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How did infection control programs start and why are there infection control professionals hospitals?



Brief History

- 1950s: Outbreaks of infection in nurseries nationwide
- 1960s: JCAH adds standard for infection control
- 1970s: JCAH standard strengthened to include trained person designated to conduct infection surveillance, prevention and control activities
 - CDC establishes training curriculum and courses
 - CDC establishes the National Nosocomial Infections Study (NNIS)



Brief History (cont.)

- 1980s: CDC reports finding of SENIC and establishes that 32% of hospital-associated infections are preventable if surveillance, prevention and control activities are conducted by trained infection control professionals and hospital epidemiologists
 - APIC takes over training courses from CDC
 - APIC establishes certification for ICP



Brief History (cont.)

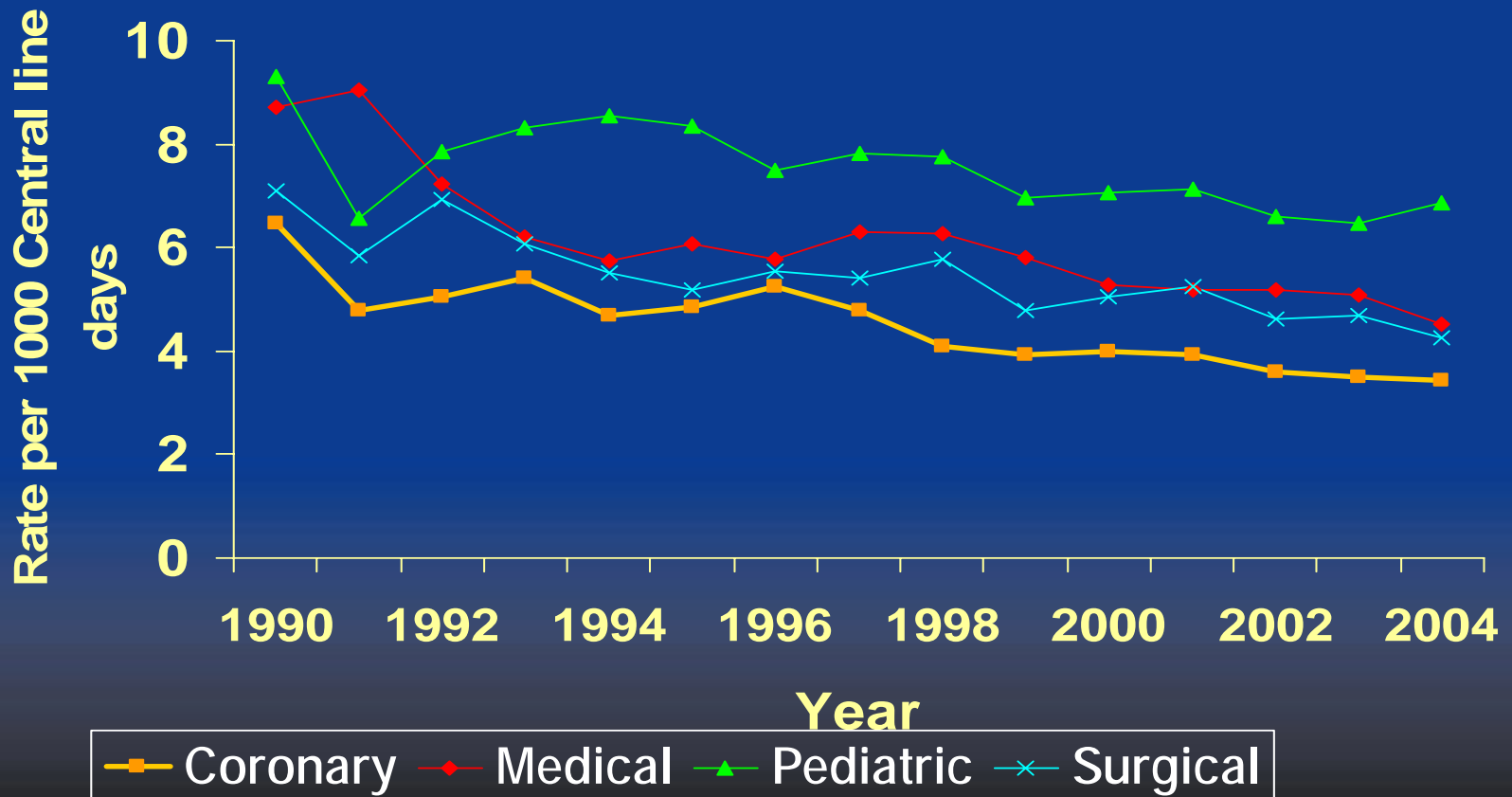
- 1990s: NNIS system expands to >300 hospitals
 - Protocols for targeted surveillance of high risk patients yield data useful for inter- and intra-hospital comparisons
 - NNIS Reports published annually
- 2000s: Patient safety brings spotlight on infection control and helps drive many prevention initiatives
 - State mandates for public reporting



Key Features for Success

- Standard definitions for events
- Specified monitoring protocols
- Feedback of actionable data to participants
- Trained personnel for data collection and for prevention & intervention (e.g., ICP)

Central Line-Associated BSI Rates, By ICU Type, NNIS System, 1990 - 2004





Purposes of NHSN

- Describe the epidemiology of adverse events among patients in U.S. healthcare facilities
- Monitor compliance with proven infection prevention practices in U.S. healthcare facilities
- Promote epidemiologically-sound surveillance methodology
- Establish comparative rates that can be used for local quality improvement efforts
- Conduct collaborative research with members



NHSN Components

- Patient Safety
 - Extension of NNIS and DSN
- Healthcare Personnel Safety
 - Extension of NaSH
- Research and Development
 - One-time surveys
 - Pilot studies



NHSN is a voluntary, confidential system



How the Patient Safety Component Works

- **Device-associated**
 - Facility chooses the events/processes to monitor and the patient populations (locations) on which to focus
- **Procedure-associated**
 - Facility chooses the events/processes to monitor and the procedures on which to focus
- **Medication-associated**
 - Facility chooses to report antimicrobial resistance data from microbiology, antimicrobial use data from pharmacy, or both



Possible Model for Recipient Surveillance in NHSN

- Procedure-associated Module
 - Transfusion-related events
 - Numerator data = Patient data, transfusion reaction data (e.g., incompatibility; under transfusion; transfusion reaction acute lung injury [TRALI]), risk factors
 - Denominator data = Relevant information on each blood product transfusion procedure (type of product, origin, dates, etc.)
 - ? Process monitors

Event Type*: TRR - TRANSFUSION-RELATED REACTION

Date of Event*:

Post-procedure: Y - Yes

NHSN Procedure Code*: BLTRF - BLOOD TRANSFUSION

ICD-9-CM Code:

Procedure Date*:

Link to Procedure

Event is not Linked

Location:

Date Admitted to Facility:

Risk Factors

Appropriate risk factors here

Event Details

Specific Event*: TRALI - Transfusion-related acute lung injury
Secondary Bloodstream Infection: UNDRTF - Under transfusion
Died: INCOMP - Incompatibility

- Analysis**
- Survey**
- Users**
- Facility**
- Group**
- Log Out**

Patient ID*: **Find** **Find Procedures for Patient**

Social Security #: Secondary ID:

Last Name: First Name:


Middle Name:

Gender*: Date of Birth*:

Procedure Information

NHSN Procedure Code*:

ICD-9-CM Code:

Procedure Date*:  **Link to Event** *Procedure is not Linked*

Procedure Details

Appropriate transfusion procedure details here



How Data are Shared in NHSN

- CDC does not send NHSN data to State health departments or other entities
- Health departments or others obtain data directly from NHSN facilities
 - By becoming a Group in NHSN
 - By accepting data files or reports from facilities



NHSN Data Sharing: Group



- A Group can enroll in NHSN
- An NHSN facility joins the Group
- Facility gives access rights to certain of its data to the Group
- Group can analyze the data of its member facilities

View rights for Patient With Identifiers, BSI and SSI Events

NHSN 1.0.40 NHSN Confer Patient Safety Rights - Microsoft Internet Explorer

Address: https://sdn2.cdc.gov/nhsn/manageGroups.do

Department of Health and Human Services
Centers for Disease Control and Prevention

NHSN - National Healthcare Safety Network [Contact us](#)

Logged into DHQP Memorial Hospital (ID 10000) as TCH
Facility: DHQP Memorial Hospital (ID 10000) is following PS component

Confer Rights-Patient Safety

Please select the rights that group NYSDOH should have to facility 'DHQP Memorial Hospital'

Patient Safety

Patient		View	Add	Edit	Delete	All Rights
Patient	<input checked="" type="radio"/> With Identifiers <input type="radio"/> Without Identifiers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Event

	View	Add	Edit	Delete	All Rights
BJ - Bone and Joint Infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BSI - Bloodstream Infection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CNS - Central Nervous System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CVS - Cardiovascular	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DI - Dialysis Incident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EENT - Eye, Ear, Nose and Throat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
GI - Gastrointestinal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LRI - Lower Respiratory Infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PNEU - Pneumonia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
REPR - Reproductive Tract	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SSI - Surgical Site Infection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OST - Otitis and Soft Tissue	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Start | Local intranet | 7:51 PM

View rights for Procedure and ICU/NICU Denominators, Plan, and Hospital Survey



View Rights for Patient Safety Data Analysis

The screenshot displays a web application interface for managing user rights. The left-hand navigation menu includes options such as 'Surgeons', 'Custom Options', 'Export Data', 'Group', 'Nominate', 'Join', 'Confer Rights', 'Leave', 'Analysis', 'Generate Data', 'Sets', 'Output Options', and 'Logout'. The main content area is titled 'Denominator Data: Procedure/Summary' and contains a table of items with checkboxes for 'View', 'Add', 'Edit', 'Delete', and 'All Rights'. Below this table are sections for 'Plan', 'Annual Survey', and 'Analysis', each with a 'View' checkbox. At the bottom, there are 'Save' and 'Back' buttons. The Windows taskbar at the bottom shows the Start button, several open applications, and the system tray with the time 7:52 PM and 'Local intranet' connection.

Item	View	Add	Edit	Delete	All Rights
PROC - Procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROC - Custom Procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ICU - Device Associated - Intensive Care Unit / Other Locations	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NICU - Device Associated - Neonatal Intensive Care Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SCA - Device Associated - Specialty Care Area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DIAL - Device Associated - Outpatient Dialysis - Census Form	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AUR-MICRO - Medication Associated - AUR Microbiology Laboratory Data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AUR-PHARM - Medication Associated - AUR Pharmacy Data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plan	View	Add	Edit	Delete	All Rights
Patient Safety Monthly Reporting Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Annual Survey	View	Add	Edit	Delete	All Rights
Patient Safety Annual Hospital Survey	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analysis					
Patient Safety Data Analysis	<input checked="" type="checkbox"/>				



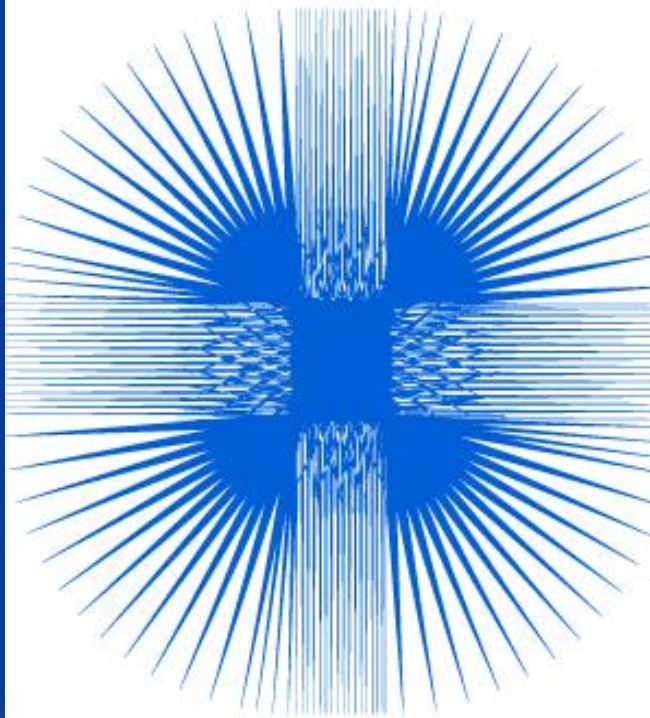
Issues to Consider

- Are the data readily available?
 - Data sources (numerator/denominator)
- Data collectors
 - If none, what is incentive for such a position?
- Which adverse events?
 - Sentinel or common
- What patient population(s)?
 - All or sample



Issues to Consider

- Confidentiality needed?
- Voluntary or mandatory reporting?
- Link to other systems?
 - Data sharing agreements
 - Database management
 - Analysis
- Resources



NHSN

National Healthcare
Safety Network

www.cdc.gov/ncidod/hip/nhsn/members/members.htm