SURVEILLANCE AND INFECTION PREVENTION

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Objectives

- Define surveillance and its role in an infection prevention and control program
- Describe types of surveillance
- Advantages and disadvantages of various surveillance strategies
- How to conduct Infection Prevention Risk Assessment and develop a plan

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Question

What do you think of when you hear the word “surveillance”?

CCD camera

CCD camera

Question

What do you suppose is the definition of surveillance when applied to infection prevention and control?

Surveillance

- Patient Safety
- Healthcare Personnel Safety
- Research & Development
- Biovigilance*

Infection Prevention & Control (IPC) Surveillance

- **Cornerstone of all successful hospital IPC program**
- IPC Surveillance is only the starting point and benchmark for assessing the need for intervention strategies
- **Effective surveillance involves**
  - *Counting cases and then*
  - *Calculating rates of various infections*
  - *Analyzing these data*
  - *Reporting the data in an appropriate way to personnel involved in patient care*
- **Challenges**
  - Changing healthcare delivery system
  - Emerging and reemerging infectious diseases
  - Mandatory reporting requirements

- Lord Kelvin

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Components of a Strong Surveillance Program

Should be based on sound epidemiological and statistical principles

- Designed in accordance with current recommended practices
- Needs to be able to identify risk factors for infection
  - Adverse events
  - Implement risk-reduction measures
  - Monitor the effectiveness of intervention
- Identify
  - Outbreaks
  - Emerging infectious diseases
  - Antibiotic-resistant organisms
  - Bioterrorist events

Components of a Strong Surveillance Program

- Include
  - Infection prevention
  - Performance improvement
  - Patient safety
  - Public health activities
- Mandatory and public reporting requirements
- Surveillance data
  - Reduce the occurrence of infections by using risk factors and implementation of risk-reduction measures and monitoring effectiveness of interventions.

Surveillance Definition and History

- "Ongoing collection and analysis of data and the ongoing dissemination of information to those who need to know so that action can be taken."

Reference: Last JM, ed. *A Dictionary of Epidemiology*. 4th ed. New York: Oxford University Press; 2001:174

- Surveillance is an essential component of an effective infection prevention program.
  - First recommended for hospitals by the American Hospital Association in 1958
- *Staphylococcus aureus*
  - 1960 CDC
  - 1976 Joint Commission

SENIC PROJECT

- 1985 **S**tudy on the **E**fficacy of **N**osocomial **I**nfection **C**ontrol
  - Scientific evidence that hospitals with strong surveillance program has strong prevention and control program
  - **improved patient outcomes by reducing HAI**
- Since 1985 healthcare delivery systems has shifted outside of the acute care hospital
  - Publication of surveillance recommendations for outpatient settings, LTC, rehab, ASC, dialysis, home care, hospice, mental health, and correctional facilities

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Purpose of Surveillance

- Provide data to conduct a facility risk assessment for health care associated infection, diseases, such as legionellosis or tuberculosis
- Ensure compliance with state and federal regulations and state mandatory reporting requirement
- Meet requirements of accrediting agencies, such as the Joint Commission and the Commission on Accreditation of Rehabilitation Facilities (CARF)
- Provide information for the education of healthcare personnel
- Monitor injuries and identify risk factors for injuries in personnel
- Detect an emerging infectious disease or a bioterrorist event

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Types of Surveillance

- **Total or Whole House Surveillance**
  - Monitors **all** HAI in the entire facility
  - Overall facility infection rate should not be calculated

  Rates should be calculated for specific HAIs in a defined population

  - Example:
  - » Central line-associated bloodstream infections
  - » MRSA Blood Stream Infection

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Types of Surveillance

- Overall facility rates are not sensitive enough to identify problem or not adjusted for specific infection or injury risks so they are not appropriate for:
  - *measuring trends over time*
  - *Comparisons between groups*
  - *Benchmarking*
- Although ideal most facilities do not have the technical and personnel resources to do house-wide surveillance
- **Target surveillance is generally conducted**

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Types of Surveillance

- **Target surveillance**
  – 1990 CDC shifted from total house surveillance to target surveillance (NNIS system)
  – Focuses on:
    - particular care units (e.g., ICU, nurseries etc)
    - Infections related to devices (e.g., intravascular and urinary catheters)
    - Invasive procedures (e.g., surgery)
    - Organisms (e.g., resistant organisms such as MRSA, VRE, ESBL, etc)
  – Focuses on high-risk, high-volume procedures and adverse outcomes that are potentially preventable

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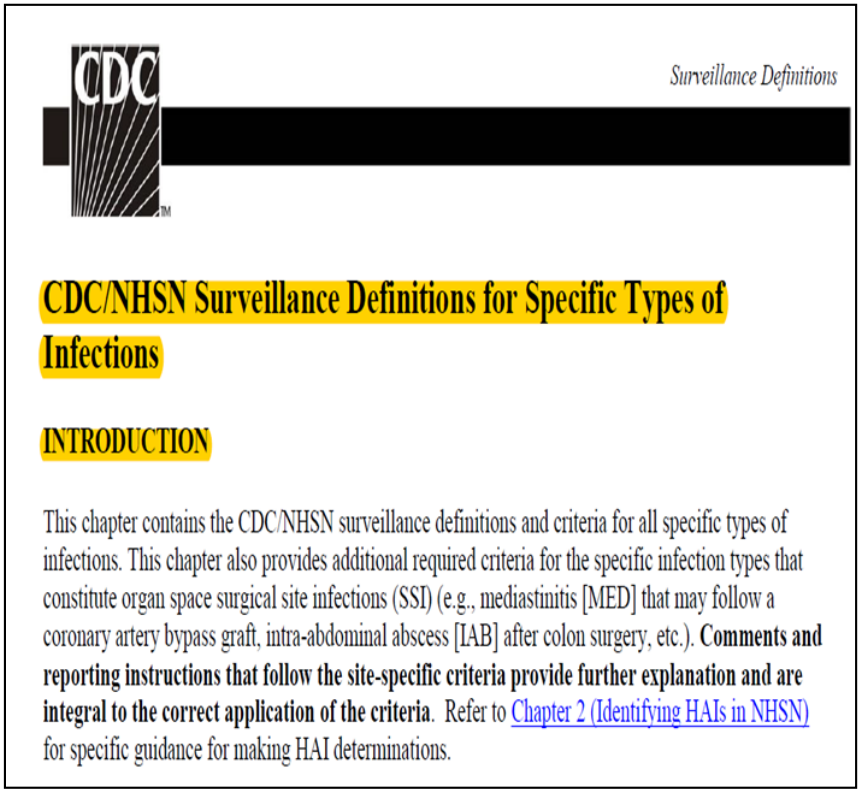
Review Historical data & Volume

	2014	2015	2016
Total Admissions	20,102	26,013	28,768
Length of Stay *(days)*	4.5	4.3	4.3
Average Daily Census (Acute)	249	252	247
Average Daily Census (Adult-Only)	193	202	203
Emergency Visits (including LWBS and Admissions)	93,499	99,834	99,124
ED Admission	8,909	10,431	12,004
Total Patient Days	104,812	107,139	104,528
NICU Days	17,595	15,325	13,029
Adult Critical Care Days	9,521	10,722	11,105
LDRP			
Total Deliveries	7,198	7,665	7,174
C-section	2,536	2,672	2,414
Surgery			
Inpatient	3,300	3,444	3,247
Cardiac Surgery	190	197	192
Out Patient – at Main OR	6,614	4,308	3,238
OP Pavilion	N/A	2,205	3,434
Cath Lab Procedures			
Inpatient	2,491	2,195	1,967
Outpatient	3,791	3,062	2,851
Specialty Labs (GI Lab)	4,576	4,460	4507
Dialysis Treatments	3,270	3,518	3,343
Laboratory Services	389,118,	477,990	501,171
Physical Therapy and Rehab	67,573	69,618	95,000
Ambulatory Visits	472,796	506,091	514,391

Infection Definitions – Acute Care

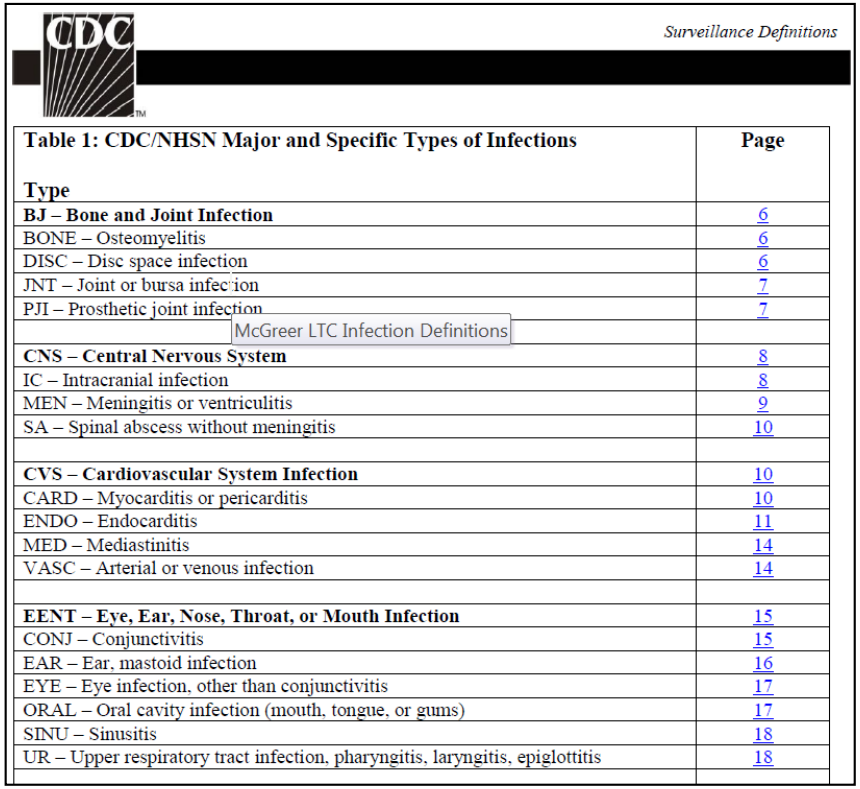


Surveillance Definitions

CDC/NHSN Surveillance Definitions for Specific Types of Infections

INTRODUCTION

This chapter contains the CDC/NHSN surveillance definitions and criteria for all specific types of infections. This chapter also provides additional required criteria for the specific infection types that constitute organ space surgical site infections (SSI) (e.g., mediastinitis [MED] that may follow a coronary artery bypass graft, intra-abdominal abscess [IAB] after colon surgery, etc.). **Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria**. Refer to Chapter 2 (Identifying HAIs in NHSN) for specific guidance for making HAI determinations.



Surveillance Definitions

Table 1: CDC/NHSN Major and Specific Types of Infections Type	Page
BJ – Bone and Joint Infection	6
BONE – Osteomyelitis	6
DISC – Disc space infection	6
JNT – Joint or bursa infection	7
PJI – Prosthetic joint infection	7
CNS – Central Nervous System	8
IC – Intracranial infection	8
MEN – Meningitis or ventriculitis	9
SA – Spinal abscess without meningitis	10
CVS – Cardiovascular System Infection	10
CARD – Myocarditis or pericarditis	10
ENDO – Endocarditis	11
MED – Mediastinitis	14
VASC – Arterial or venous infection	14
EENT – Eye, Ear, Nose, Throat, or Mouth Infection	15
CONJ – Conjunctivitis	15
EAR – Ear, mastoid infection	16
EYE – Eye infection, other than conjunctivitis	17
ORAL – Oral cavity infection (mouth, tongue, or gums)	17
SINU – Sinusitis	18
UR – Upper respiratory tract infection, pharyngitis, laryngitis, epiglottitis	18

McGreer LTC Infection Definitions

https://www.cdc.gov/nhsn/pdfs/pscmanual/17pscnosinfdef_current.pdf

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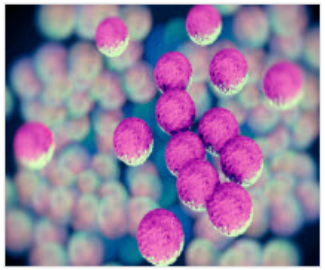
National Healthcare Safety Network (NHSN)

Tracking Infections in Long-term Care Facilities

Eliminating infections, many of which are preventable, is a significant way to improve care and decrease costs. CDC's National Healthcare Safety Network provides long-term care facilities with a customized system to track infections in a streamlined and systematic way. When facilities track infections, they can identify problems and track progress toward stopping infections. On the national level, data entered into NHSN will gauge progress toward national healthcare-associated infection goals.

NHSN's long-term care component is ideal for use by: nursing homes, skilled nursing facilities, chronic care facilities, and assisted living and residential care facilities

C. difficile & MRSA Infections



Surveillance for C. difficile, MRSA, and other Drug-resistant

Urinary Tract Infections (UTI)

Surveillance for Urinary Tract Infections (UTI)

Prevention Process Measures

Surveillance for Prevention Process Measures – Hand Hygiene, Gloves and

Data Collection

- Data to collect depends on the event being monitored
- Data collection for infectious events:
  - Demographics:

    name, sex, age, unique identifier (MD #, acct. # unit, MD, date of admission, date of onset of infection, type of infection, date of discharge, transfer, or death
  - Information needed to determine whether the case definition is met:

    lab results, diagnostic tests, dates performed, sites and dates cultured and organisms isolated, antibiotic susceptibility, clinical signs and symptoms specific for the infection being monitored.
  - Risk factors for the infection being monitored:

    underlying conditions and diseases, surgical procedure and date performed, including surgeon, ASA score, wound classification, use of IV catheters including date of insertion and duration of use etc.

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Data Collection Tool

NHSN National Healthcare Safety Network

Form Approved
OMB No. 0920-0666
Exp. Date: 11/30/2019
www.cdc.gov/nhsn

Denominator for Procedure

Page 1 of 1

*required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-10-PCS or CPT Procedure Code:

Procedure Details

*Outpatient: Yes No

*Wound Class: C CC CO D

ASA Score: 1 2 3 4 5

*Trauma: Yes No *Scope: Yes No

*Height: _____feet _____inches

(choose one) _____meters
*Weight: _____lbs/kg (circle one)

*Duration: _____Hours _____Minutes

*General Anesthesia: Yes No

*Emergency: Yes No

*Diabetes Mellitus: Yes No

*Closure Technique: Primary Other than primary

Surgeon Code: _____

CSEC: *Duration of Labor: _____hours

Circle one: FUSN

*Spinal Level (check one)

- ☐ Atlas-axis
- ☐ Atlas-axis/Cervical
- ☐ Cervical
- ☐ Cervical/Dorsal/Dorsolumbar
- ☐ Dorsal/Dorsolumbar
- ☐ Lumbar/Lumbosacral

*Approach/Technique (check one)

- ☐ Anterior
- ☐ Posterior
- ☐ Anterior and Posterior
- ☐ Transoral

Circle one: HPRO KPRO

ICD-10-PCS Supplemental Procedure Code for HPRO/KPRO: _____

*Check one: ☐ Total ☐ Hemi ☐ Resurfacing (HPRO only)

Numerator/Denominator

- **Numerator:** the upper portion of a fraction used to calculate a rate or ratio. In surveillance, it is usually the number of cases of a disease or event being studied.
- **Denominator:** the lower portion of a fraction used to calculate a rate or ratio.

Example:

- 5 UTIs/135 Catheter Days = rate

  5 is the Numerator 135 is the Denominator

- Denominator can be: census (rarely used), patient or resident days, device days, number of visits, number of surgical site cases (by type of surgery)

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Standardized Infection Ratio (SIR)

- **Provides improved risk adjustment and replace risk-stratified SSI rate**
  - *Risk models* developed specific for each procedure
  - Example: SSI Risk factors for C-Section Proc.
    - *Age, Anesthesia type, ASA score, Duration, BMI, Duration of labor, wound class, # of beds*

What is Standardize Infection Ratio (SIR)

- **Terminology**
  - SIR is not a rate
    - It is a ratio derived from 2 different rates
    - Compares 1 number to another

$$SIR = \frac{\text{Observed SSIs}}{\text{Predicted SSIs (Expected)}}$$

- **Example:**
  - We have 4 SSI after 100 C -Section procedures. Based on our mix of surgical patients undergoing C-Section, national data predicts (expected) we should have 2.5 SSI. SIR is calculated as

$$SIR = 4/2.5 = 1.6$$

What is Standardize Infection Ratio (SIR)

➢ Interpreting SSI SIR

- Value of **1.0 =** number of SSI observed in our hospital is the **same as the predicted (expected)** number of SSI as compared to national referent data

  - Less than 1.0 = fewer SSI than predicted
  - Greater than 1.0 = more SSI than predicted
  - If P-value >0.05 – SIR is not statistically significant
  - Confidence Interval (CL) overlaps 1.0– not statistically significant

SIR is never calculated if the # of expected SSI is less than 1 (you

National Healthcare Safety Network (NHSN)

Surgical Site Infection (SSI)

Standardized Infection Ratio (SIR) by Surgical Procedure

2014 - 2nd Quarter 2015

IMPORTANT: If CONFIDENCE INTERVAL (CI) overlaps 1.0, the SIR is NOT significantly different than expected. CIs are exact, p-values are estimates.

Procedure Code	Procedure Description	Number of Procedures	Number of Infections	Number of Expected Infections	SIR	SIR p-value	SIR 95% Confidence Interval	N/A / Good / Fair / Poor Rating
OB/GYN								
CSEC	Cesarean Section	3205	13	52.168	0.249	0	0.139, 0.415	
HYST	Abd Hysterectomy (includes laparoscope)	381	3	6.576	0.456	0.1474	0.116, 1.242	
OVRY	Ovarian	441	2	2.182	0.917	0.9866	0.154, 3.028	
VHYS	Vaginal Hysterectomy (includes laparoscope)	95	0	0.521				

Written Surveillance Plan

- Describe
  - Type of healthcare setting
  - Services provided and population
  - The surveillance program purpose
  - The indicators (what are you monitoring)
  - The methodology used for case definition
  - Data collection
  - Analysis
  - Types of reports generated and to whom they are provided
  - Process used to evaluate the surveillance program

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Sample IPC Plan

Meriter Unity Point
Infection Prevention and Control Plan
2016

PURPOSE

UnityPoint Health- Meriter is a community based healthcare organization which strives to provide high quality health care services in a safe and cost effective manner. The Infection Prevention Program supports this effort by defining a systemic, coordinated and continuous approach to improving performance by focusing upon surveillance, prevention and control of infections throughout the organization. This Infection Prevention Program is a multidisciplinary collaboration to support the organizations effort to improve patient safety and quality of care.

This program plan applies to the following locations:

1. Hospital
2. Ambulatory Care Sites
3. Administrative Buildings

GOALS

There are three principal goals for the UnityPoint Health-Meriter Infection Prevention Program.

1. Protect the Patient by minimizing the risk of transmission of pathogen's associated with procedures, medical equipment, and medical devices in an effort to reduce morbidity and mortality and shorten periods of illness and hospitalization.
2. Protect healthcare workers, visitors and others in the healthcare environment. This is accomplished by limiting unprotected exposure to pathogens using administrative controls, engineering controls, isolation, hand hygiene, barrier precautions including personal protective equipment (PPE), case investigation, education, immunization, and employee health programs that protect employees from work-related exposures.
3. Accomplish the previous two goals in a cost effective manner by preventing costs associated with the treatment of complications due to healthcare associated infections.

SCOPE AND AUTHORITY

The Infection Prevention Program implements a multidisciplinary collaborative plan designed to prevent and control the spread of infection based upon the clinical needs and demographics of our patients and employees. The Centers for Disease Control and Prevention's (CDC) National Healthcare Safety Network (NHSN) is used to define healthcare associated infections. An Infectious Disease Physician contracted by UnityPoint Health-Meriter provides oversight for the Infection Prevention Program and Employee Health Services Program. The Infection Prevention Program plan is designed to protect patients, healthcare workers and visitors and to ensure the optimal operation of the healthcare system by means of the

Sample IPC Plan

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2017-2018 Infection Prevention Plan

Prepared by:
Department of Infection Prevention & Epidemiology

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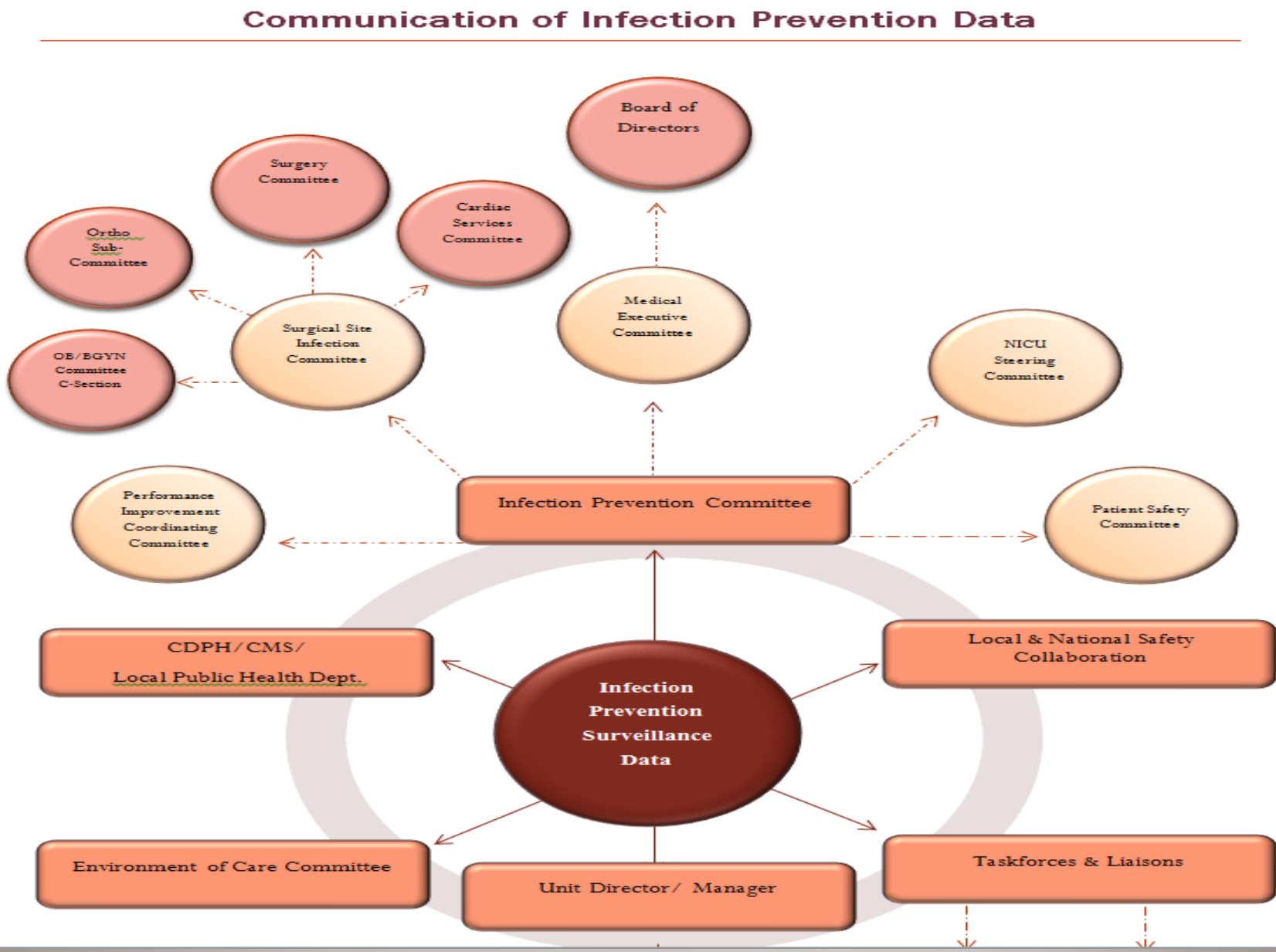
Communication



Communication – Unit Level

39 days
CLABSI free

as of 08/31/17

Longest period CLABSI free: 572 days

Central Line Associated Bloodstream Infection (CLABSI) Rate Report 2017

Report Period	CLABSI	Central Line Days	CLABSI Rate (per 1000 line days)	NHSN CLABSI Average Mean	Patient Days	Device Standardized Utilization Ratio (SUR)	Standardized Infection Ratio (SIR)
2016	1	1026	0.98	0.7	3006	0.67	0.93
Jan-17	0	124	0.00	1.1	270	0.90	
Feb-17	0	67	0.00	1.1	240	0.55	
Mar-17	0	128	0.00	1.1	265	0.95	
Qtr 1	0	319	0.00	1.1	775	0.81	N/A
Apr-17	0	79	0.00	1.1	226	0.69	
May-17	0	88	0.00	1.1	231	0.75	
Jun-17	0	76	0.00	1.1	158	0.95	
Qtr 2	0	243	0.00	1.1	615	0.78	N/A
Jul-17	1	63	15.87	1.1	151	0.82	
Aug-17	0	114	0.00	1.1	255	0.88	
Sep-17							
Qtr 3							
Oct-17							
Nov-17							
Dec-17							
Qtr 4							
2017	1	739	1.35	1.1	1796	0.81	N/A

Come Clean
Clean Hands are Safe Hands

Qtr 1-2 Hospital Wide SIR: 0.71

SIR = Observed HAIs / Expected HAIs

HAI = Hospital Acquired Infecttion

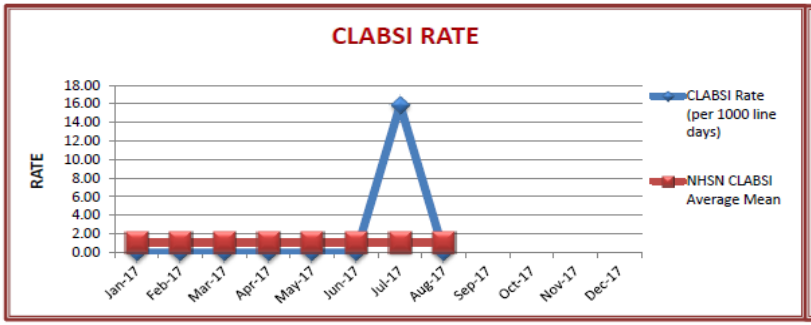
SIR compares the actual # of HAIs reported with the basline, adjusting for risk factors. An SIR greater than 1.0 indicates more HAIs were observed than expected. National baseline is 0.50.

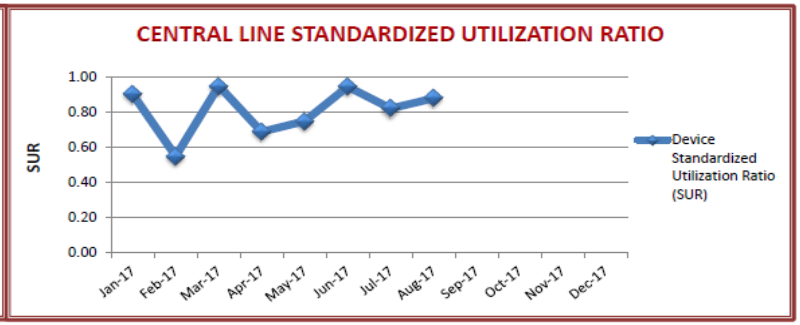
SIR is calcuated quarterly

N/A = SIR not calcuated if "Expected CLABSI's are <1

SUR = Observed Device Days / Expected Device Days

SURs are comparable to "Device Utilization Ratio" because they both measure utilization, but they differ in the way they are calculated. SURs are a risk-adjusted measure and can be compared across locations and facilities because they are risk-adjusted accordinly. An SUR greater than 1.0 indicates utilization was higher than expected.





CLABSI Rate= $\frac{\text{CLABSI Count}}{\text{CL Days}} \times 1000$

Central Line Standardized Utilization Ratio = $\frac{\text{Observed Device Days}}{\text{Expected Device Days}}$

Use alcohol-rub or soap & water before and after EVERY patient contact

Published: 09/22/17

Communication – Unit Level

406 days
CAUTI free
as of 08/31/17

Longest period CAUTI free: 406 days

Does your patient NEED a Foley Catheter?

Catheter-Associated Urinary Tract Infection (CAUTI) Rate Report 2017

Report Period	CAUTI	Catheter Days	CAUTI Rate (per 1000 catheter days)	NHSN CAUTI Average Mean	Patient Days	Device Standardized Utilization Ratio (SUR)	Standardized Infection Ratio (SIR)
2016	3	1888	1.59	1.3	3006	1.00	1.52
Jan-17	0	165	0.00	2.7	270	0.98	
Feb-17	0	135	0.00	2.7	240	0.90	
Mar-17	0	176	0.00	2.7	265	1.06	
Qtr 1	0	476	0.00	2.7	775	0.98	N/A
Apr-17	0	122	0.00	2.7	226	0.86	
May-17	0	115	0.00	2.7	231	0.80	
Jun-17	0	105	0.00	2.7	158	1.06	
Qtr 2	0	342	0.00	2.7	615	0.89	N/A
Jul-17	0	71	0.00	2.7	151	0.75	
Aug-17	0	167	0.00	2.7	255	1.05	
Sep-17							
Qtr 3							
Oct-17							
Nov-17							
Dec-17							
Qtr 4							
2017	0	1056	0.00	2.7	1796	0.94	N/A

Qtr 1-2 Hospital Wide SIR: 1.22

SIR = Observed HAIs / Expected HAIs

HAI = Hospital Acquired Infecttion

SIR compares the actual # of HAIs reported with the basline, adjusting for risk factors. An SIR greater than 1.0 indicates more HAIs were observed than expected. National baseline is 0.50.

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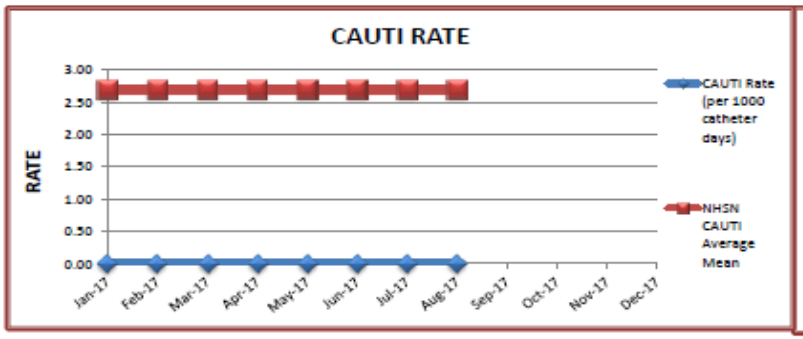

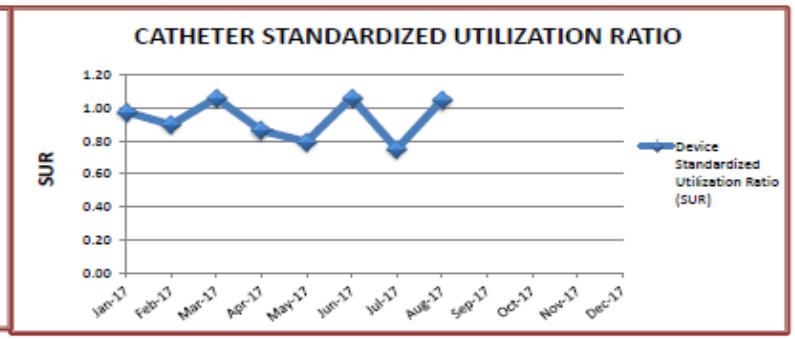

CAUTI Rate= $\frac{\text{CAUTI Count}}{\text{Cath Days}} \times 1000$

Catheter Standardized Utilization Ratio = $\frac{\text{Observed Device Days}}{\text{Expected Device Days}}$

Use alcohol-rub or soap & water before and after EVERY patient contact

Published: 09/22/17

Communication – C Suite

Risk and Cost of Hospital Acquired Infections (HAI)

Measures	CDI	CLABSI	VAE	Surgical Site Infection	CABG Deep SWI
Excess cost/Infection	$11,285	$45,814	$40,144	$20,785	$63,000
Excess Mortality	6.9 – 16.7%	12-25%	10%	2-3%	12-47%
Excess LOS	2.6-4.5 days	7 days	4-11 days	7 days	38-51 days
Estimated Cost for 2014	$925,370 (82 HO)	$687,210 (15)	$401,440 (10)	$1,205,530 (58)	$63,000 (1)
Estimated Cost for 2015	$1,094,645 (97 HO)	$412,326 (9)	$160,576 (4)	$1,143,175 (55)	$126,000 (2)
Estimated Cost for 2016	$1,376,770 (122 HO)	$641,396 (14)	$281,008 (7)	$1,039,250 (54)	$63,000 (1)

VAE data includes (IVAC and PoVAP)

Reference:

1. *The Direct Medical Costs of Healthcare-associated infections in U.S. Hospitals and benefits of Prevention. Author – R Douglas Scott II, Economist, National Center of Preparedness, Detections and Control of Infection Disease Coordinating Center for Infectious Disease Control and Prevention, March 2009.*

Evaluation of Surveillance Program

- Team Approach and Data driven
- The usefulness and ability to meet the organization's objectives
- Revisions should be made as needed
- Compare program structure and activities to current practices and published recommendations for surveillance
- The program resources
  - Adequate number of trained personnel
  - Appropriate computer hardware and software, or lab support
  - Need for data analyst, or administrative support

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IPC Risk Assessment

Risk Score = [(Probability X Severity)+Required] - Preparedness

sample

Infection Prevention Risk Assessment 2017

sample

Event / Issue	PROBABILITY	SEVERITY		SUBTOTAL	REQUIRED	PREPAREDNESS			SUBTOTAL	RISK
	Probability of Infection/Risk	Severity	Life Threatening		Required Program	Preparedness	Response	Asset Availability		Risk
	Likelihood this will occur 0 = N/A 1 = Low 2 = Moderate 3 = High	Morbidity 0 = N/A 1 = Low 2 = Moderate 3 = High	Possibility of Death 0 = N/A 1 = Low 2 = Moderate 3 = High		Internal, CDPH TJC 0 = No 1 = Internal 2 = Safety Collab 3 = External 4 = External+VBP	Preplanning & Prevention 0 = N/A 1 = Not (<20%) 2 = Partially (21%-90%) 3 = Totally (>90%)	Training, policies, procedures 0 = N/A 1 = Not 2 = Partially 3 - Totally	Availability of assists to resolve issue 0 = N/A 1 = Not Done 2 = Moderate 3 = Substantial		Relative Threat* Risk Score Min: -4 Max: 16
Clostridium difficile	3	3	3	6	4	2	1.75	2.25	6	16
Hand Hygiene	3	3	3	6	1	1	1	1	3	16
CLABSI - Adult	3	2	3	5	4	2	1.5	2.5	6	13
Carbapenemase Resistant Enterobacteriaciae (C	3	2	3	5	3	2	2	2	6	12
Antibiotic Stewardship	2.5	3	3	6	4	2.5	2.5	2.5	7.5	11.5
APPY	3	2	2	4	3	1.5	1.5	1.5	4.5	10.5
Use of PPEs	3	2	2	4	1	1	1	1	3	10
Cleaning of Patient Rooms	3	2	3	5	2	2	2	3	7	10
Influenza	3	2	2	4	3	2	2	2	6	9
CHOL	2.5	2	2	4	3	1.5	1.5	1.5	4.5	8.5
COLO	2.5	2	2	4	3	1.5	1.5	1.5	4.5	8.5
HER	2.5	2	2	4	3	1.5	1.5	1.5	4.5	8.5
SB	2.5	2	2	4	3	1.5	1.5	1.5	4.5	8.5
Cath - UTIs	3	1.5	1.5	3	4	2	1.5	2	5.5	7.5
Influenza Immunization	3	2	2	4	3	3	2	2.5	7.5	7.5
Construction & Renovation	3	2	2	4	3	2.75	2.5	2.75	8	7
CLABSI - NICU	2	2	3	5	4	2.5	2.5	2.5	7.5	6.5

IPC Risk Assessment

RISK = PROBABILITY * SEVERITY

		SEVERITY = (MAGNITUDE - MITIGATION)						
EVENT	PROBABILITY	HUMAN IMPACT	PROPERTY IMPACT	BUSINESS IMPACT	PREPARED-NESS	INTERNAL RESPONSE	EXTERNAL RESPONSE	RISK
	Likelihood this will occur	*Possibility of death or injury*	*Physical losses and damages*	*Interruption of services*	*Preplanning & Prevention*	*Time, effectiveness, resources*	*Community Mutual Aid staff and supplies*	*Relative threat**
Issue	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 = N/A 1 = Low 2 = Moderate 3 = High*	*0 - 100%*
Device-related infection								
- Blood Stream Infection								
- Ventilator Associated Infection								
- Urinary Tract Infection								
- Implant from Surgical Procedure								
- Drain or Tube - Temporary								
- Ostomy or Related Opening								
- Peritoneal Dialysis								
- Shunt								
- Other								
Resistant Microbes								
- MRSA								
- VRE								
- ESBL								
- Clostridium difficile								0%
- other								0%
Surgical Site Infection								
- Superficial								0%
- Deep								0%
- Organ space								0%
Extrinsic Infection								
- Patient-to-Patient Transmission								0%
- Worker-to-Patient Transmission								0%
- Visitor-to-Patient Transmission								0%
- Foodborne / Waterborne								0%
- Vectorborne / Vermin								0%
- Airborne Environmental Source								0%
- Waterborne / Aerosol Source								0%
- Surface / Immediate Environment								0%
- Contaminated Instrument/Equip								0%
- Contaminated Med / Product								0%
- Other								0%
Special Populations								
- Neonates								0%
- Elderly								0%

IPC Risk Assessment

INFECTION PREVENTI0N and CONTROL RISK ASSSESSMENT Year _____

Facility_____ **Team**_____

Risk Event	Probability the Risk will Occur				Potential Severity if the Risk Occurs				How Well Prepared is the Organization if the Risk Should Occur?			Risk Priority
	High	Med	Low	None	Life Threatening	Permanent Harm	Temp Harm	None	Poorly	Fairly Well	Well	
Score:	9	5	3	1	9	5	3	1	9	3	1	

Benchmarking and Comparing Data

- Benchmarks are measures against which outcomes and processes can be compared.
- There are currently few external benchmarks that can be used for interfacility comparisons of HAIs and other adverse events.
  - CDPH reports
- The NHSN program for HAI surveillance in acute care hospitals is the most widely used.
- NHSN provides Web-based reporting, feedback of comparative data for performance improvement, and access to preventive tools and best practices.

http://www.cdc.gov/nhsn/

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Summary

- Surveillance practices evolve in response to changes in healthcare delivery.
- The use of surveillance data has shifted from measuring clinical outcomes, such as infections, to guiding performance improvement activities and demonstrating improvements in clinical outcomes and healthcare practices.
- With the increase of antimicrobial resistance and outbreaks caused by emerging and reemerging infectious diseases highlights the need for local, regional, national, and global surveillance systems.
- ICPs responsible for managing surveillance programs must ensure that their programs are based on sound epidemiological and statistical principles and designed and evaluated in accordance with current recommendation and practices and have the resources needed to promote quality healthcare.

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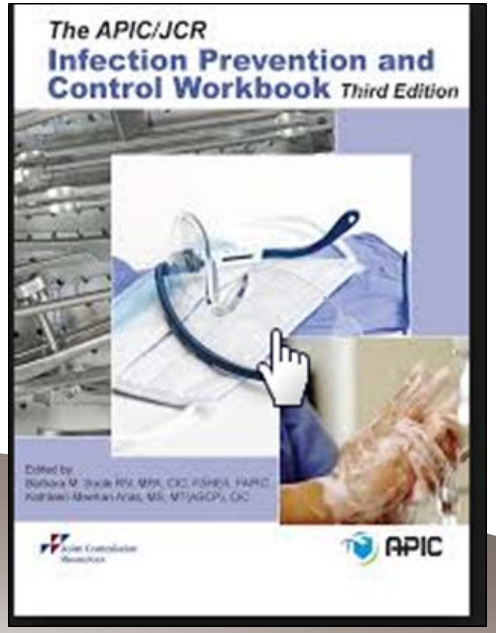
Resources

- APIC - Association for Professional in Infection Control and Epidemiology
  - Local APIC chapter
  - CACC – California Coordinating Council
- SHEA - Society for Healthcare Epidemiology of America
- NHSN – National Healthcare Safety Network
- CDPH – California Department of Public Health
- TJC - The Joint Commission



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