13879009
Acinetobacter lactucae (organism)	787183008
Acinetobacter lwoffii (organism)	83088009
Acinetobacter modestus (organism)	890448000
Acinetobacter nectaris (organism)	723323008

Organism Name	SNOMED CODE
Acinetobacter nosocomialis (organism)	708859003
Acinetobacter parvus (organism)	423516002
Acinetobacter pittii (organism)	698244000
Acinetobacter proteolyticus (organism)	797934007
Acinetobacter radioresistens (organism)	113381003
Acinetobacter rudis (organism)	115391000146107
Acinetobacter schindleri (organism)	423732001
Acinetobacter seifertii (organism)	787184002
Acinetobacter soli (organism)	700396001
Acinetobacter tandoii (organism)	424021002
Acinetobacter tjernbergiae (organism)	425109008
Acinetobacter towneri (organism)	424930007
Acinetobacter ursingii (organism)	424791004
Acinetobacter variabilis (organism)	113384006
Acinetobacter venetianus (organism)	28931000087103
Genus Acinetobacter (organism)	7757008
Acinetobacter baumannii (organism)	91288006
Candida albicans (organism)	53326005
Candida auris (organism)	3491000146109
Candida glabrata (organism)	444877006
Candida parapsilosis (organism)	61302002
Candida tropicalis (organism)	47885008
Citrobacter amalonaticus (organism)	55744003
Citrobacter braakii (organism)	114262000
Citrobacter freundii (organism)	6265002
Citrobacter freundii complex (organism)	782522004
Citrobacter koseri (organism)	114264004
Citrobacter youngae (organism)	114443001

Organism Name	SNOMED CODE
Genus Enterobacter (organism)	58683007
Enterobacter asburiae (organism)	33115003
Enterobacter bugandensis (organism)	113611000146106
Enterobacter cancerogenus (organism)	114451003
Enterobacter cloacae (organism)	14385002
Enterobacter cloacae subspecies cloacae (organism)	721950003
Enterobacter cloacae subspecies dissolvens (organism)	56813009
Enterobacter cloacae complex (organism)	414102007
Enterobacter hormaechei (organism)	114454006
Enterobacter kobei (organism)	114456008
Enterobacter ludwigii (organism)	432763001
Enterobacter mori (organism)	738504009
Escherichia coli (organism)	112283007
Klebsiella aerogenes (organism)	62592009
Klebsiella oxytoca (organism)	40886007
Klebsiella pneumoniae (organism)	56415008
Morganella morganii	243301005
Proteus mirabilis (organism)	73457008
Proteus penneri (organism)	45298005
Proteus vulgaris (organism)	45834001
Serratia marcescens (organism)	33522002
Genus Enterococcus (organism)	2785000
Enterococcus aquimarinus (organism)	7871000146102
Enterococcus asini (organism)	425342004
Enterococcus avium (organism)	87875008
Enterococcus caccae (organism)	7881000146100
Enterococcus canintestini (organism)	7891000146103

Organism Name	SNOMED CODE
Enterococcus canis (organism)	424191009
Enterococcus casseliflavus (organism)	30949009
Enterococcus cecorum (organism)	113722005
Enterococcus columbae (organism)	113723000
Enterococcus devriesei (organism)	7901000146102
Enterococcus dispar (organism)	113724006
Enterococcus durans (organism)	46464008
Enterococcus faecalis (organism)	78065002
Enterococcus faecium (organism)	90272000
Enterococcus gallinarum (organism)	53233007
Enterococcus gilvus (organism)	416934000
Enterococcus haemoperoxidus (organism)	423614008
Enterococcus hermanniensis (organism)	422482003
Enterococcus hirae (organism)	73852008
Enterococcus italicus (organism)	422707007
Enterococcus lactis (organism)	708452001
Enterococcus malodoratus (organism)	10262005
Enterococcus moraviensis (organism)	424862009
Enterococcus mundtii (organism)	38004008
Enterococcus pallens (organism)	417099004
Enterococcus phoeniculicola (organism)	432791009
Enterococcus pseudoavium (organism)	103436009
Enterococcus raffinosus (organism)	103437000
Enterococcus ratti (organism)	431989005
Enterococcus saccharolyticus (organism)	103438005
Enterococcus silesiacus (organism)	7911000146100
Enterococcus sulfureus (organism)	113726008
Enterococcus termitis (organism)	7921000146105

Organism Name	SNOMED CODE
Enterococcus thailandicus (organism)	449322006
Enterococcus villorum (organism)	2785000
Pseudomonas aeruginosa (organism)	52499004
Staphylococcus aureus (organism)	3092008
Methicillin resistant Staphylococcus aureus (organism)	115329001
Stenotrophomonas maltophilia (organism	113697002
Streptococcus agalactiae (organism)	43492007
Streptococcus pneumoniae (organism)	9861002

Appendix C   List of Antimicrobial Agents for the NHSN AR Option

The following is a listing of the Antibiotic names and their assigned LOINC CODES.

Table C-1: Antibiotic names and assigned LOINC CODES

Antibiotic Name	Long code
AMIKACIN	18860-7
AMOXICILLIN	18861-5
AMOXICILLIN-CLAVULANATE	18862-3
AMPICILLIN	18864-9
AMPICILLIN-SULBACTAM	18865-6
ANIDULAFUNGIN	57095-2
AZITHROMYCIN	18866-4
AZTREONAM	18868-0
CASPOFUNGIN	32378-2
CEFAZOLIN	18878-9
CEFEPIME	18879-7
CEFIDEROCOL	99280-0
CEFOTAXIME	18886-2
CEFOXITIN	18888-8
CEFTAROLINE	73605-8
CEFTAZIDIME-AVIBACTAM	73603-3
CEFTAZIDIME	18893-8
CEFTOLOZANE-TAZOBACTAM	73602-5
CEFTRIAXONE	18895-3
CEFUROXIME	51724-3
CHLORAMPHENICOL	18903-5
CIPROFLOXACIN	18906-8
CLARITHROMYCIN	18907-6

Antibiotic Name	Long code
CLINDAMYCIN	18908-4
COLISTIN	18912-6
CEFOTETAN	18887-0
DALBAVANCIN	41734-5
DAPTOMYCIN	35789-7
DORIPENEM	60535-2
DOXYCYCLINE	18917-5
ERTAPENEM	35802-8
ERYTHROMYCIN	18919-1
FLUCONAZOLE	18924-1
FOSFOMYCIN	25596-8
GEMIFLOXACIN	35816-8
GENTAMICIN	18928-2
GENTAMICIN HIGH POTENCY	18929-0
IMIPENEM	18932-4
IMIPENEM-RELEBACTAM	96372-8
LEFAMULIN	99281-8
LEVOFLOXACIN	20629-2
LINEZOLID	29258-1
MEROPENEM	18943-1
MEROPENEM-VABORBACTAM	88892-5
MICAFUNGIN	65340-2
MINOCYCLINE	18948-0
MOXIFLOXACIN	31039-1
NITROFURANTOIN	18955-5
ORITAVANCIN	41736-0
OXACILLIN	18961-3
POLYMYXIN B	18972-0

Antibiotic Name	Long code
PENICILLIN G	18965-4
PENICILLIN V	18966-2
PIPERACILLIN-TAZOBACTAM	18970-4
POSACONAZOLE	54188-8
QUINUPRISTIN-DALFOPRISTIN	23640-6
RIFAMPIN	18974-6
STREPTOMYCIN HIGH POTENCY	18983-7
STREPTOMYCIN	18982-9
SULFISOXAZOLE	18986-0
TEDIZOLID	73586-0
TELAVANCIN	88886-7
TETRACYCLINE	18993-6
TOBRAMYCIN	18996-9
TRIMETHOPRIM-SULFAMETHOX	18998-5
TRIMETHOPRIM	18997-7
VANCOMYCIN	19000-9
VORICONAZOLE	32379-0
PBP2a:	42721-1
PCR mec-gene	48813-0

Appendix D   Grouping Organisms and Panels by Specimen

The following are groups of organism names and the assigned drug panel with specimen types for the NHSN AR Option.

Table D-1: Organism names and assigned drug panel for NHSN AR Option

Organism	Specimen Type	Antimicrobial Agents
All Acinetobacter species noted in Appendix A	Blood, Urine, Lower Respiratory, CSF	Amikacin Ampicillin-sulbactam Cefepime Cefiderocol Cefotaxime Ceftazidime Ceftriaxone Ciprofloxacin Colistin Doripenem Doxycycline Gentamicin Imipenem Levofloxacin Meropenem Minocycline Piperacillin-tazobactam Polymyxin B Tobramycin Trimethoprim-sulfamethoxazole **Additional Agent for Urine:** Tetracycline
Candida albicans Candida auris Candida glabrata Candida parapsilosis Candida tropicalis	Blood, Urine, CSF **Note:** Lower respiratory will not be collected for Candida spp.	Anidulafungin Caspofungin Fluconazole Micafungin Posaconazole Voriconazole **Additional Agents for Urine:** None

Organism	Specimen Type	Antimicrobial Agents

Citrobacter amalonaticus
Citrobacter braakii
Citrobacter freundii
Citrobacter freundii complex
Citrobacter koseri
Escherichia coli
  Klebsiella aerogenes
  Klebsiella oxytoca
  Klebsiella pneumoniae
Morganella morganii
  Proteus mirabilis
  Proteus penneri
  Proteus vulgaris
Serratia marcescens
	Blood, Urine, Lower Respiratory, CSF	Amikacin
		Amoxicillin-clavulanic acid
		Ampicillin
		Ampicillin-sulbactam
		Aztreonam
		Cefazolin
		Cefepime
		Cefiderocol
		Cefotaxime
		Cefotetan
		Cefoxitin
		Ceftaroline
		Ceftazidime
		Ceftazidime-avibactam
		Ceftolozane-tazobactam
		Ceftriaxone
		Cefuroxime
		Chloramphenicol
		Ciprofloxacin
		Colistin
		Doripenem
		Doxycycline
		Ertapenem
		Gentamicin
		Imipenem
		Imipenem-relebactam with Cilastatin
		Levofloxacin
		Meropenem
		Meropenem-vaborbactam
		Minocycline
		Piperacillin-tazobactam
		Polymyxin B
		Tetracycline
		Trimethoprim-sulfamethoxazole
		Tobramycin
		
		Additional Agents for Urine:
		Fosfomycin
		Nitrofurantoin
		Sulfisoxazole
		Trimethoprim

Organism	Specimen Type	Antimicrobial Agents
All Enterobacter species noted in Appendix A	Blood, Urine, Lower Respiratory, CSF	Amikacin Amoxicillin-clavulanic acid Ampicillin Ampicillin-sulbactam Aztreonam Cefazolin Cefepime Cefiderocol Cefotaxime Cefotetan Cefoxitin Ceftaroline Ceftazidime Ceftazidime-avibactam Ceftolozane-tazobactam Ceftriaxone Cefuroxime Chloramphenicol Ciprofloxacin Colistin Doripenem Doxycycline Ertapenem Gentamicin Imipenem Imipenem-relebactam with Cilastatin Levofloxacin Meropenem Meropenem-vaborbactam Minocycline Piperacillin-tazobactam Polymyxin B Tetracycline Trimethoprim-sulfamethoxazole Tobramycin **Additional Agents for Urine:** Fosfomycin Nitrofurantoin Sulfisoxazole Trimethoprim

Organism	Specimen Type	Antimicrobial Agents
All Enterococcus species noted in Appendix A. Enterococcus faecalis Enterococcus faecium	Blood, Urine, Lower Respiratory, CSF Additional Agents for Urine Note: Exclude Gentamicin and Streptomycin	Ampicillin Dalbavancin Daptomycin Gentamicin Gentamicin high potency Linezolid Oritavancin Penicillin G Penicillin V Quinupristin-dalfopristin Streptomycin Streptomycin high potency Tedizolid Telavancin Vancomycin Note: For Gentamicin and Streptomycin only: Synergistic = Susceptible Non-synergistic = Resistant **Additional Agents for Urine:** Ciprofloxacin Fosfomycin Levofloxacin Nitrofurantoin Tetracycline

Organism	Specimen Type	Antimicrobial Agents
Pseudomonas aeruginosa	Blood, Urine, Lower Respiratory, CSF	Amikacin Aztreonam Cefepime Cefiderocol Ceftazidime Ceftazidime-avibactam Ceftolozane-tazobactam Ciprofloxacin Colistin Doripenem Gentamicin Imipenem Imipenem-relebactam with Cilastatin Levofloxacin Meropenem Piperacillin-tazobactam Polymyxin B Tobramycin **Additional Agents for Urine:** None

Organism	Specimen Type	Antimicrobial Agents
Staphylococcus aureus Methicillin resistant Staphylococcus aureus	Blood, Urine, Lower Respiratory, CSF	Azithromycin Cefoxitin Ceftaroline Chloramphenicol Ciprofloxacin Clarithromycin Clindamycin Dalbavancin Daptomycin Doxycycline Erythromycin Gentamicin Lefamulin Levofloxacin Linezolid Minocycline Moxifloxacin Oritavancin Oxacillin or Nafcillinc Penicillin G Penicillin V Rifampin Tedizolid Telavancin Tetracycline Trimethoprim-sulfamethoxazole Vancomycin **Additional Agents for Urine:** Nitrofurantoin Sulfisoxazole Trimethoprim
Stenotrophomonas maltophilia	Blood, Urine, Lower Respiratory, CSF	Cefiderocol Ceftazidime Chloramphenicol Levofloxacin Minocycline Trimethoprim-sulfamethoxazole **Additional Agents for Urine:** None

Organism	Specimen Type	Antimicrobial Agents
Streptococcus agalactiae	Blood, Urine, Lower Respiratory, CSF	Ampicillin Azithromycin Cefepime Cefotaxime Ceftaroline Ceftriaxone Chloramphenicol Clarithromycin Clindamycin Dalbavancin Daptomycin Erythromycin Levofloxacin Linezolid Oritavancin Penicillin G Penicillin V Tedizolid Telavancin Vancomycin **Additional Agents for Urine:** None

Organism	Specimen Type	Antimicrobial Agents
Streptococcus pneumoniae	Blood, Urine, Lower Respiratory, CSF	Amoxicillin Amoxicillin-clavulanic acid Azithromycin Cefepime Cefotaxime Ceftaroline Ceftriaxone Cefuroxime Chloramphenicol Clarithromycin Clindamycin Doxycycline Ertapenem Erythromycin Gemifloxacin Imipenem Lefamulin Levofloxacin Linezolid Meropenem Moxifloxacin Penicillin G Penicillin V Rifampin Tetracycline Trimethoprim-sulfamethoxazole Vancomycin **Additional Agents for Urine:** None

Glossary

Health Level 7

An international standard messaging system for passing data from one site to another. The Antimicrobial Use and Resistance Reporting System exports data from RPMS to be uploaded to the NHSN platform using HL7 CDA messages.

Acronym List

Acronym	Meaning
AUR	Antimicrobial Use and Reporting
CDA	Clinical Document Architecture
HL7	Health Level Seven
ICD	International Classification of Disease
HHS	Health and Human Services
IHS	Indian Health Service
LOINC	Logical Observation Identifiers Names and Codes
NHSN	National Health Safety Network
RPMS	Resource and Patient Management System
SFTP	Secure File Transfer Protocol
SNOMED	Systemized Nomenclature of Medicine

Contact Information

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