# MRSA and VRE Surveillance

Last Updated 2017

Basics of Infection Prevention
Healthcare-Associated Infections Program
Center for Health Care Quality
California Department of Public Health

# Objectives

- Review methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin resistant enterococcus (VRE) bloodstream infection (BSI) surveillance methods and definitions
- Discuss importance of accurate data collection
- Demonstrate how to report MRSA and VRE BSI data to National Healthcare Safety Network (NHSN)
- Discuss NHSN data analysis and feedback to staff

# MRSA / VRE BSI Surveillance

- Report MRSA and VRE blood specimens only
- Review possible primary sources for BSI (e.g., wound or UTI)
  - For MRSA/VRE BSI in patients with CAUTI:
    - Increase CAUTI adherence monitoring and feedback
  - For MRSA/VRE BSI and wounds:
    - Increase hand hygiene, environmental cleaning, and contact precautions adherence monitoring
- Review antibiotic stewardship program
- If positive MRSA or VRE BSI, **and** a CLABSI, report event in both modules

# MRSA/VRE LabID Surveillance

NHSN algorithm categorizes MRSA/VRE cases according to the admission date and specimen collection dates entered

| | |
|---|---|
| Community-Onset **(CO)** | For Inpatient surveillance, a LabID event collected ≤3 days after admission to the facility (i.e., days 1, 2, 3 or admission) |
| Healthcare Facility-Onset **(HO)** | LabID event collected >3 days after admission to the facility (on or after day 4) |

| | |
|---|---|
| Community-Onset Healthcare Facility - Associated **(CO-HCFA)** | LabID event collected from a patient who was discharged from the facility ≤4 weeks prior to current date of stool specimen collection |

NHSN Patient Safety Manual: Chapter 12

# MRSA/VRE BSI LabID Surveillance Data Collection

- Important data to collect for NHSN SIR calculation
  - Annual Survey data
  - Date of admission
  - Date of specimen collection
  - Location at time of collection
- Do not enter a repeat specimen from the same location if less than 14 days since last positive specimen
- If the patient is transferred to a new location and a new specimen is positive in less than 14 days since the last specimen – REPORT it

# MRSA/VRE BSI LabID Surveillance, continued

- NHSN also tracks if MRSA/VRE case is new or recurrent
  - Considered **recurrent** if >2 weeks and ≤8 weeks after last CDI event reported for that patient
- All MRSA/VRE cases should be identified and entered into NHSN
  - There is no advantage to not identifying and entering all CDI cases into NHSN

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# Interpreting MRSA Surveillance Data

- NHSN calculates an SIR for MRSA, not for VRE
- NHSN analysis applies risk adjustment for:
  - Prevalence of CDI (community onset CDI)
  - Average length of stay*
  - Hospital size *
  - Facility Type*
  - Medical school affiliation*
  - Number of ICU beds*
  - Outpatient community-onset prevalence

* Data in the hospital Annual Survey

NHSN: A Guide to the SIR
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

# NHSN: A Guide to the SIR

- How to interpret SIR
- How SIR is calculated
- Risk adjustment factors for specific HAI


NHSN: A Guide to the SIR
https://www.cdc.gov/nhsn/pdfs/ps-analysis-resources/nhsn-sir-guide.pdf

# LabID Event Protocol MDRO Module

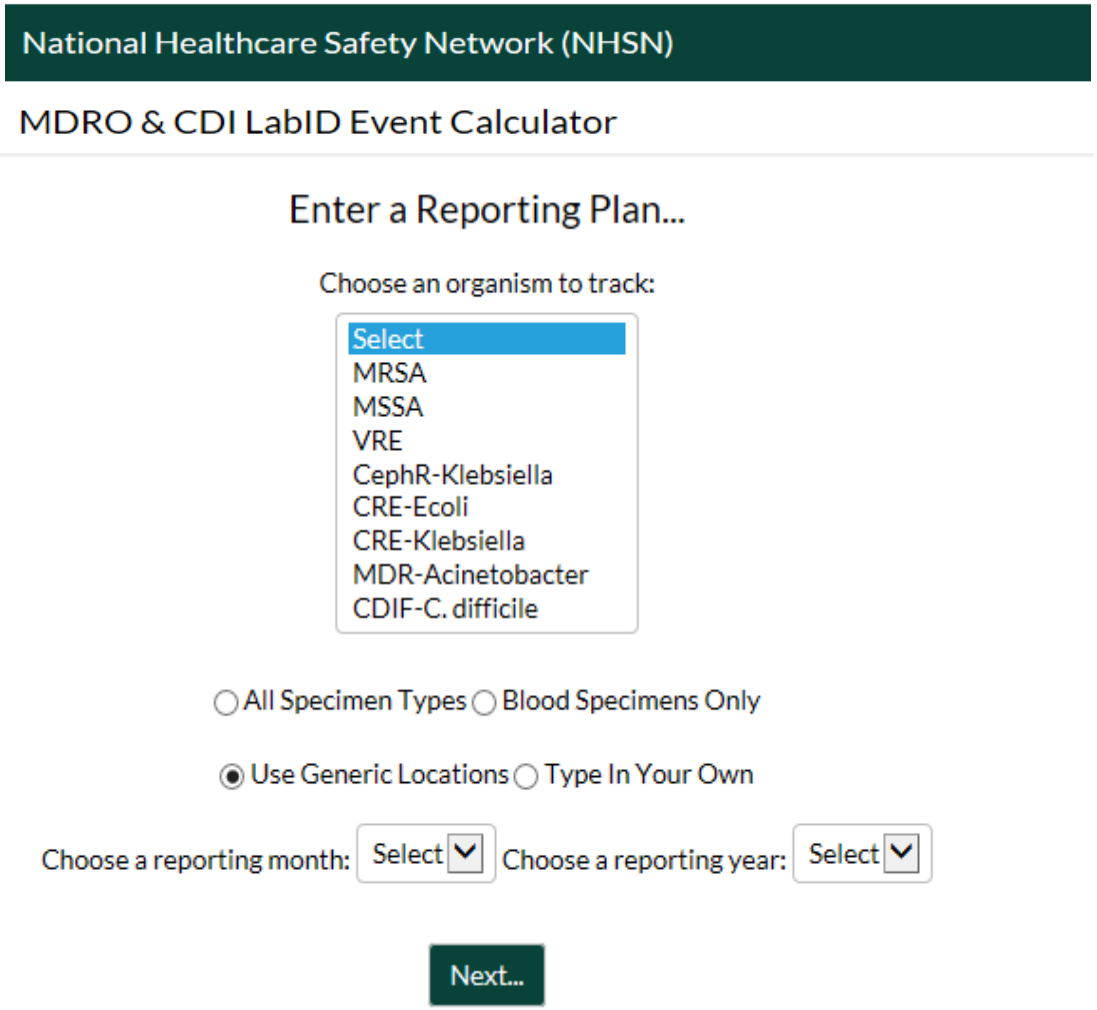
- **All** MRSA and VRE blood specimens are reported for facility including emergency departments (ED) and 24 hour observation units
- Attribute the infection to the location where the specimen was collected - unless admitted from another affiliated outpatient location and admitted on the same calendar day – then attribute infection to the admitting unit.
- For denominator - enter monthly facility wide patient days, admissions, and ED and 24 hour observation encounters (i.e. visits)

NHSN Patient Safety Manual: Chapter 12

# MDRO/CDI LabID Event Calculator

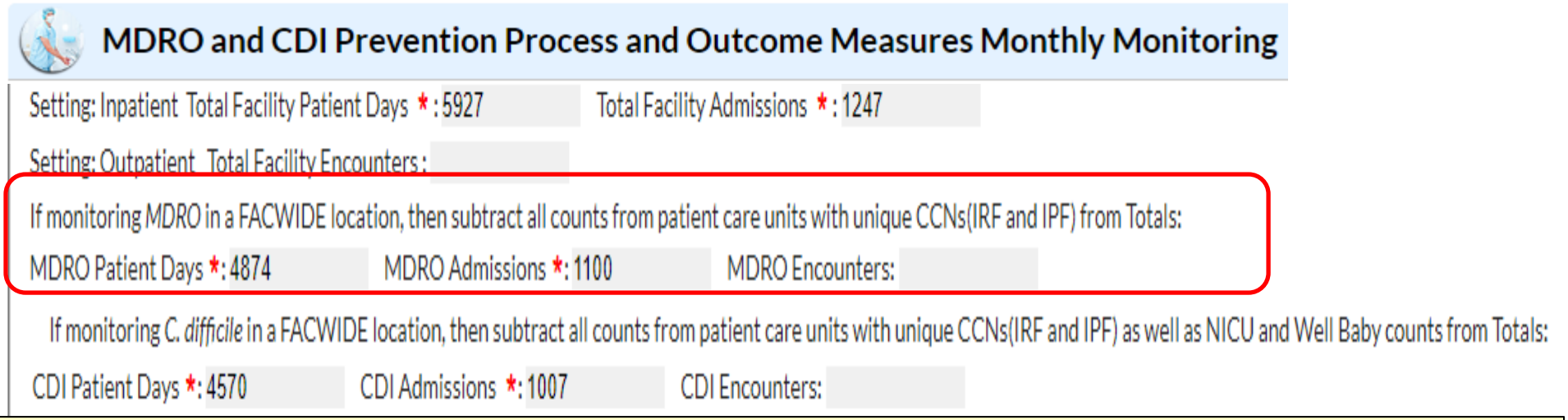
Help users learn how to accurately apply the MDRO & CDI LabID Event algori

- Assist users to make t correct MDRO & CDI LabID Event determinations
- Note: California hosp are required to repor CDI from inpatient, EI and 24 hour observa locations



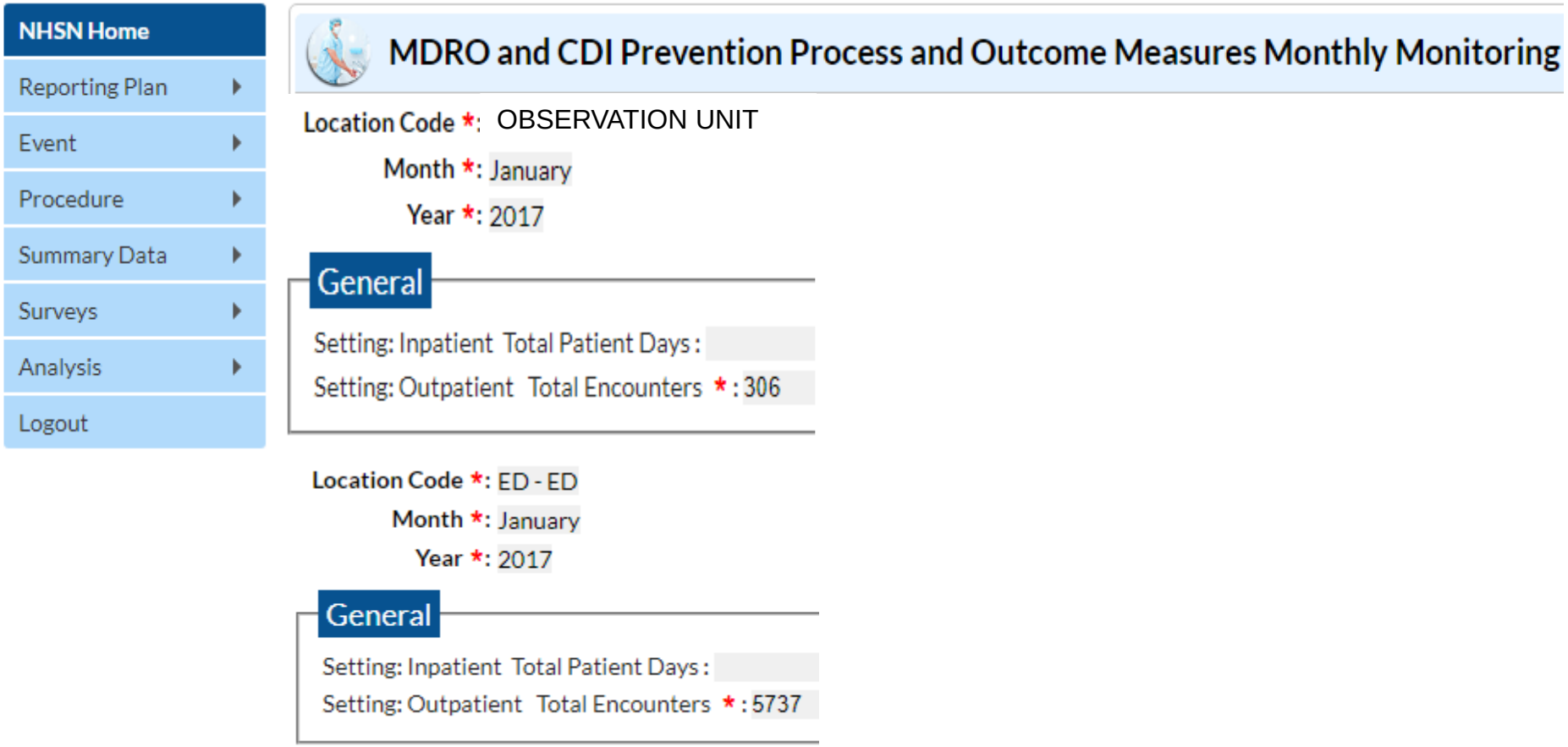

MDRO & CDI LabID Event Calculator
https://nhsn.cdc.gov/nhsntraining/labid-calculator/mdrolabidcalc.html

# Add Monthly MDRO Summary Data to NHSN




- **Total facility patient days**
- **Total facility admissions**
- **Total facility MDRO patient days** (Facility Pt Days minus units with unique CCN such as IRF and IPF)
- **Total facility MDRO patient admissions** (Facility Pt Days minus units with unique CCN such as IRF and IPF)
- **CDI Patient Days** (Facility Pt Days minus NICU/Well baby and units with unique CCN such as IRF and IPF)
- **CDI Patient Admissions**(Facility Pt Days minus NICU/Well baby and units with unique CCN such as IRF and IPF)
- ED and 24 hour Observation encounters entered separately

# Add Monthly MDRO Summary Data to NHSN -2




- Enter ED and 24 hour Observation encounters separately

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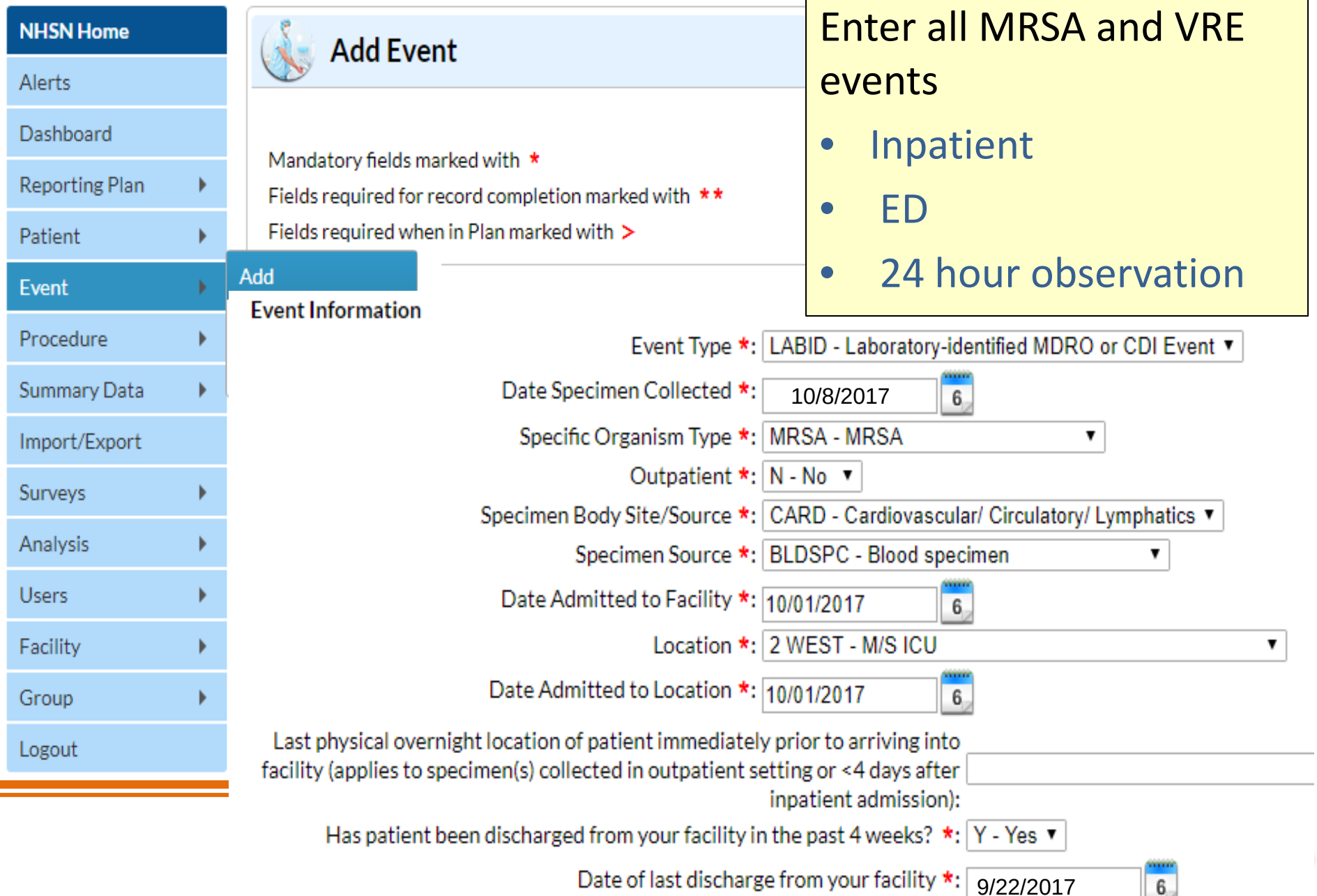
# Add MRSA or VRE Event to NHSN

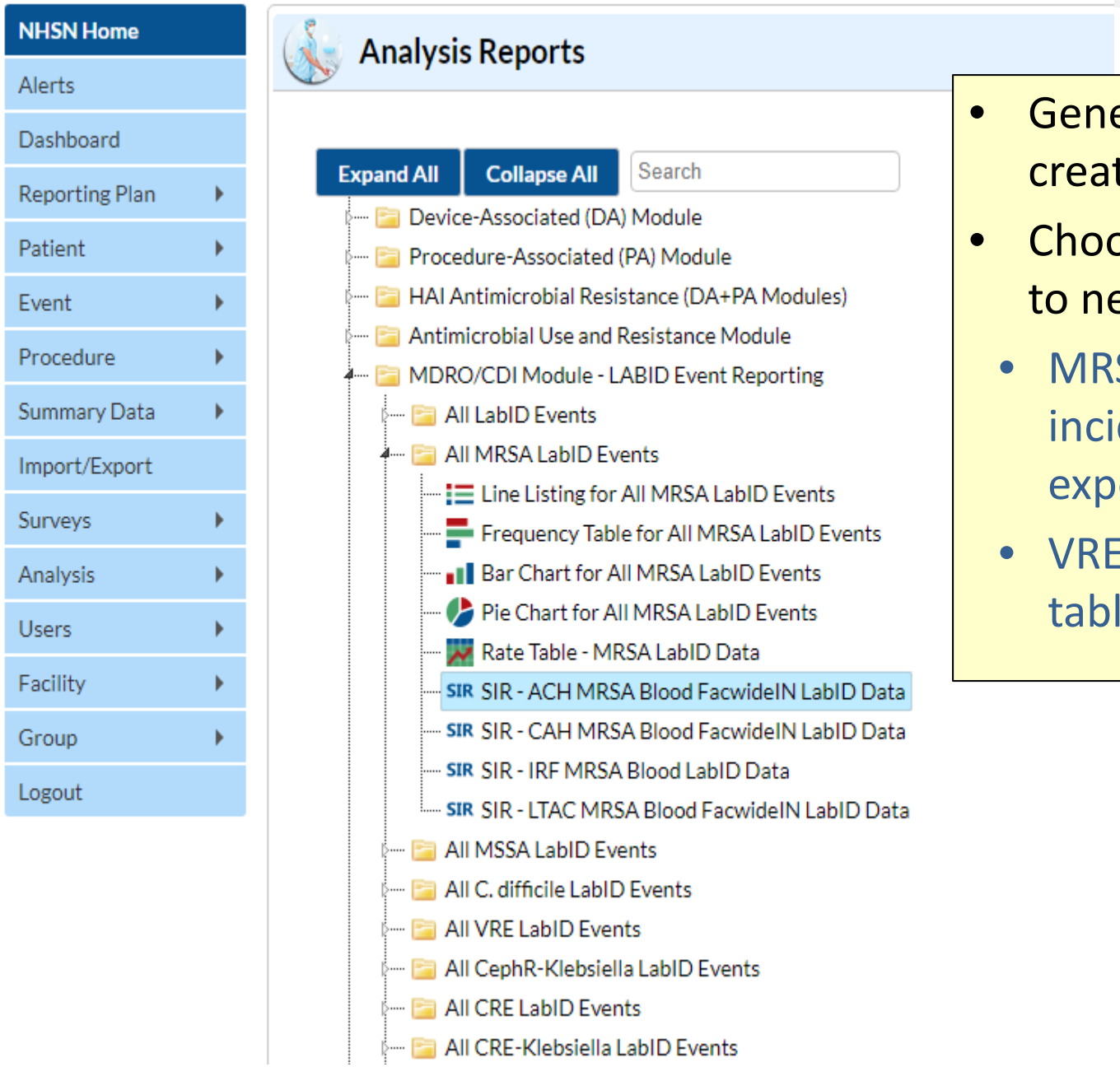





Enter all MRSA and VRE events

- Inpatient
- ED
- 24 hour observation

# NHSN MRSA and VRE Analysis Reports




- Generate data set prior to creating a report
- Choose report according to need
  - MRSA SIR report- Your incidence compared to expected incidence
  - VRE: Line list or rate tables and charts

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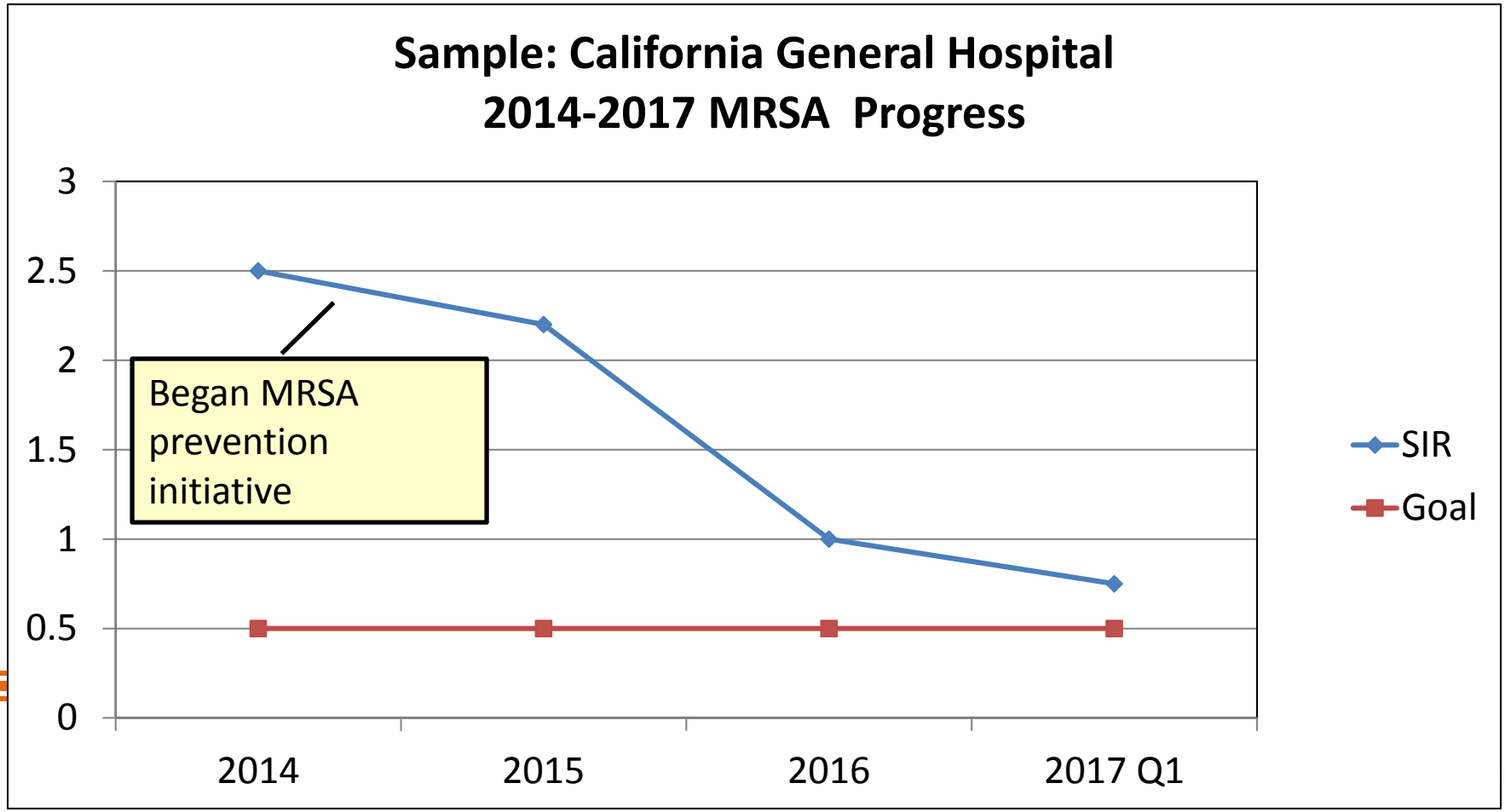
# Track Progress Over Time

- Feedback results to staff
- Celebrate successes!



# MRSA and VRE Surveillance Summary

- Report all MRSA and VRE blood specimens to NHSN
- Accurate denominator summary data are necessary for NHSN to calculate SIR and perform analysis
- Perform surveillance and feedback SIR or rates with adherence monitoring results to all units and leadership

# Questions?

For more information,
please contact any
HAI Program Team member

Or email
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