



OVERVIEW

- ❑ **Process of Surveillance**
- ❑ **Surveillance Data Collection**
- ❑ **Surveillance of Methodology**
- ❑ **Surveillance Data Analysis**
- ❑ **Surveillance Report**
- ❑ **Benchmarking**
- ❑ **Integration of Surveillance Data in Quality Improvement Projects**

SURVEILLANCE, WHY?

We can't improve what
We can't measure



burden IMPACT OF SURVEILLANCE

☐ **Help to compare ourselves with time to monitor the service applied**

WHAT IS SURVEILLANCE

Regular ongoing active identification, data collection, analysis, and interpretation of an infection events that essential to the planning, implementation, and evaluation of infection control practice, closely integrated with timely dissemination of these data to those who need to know.

SURVEILLANCE PROCESS

- ❑ Definition of the event (s) / Case definitions
- ❑ Data Collection
- ❑ Data Analysis
- ❑ Interpretation of data
- ❑ Benchmarking
- ❑ Dissemination of Information for action

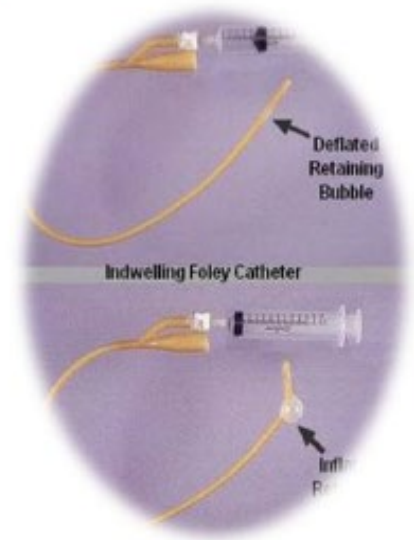
SURVEILLANCE PROCESS



SURVEILLANCE FOR WHAT?



Healthcare Associated Infections (HAIs)



Patient Safety Component

**Procedure
Associated
Module**

**Device-
Associated
Module**

**Medication-
Associated
Module**

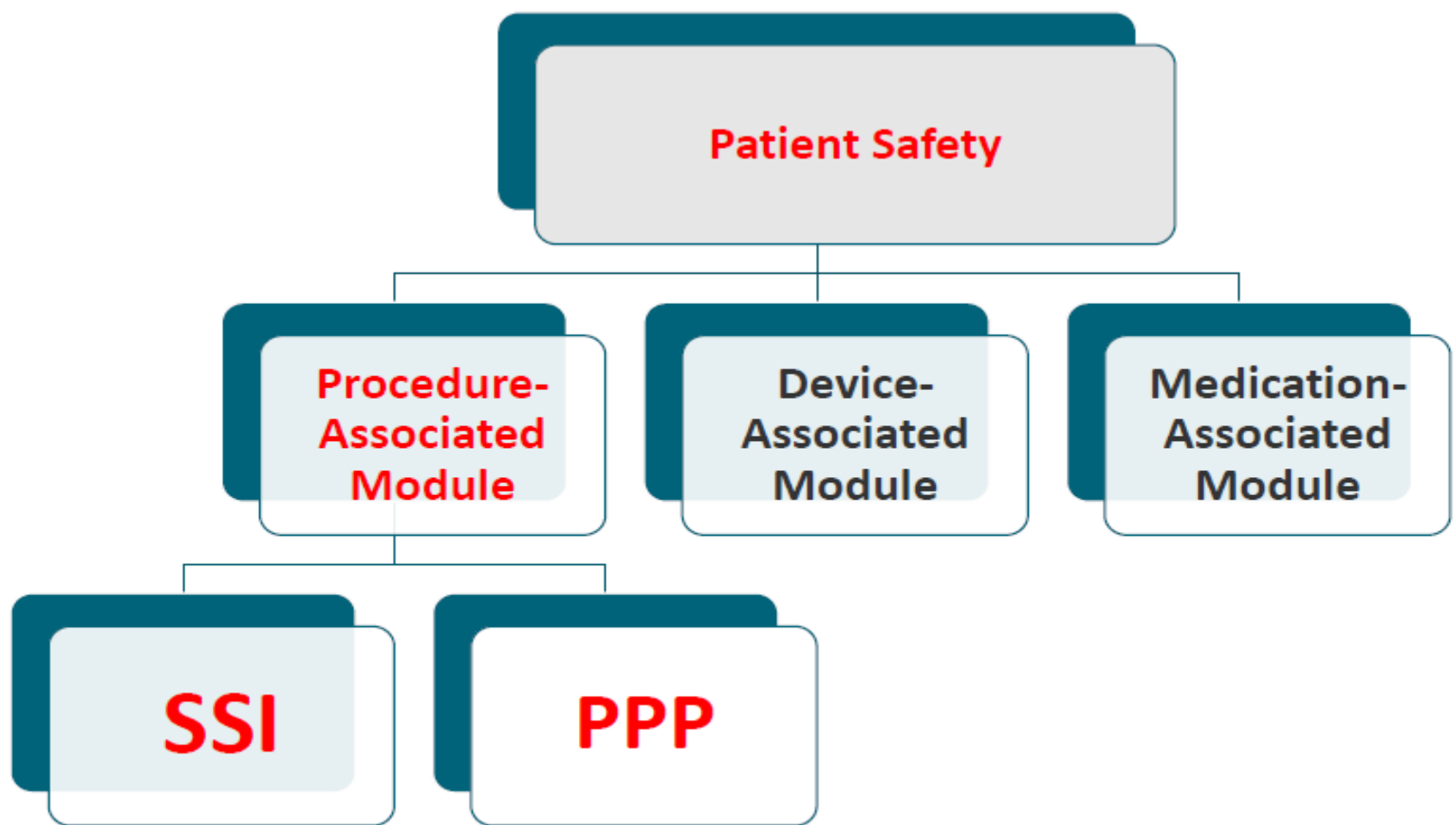
CLABSI

CAUTI

VAP

DI

CDC Criteria for Identification



CDC Criteria for Identification

Ia

Who Performs Surveillances?

Physi

cian




DATA COLLECTION

Patient identifier (name, age, sex, ward)

- Date of admission
- Diagnosis/underlying conditions
- Date & types of invasive procedures
- Date & time of insertion/removal of devices
- Organism isolated (including antibiotics)
- Signs of infection.
- Date of onset of signs of infection
- Site of infection
- Type of infection
- Date and time of outcome

MC-2703 (Rev. 05/04)

Vanderbilt University Medical Center

OR 

Nursing Checklist:
Central Venous Catheter Insertion

NOTE: Please use either black or blue ink to complete this form.

MR # Date

Time start (1st needle stick) Time end (catheter secured)

Type of catheter: ☐ Double lumen ☐ Triple lumen ☐ Introducer ☐ Swan-Ganz ☐ Venous ☐ Other (specify) _____

Insertion site: ☐ Internal Jugular ☐ Subclavian ☐ Femoral ☐ Other (specify) _____

Side: ☐ Right ☐ Left

Indications for use: ☐ Pressure ☐ Hemodynamic monitor ☐ Fluid/blood products ☐ Frequent lab draws

Check if: ☐ Consent obtained ☐ Preinsertion teaching done ☐ Catheter exchange

List all sites where insertion was attempted: ☐ RU ☐ LU ☐ RSC ☐ LSC ☐ RF ☐ LF ☐ Other (specify) _____

The provider inserting this line:

a. Needed off the chart paper before the procedure? ☐ Yes ☐ No ☐ Don't ask

b. Washed hands immediately prior to procedure? ☐ Yes ☐ No ☐ Don't ask

c. Has previously placed at least five (5) central lines? ☐ Yes ☐ No ☐ Don't ask

* If "No", was this procedure supervised by someone with least five (5) central lines experience? ☐ Yes ☐ No ☐ Don't ask

Barrier precautions (check all used): ☐ Sterile gloves ☐ Sterile gown ☐ Mask ☐ Sterile drape ☐ Full body drape

Describe the level of training of the person who actually inserted the line? ☐ Medical student ☐ Intern (PGY-1) ☐ Resident (PGY-2+) ☐ Fellow ☐ Attending ☐ Nurse Practitioner

How many different needle sticks did the patient receive (number of sticks broken)? ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6+ ☐ Unknown

Was the sterile field maintained throughout the entire procedure? ☐ Yes ☐ No

Pre-insertion skin prep (check all used): ☐ Alcohol ☐ Betadine (povidone-iodine) ☐ Chlorhexidine ☐ Other (specify) _____

Describe the circumstances under which this line was placed: ☐ Non-emergent ☐ Emergent (life threatening or code status) ☐ Pre-existing infection

Follow-up CBC: ☐ Ordered ☐ Not ordered (specify reason) _____

CXR findings (check all that apply): ☐ No pneumonia ☐ Pneumothorax (describe action taken) _____ ☐ Catheter in good position ☐ Catheter position adjusted (describe) _____

Type of dressing: ☐ No occlusive ☐ Gauze ☐ Other (specify) _____

Dressing applied by: ☐ Nurse ☐ Physician ☐ Other (specify) _____

Patient tolerated the procedure well? ☐ Yes ☐ No ☐ Comments _____

Complications? ☐ None ☐ Placement unsuccessful ☐ Other (describe) _____

Please file page 2 in patient's chart and return this form to the designated location in the ICU.

Signature _____ Date _____

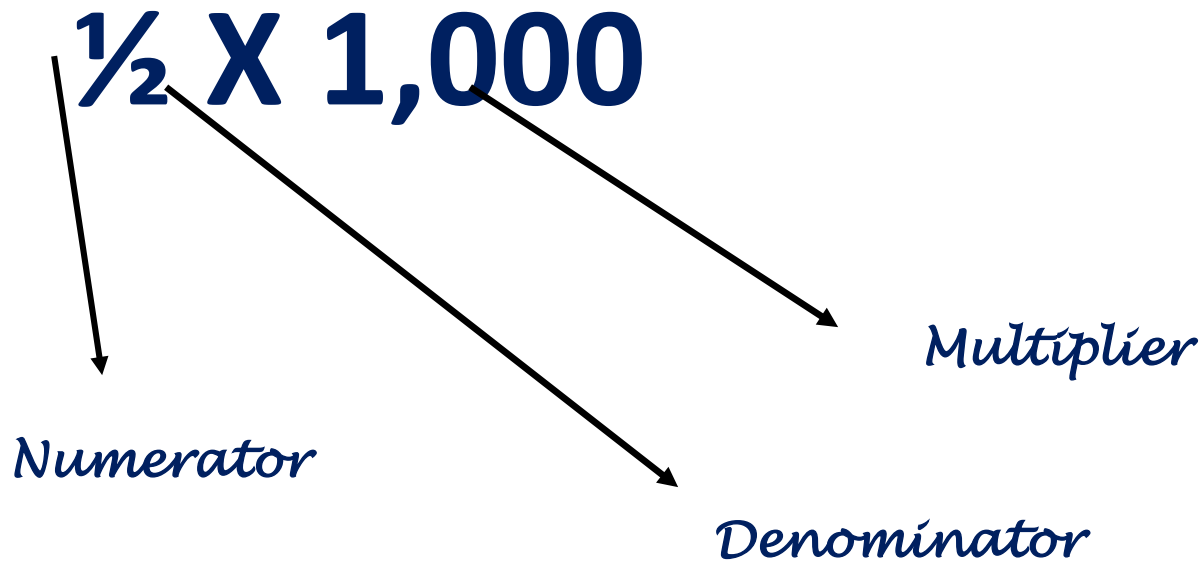
SELECTIVE SURVEILLANCE METHODS

- Surveillance
- Temperature Chart
- Laboratory Based telephone
- Treatment Chart

- Ward Liaison
- Laboratory based liaison
- Post - Discharge

DATA ANALYSIS

Numerator, Denominator, and Multiplier



CALCULATING RATES

CLABSI Infection Rate = $\frac{\text{No. of HAIs associated with Central Line}}{\text{No. of Central Line days}} \times 1000$

Utilization Ratio of Central Line = $\frac{\text{No. of days of the Central Line used}}{\text{Total no. of patient days}}$

CAUTI Infection Rate = $\frac{\text{No. of HAIs associated with Urinary Catheter}}{\text{No. of urinary catheter days}} \times 1000$

Utilization Ratio of Urinary Catheter = $\frac{\text{No. of days of the Urinary Catheter}}{\text{Total no. of patient days}}$

SURVEILLANCE RESULTS

Surveillance Report

Define the event, population, setting and time period

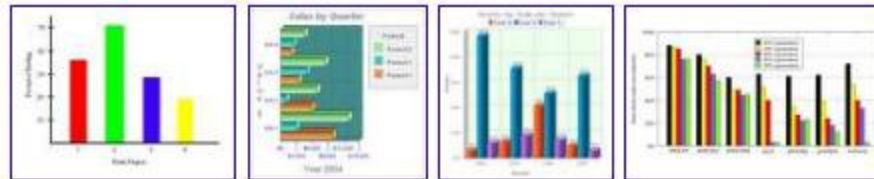
The report should be disseminated to those managers and healthcare providers in the organization for performance improvement



SURVEILLANCE REPORT

Data Display Tools

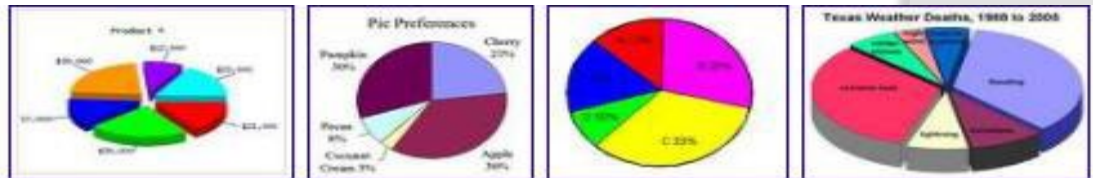
Bar Graph



Line Graph



Pie Graph



BENCHMARKING

- ❑ Benchmarking is the process of comparing oneself to others who are performing similar activities, so as to continuously improve.
- ❑ The National Healthcare Safety Network (NHSN) in the US is the oldest and most widely used network for benchmarking.

REQUIREMENT FOR SUCCESSFUL BENCHMARKING

Criteria for defining a case are standardized and up to date.

☐ **The population and time period for the study are well defined.**

☐ **The surveillance methodology is standardized and consistently used by all of the participants over time.**

☐ **Rates and ratios are calculated using the same numerators (number of cases) and denominators (population at risk).**

☐ **All data collectors receive training on how to collect data and use a standardized form.**

☐ **The facility and population that is compared is similar to the types of facilities and populations in an aggregate database used for external comparison**

National Healthcare Safety Network (NHSN) (CDC) summary data,

PERFORMANCE IMPROVEMENT PROJECT



SURVEILLANCE IPC.9

There is a continuous surveillance of healthcare associated infections.

IPC.9

There is a continuous surveillance of healthcare-associated infections.

Surveillance is an important component of infection control program to assess the effectiveness of prevention and control measures. Surveillance assists the hospitals to identify risks from practices and infections on which they should focus their programs to control and minimize them. Each hospital should identify those epidemiologically important infections, infection sites, and associated devices, procedures, and practices that will provide the focus of efforts to prevent and to reduce the risk and incidence of health care–associated infections. Identification of HAIs should be done according to Standardized Criteria. Data Collection & analysis should be done according to hospital surveillance policy. The hospital should adopt outcome indicators for monitoring HAIs rates.

IPC.9

Relevant sub-standards	
IPC.9.1	There are policies and procedures which define the types of surveillance to be carried out with regard to healthcare-associated infections.
IPC.9.2	There are written standardized definitions for identification of healthcare-associated infections.
IPC.9.3	The policies and procedures define how data will be collected, analyzed , and used.
IPC.9.4	The monitoring process includes using indicators related to infection issues that are epidemiologically important to the hospital

SURVEILLANCE IPC.10

Results of healthcare-associated infections surveillance are integrated into the hospital's quality improvement program.

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Results of healthcare-associated infections surveillance are integrated into the hospital's quality improvement program.

To ensure that the surveillance data (calculated HAI rates) are properly utilized by the hospital to improve the clinical services and safety within the hospital. The calculated HAIs rates should be trended, benchmarked and communicated regularly with concerned departmental/unit leaders, higher administration authority and integrated with quality improvement projects.

IPC.10

Relevant sub-standards

IPC.10.1	The hospital selects indicators based on the projected use of data (internal and external benchmarking).
IPC.10.2	The hospital defines the data collection methods and sources (hospital information system, verbal and written communication, medical record review, direct observation & review of clinical indicators).
IPC.10.3	The results of infection monitoring in the hospital are regularly communicated to staff, physicians, and management.
IPC.10.4	The hospital uses risk, rate, and trend information to design or modify processes to reduce healthcare-associated infections to the lowest possible level.
IPC.10.5	The hospital makes the necessary improvements for the identified epidemiologically important infections, processes, and devices that are associated with risk of healthcare-associated Infections.

Thank you