



# Surveillance of Infections

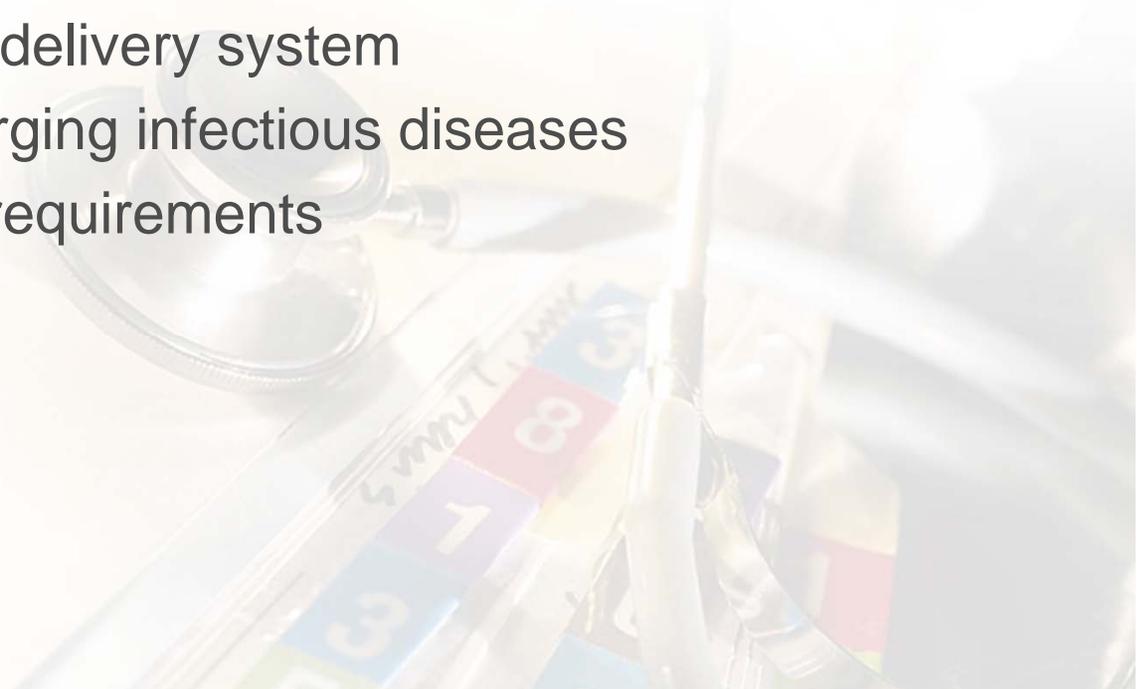
Infection Prevention Conference  
Bismarck, North Dakota

August 17-18, 2011



# Surveillance of Infections

- Surveillance is an essential component of an effective infection prevention and control program.
  - Sound epidemiological and statistical principles
  - Use surveillance data to improve the quality of healthcare
- Challenges
  - Changing healthcare delivery system
  - Emerging and reemerging infectious diseases
  - Mandatory reporting requirements





# 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

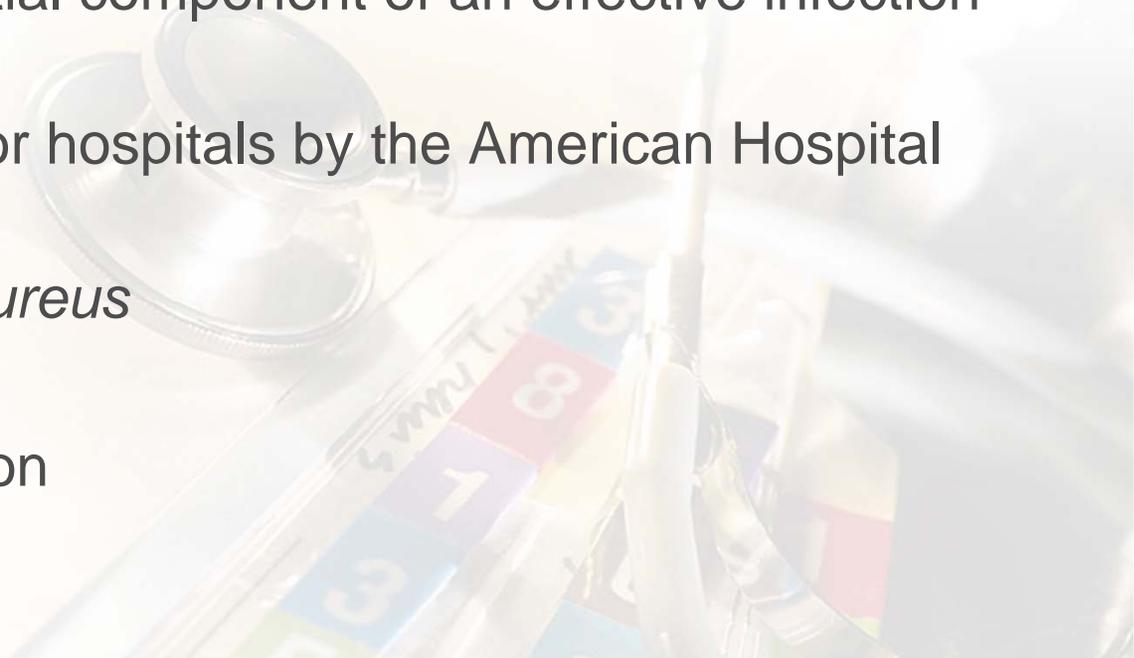
- Include
  - Infection prevention
  - Performance improvement
  - Patient safety
  - Public health activities
- Mandatory and public reporting requirements
- Surveillance data
  - Reduce the occurrence of infections by using risk factors and implementation of risk-reduction measures and monitoring effectiveness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



# Surveillance Definition

- “Ongoing collection, collation, 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*. 4<sup>th</sup> 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
- 



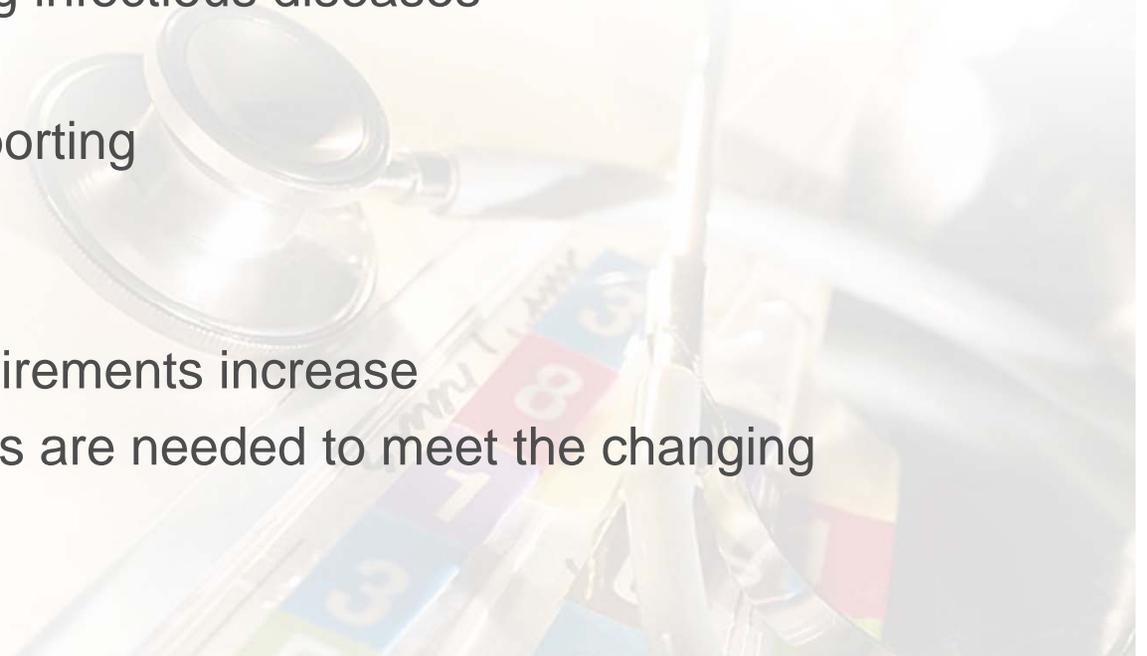
# SENIC PROJECT

- 1985 Study on the Efficacy of Nosocomial Infection Control
  - Scientific evidence
    - that hospitals with
      - strong surveillance programs
      - strong prevention and control programs
        - » 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
    - Hospitals, LTC, rehab, ASC, dialysis, home care, hospice, mental health, and correctional facilities



# Factors Affecting Surveillance Programs

- Shorter hospital stays
- Aging of the population
- Increased use of invasive procedures and devices
- More acutely ill patients and residents
- Healthcare worker shortage
- Emerging and reemerging infectious diseases
- Threat of bioterrorism
- Mandatory and public reporting
- New diseases emerging
- Antimicrobial resistance
- Mandatory reporting requirements increase
- New surveillance methods are needed to meet the changing environment



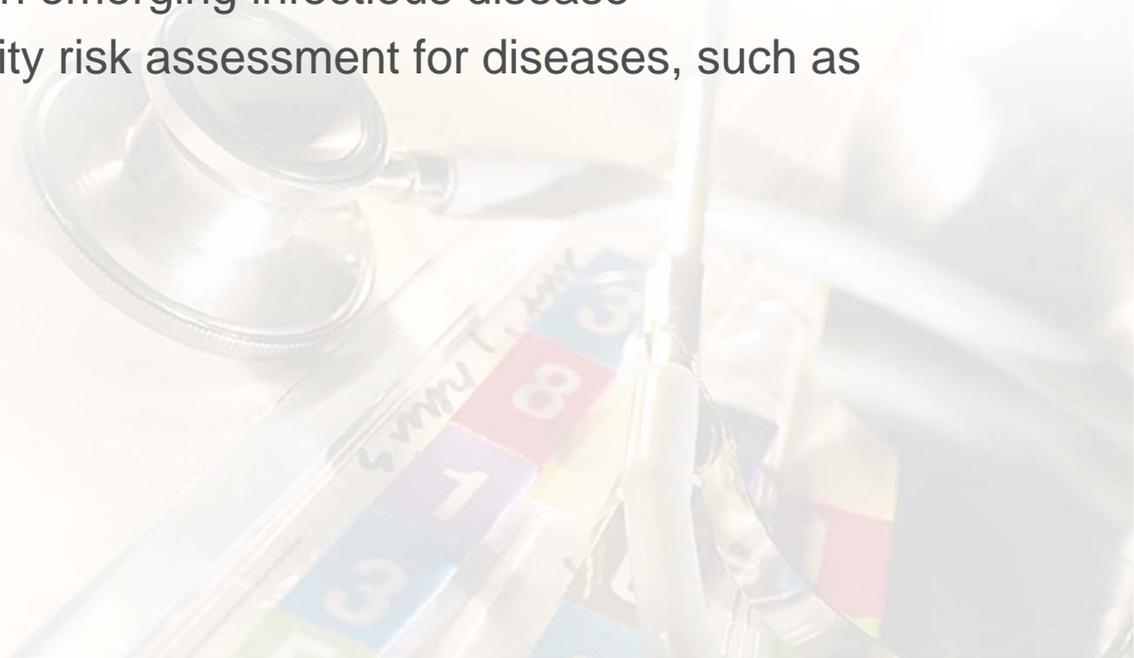


# Purpose of Surveillance

- Determine baseline and endemic rates of occurrence of a disease or event
- Detect and investigate clusters or outbreaks
- Assess the effectiveness of prevention and control measures
- Monitor the occurrence of adverse outcomes to identify potential risk factors
- Provide information that can be used by an organization to target performance improvement activities
- Measure the efficacy of interventional and performance improvement efforts
- Observe practices, such as hand hygiene and sterilizer performance monitoring, to promote compliance with recommendations and standards
- Detect and report notifiable diseases to the health department
- Identify organisms and diseases of epidemiological importance, such as AROs and tuberculosis, to prevent their spread
- Ensure compliance with requirements of federal regulators, such as the Occupational Safety and Health Administration and the Centers for Medicare and Medicaid Services



# Purpose of Surveillance

- Ensure compliance with state 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 a bioterrorist event or an emerging infectious disease
  - Provide data to conduct a facility risk assessment for diseases, such as legionellosis or tuberculosis
- 



# 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 AHIs in a defined population
    - Example:
      - » Central line-associated bloodstream infections in an ICU
      - » Surgical site infection for a particular surgery such as hips, knee, CABGs
  - Overall facility rates are not sensitive enough to identify potential problems
  - Are 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



# 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

# Infection Definitions – Acute Care

http://www.cdc.gov/ncidod/dhqp/pdf/nnis/NosInfDefinitions.pdf

File Edit Go to Favorites Help

Norton nhsn infection definitions Search Safe Web Identity Safe

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ICS Ltd. Primary Care - Int... ICS Ltd. Dentistry - Surger... Instrument Sterilization Pr... The Division of Health Car... CIDRAP FDA approves Sa... Suggested Sites Get More Add-ons

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**AJIC** major articles

**CDC/NHSN surveillance definition of health care-associated infection and criteria for specific types of infections in the acute care setting**

Teresa C. Horan, MPH, Mary Andrus, RN, BA, CIC, and Margaret A. Dudeck, MPH

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<http://www.cdc.gov/ncidod/dhqp/pdf/nnis/NosInfDefinitions.pdf>



# Infection Definitions for LTC

http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APIC-SHEA\_Guideline

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**AJIC** special communication

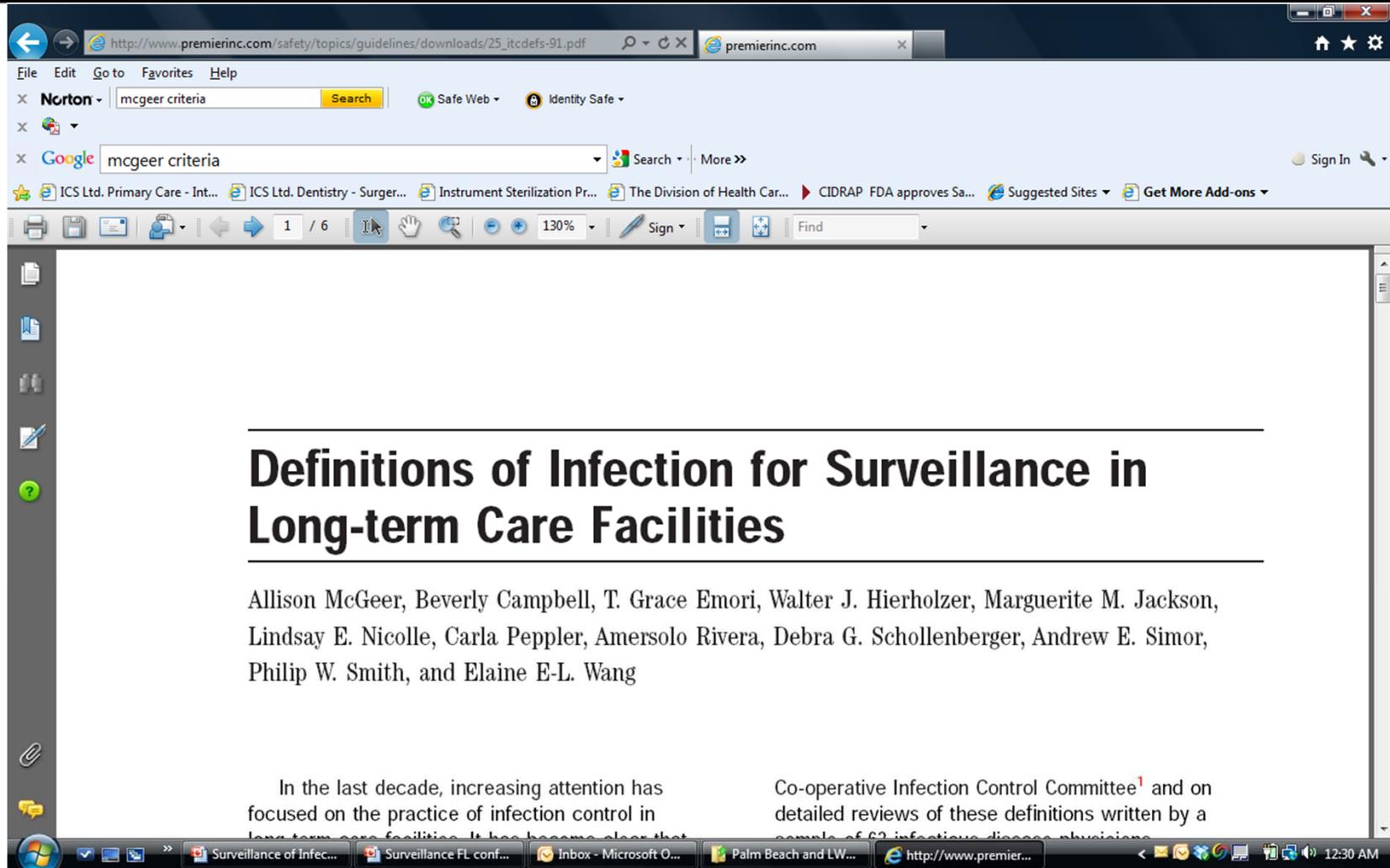
**SHEA/APIC Guideline:**  
**Infection prevention and control**  
**in the long-term care facility**

Philip W. Smith, MD,<sup>a</sup> Gail Bennett, RN, MSN, CIC,<sup>b</sup> Suzanne Bradley, MD,<sup>c</sup> Paul Drinka, MD,<sup>d</sup> Ebbing Lautenbach, MD,<sup>e</sup>  
James Marx, RN, MS, CIC,<sup>f</sup> Lona Mody, MD,<sup>g</sup> Lindsay Nicolle, MD,<sup>h</sup> and Kurt Stevenson, MD<sup>i</sup>  
July 2008

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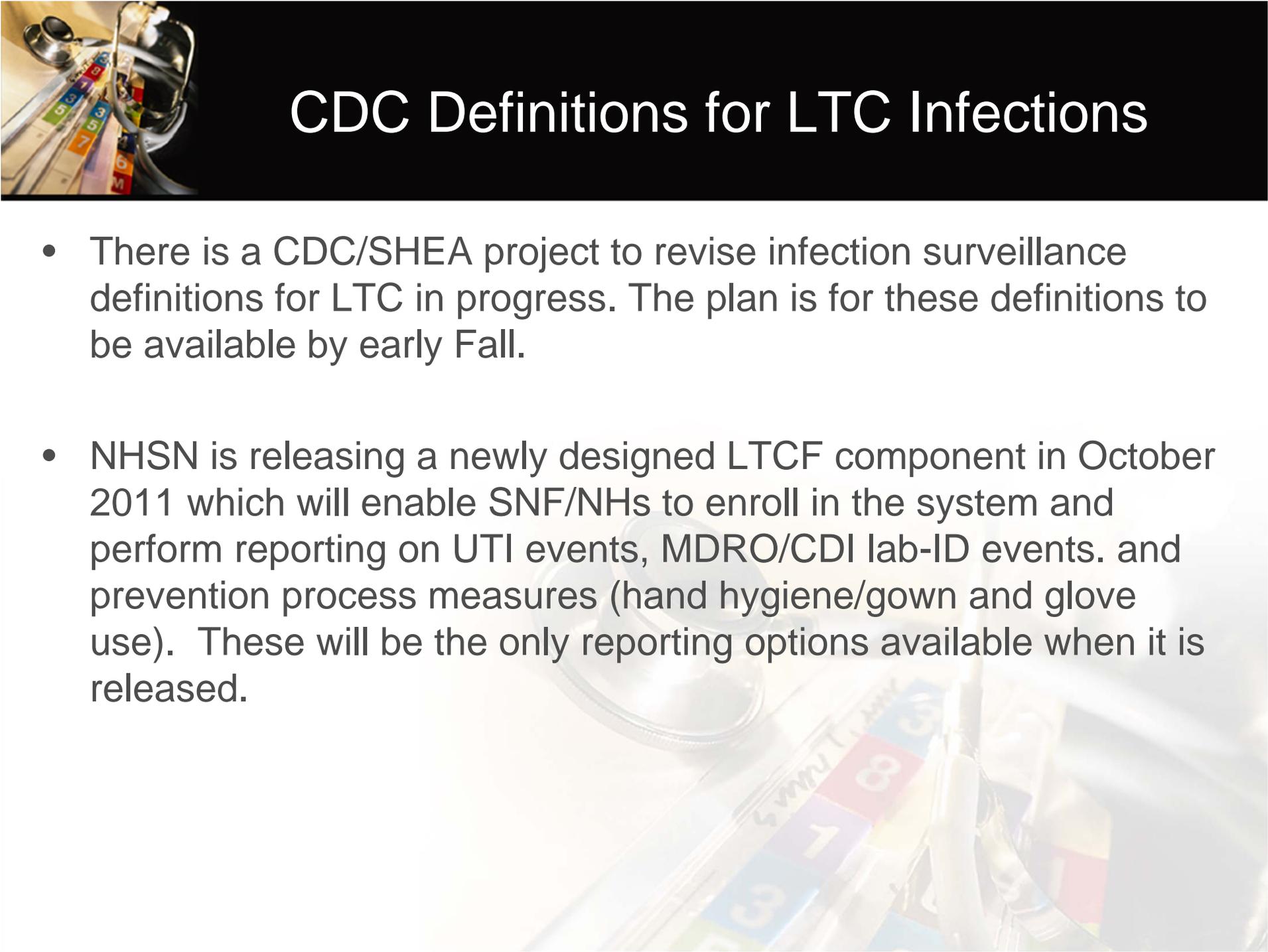
[http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APIC-SHEA\\_Guideline.pdf](http://www.apic.org/Content/NavigationMenu/PracticeGuidance/APIC-SHEA_Guideline.pdf)

# McGreer LTC Infection Definitions



The screenshot shows a web browser window with the address bar displaying the URL: [http://www.premierinc.com/safety/topics/guidelines/downloads/25\\_itcdefs-91.pdf](http://www.premierinc.com/safety/topics/guidelines/downloads/25_itcdefs-91.pdf). The browser's search bar contains the text "mcgeer criteria". The main content area of the browser displays the title of the document: "Definitions of Infection for Surveillance in Long-term Care Facilities". Below the title, the authors are listed: Allison McGeer, Beverly Campbell, T. Grace Emori, Walter J. Hierholzer, Marguerite M. Jackson, Lindsay E. Nicolle, Carla Pepler, Amersolo Rivera, Debra G. Schollenberger, Andrew E. Simor, Philip W. Smith, and Elaine E-L. Wang. The document text is partially visible at the bottom of the page, showing the beginning of a paragraph: "In the last decade, increasing attention has focused on the practice of infection control in long-term care facilities. It has become clear that..." and another paragraph: "Co-operative Infection Control Committee<sup>1</sup> and on detailed reviews of these definitions written by a sample of 62 infectious disease physicians..."

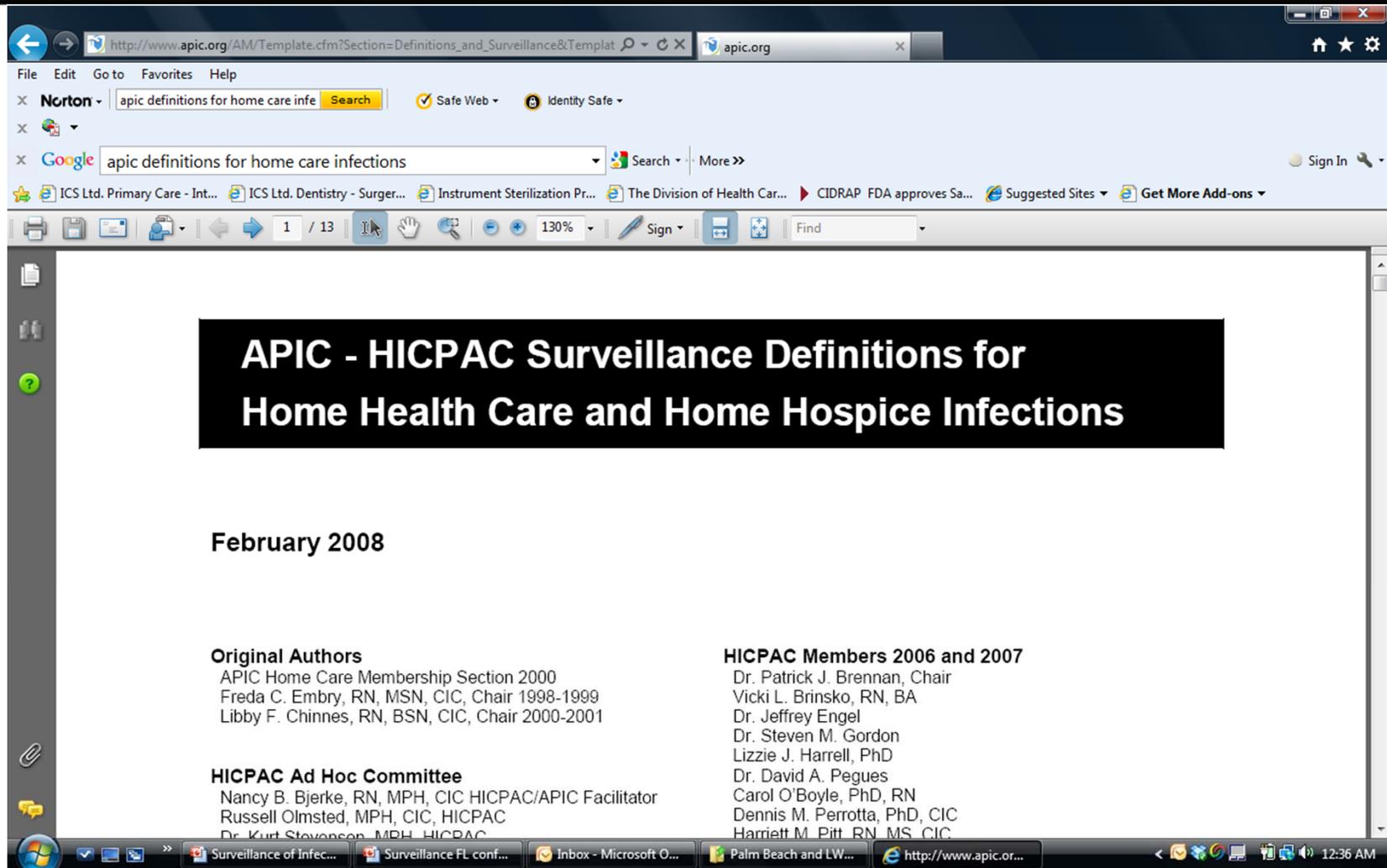
[http://www.premierinc.com/safety/topics/guidelines/downloads/25\\_itcdefs-91.pdf](http://www.premierinc.com/safety/topics/guidelines/downloads/25_itcdefs-91.pdf)



# CDC Definitions for LTC Infections

- There is a CDC/SHEA project to revise infection surveillance definitions for LTC in progress. The plan is for these definitions to be available by early Fall.
- NHSN is releasing a newly designed LTCF component in October 2011 which will enable SNF/NHs to enroll in the system and perform reporting on UTI events, MDRO/CDI lab-ID events, and prevention process measures (hand hygiene/gown and glove use). These will be the only reporting options available when it is released.

# Home Care and Hospice Infection Definitions



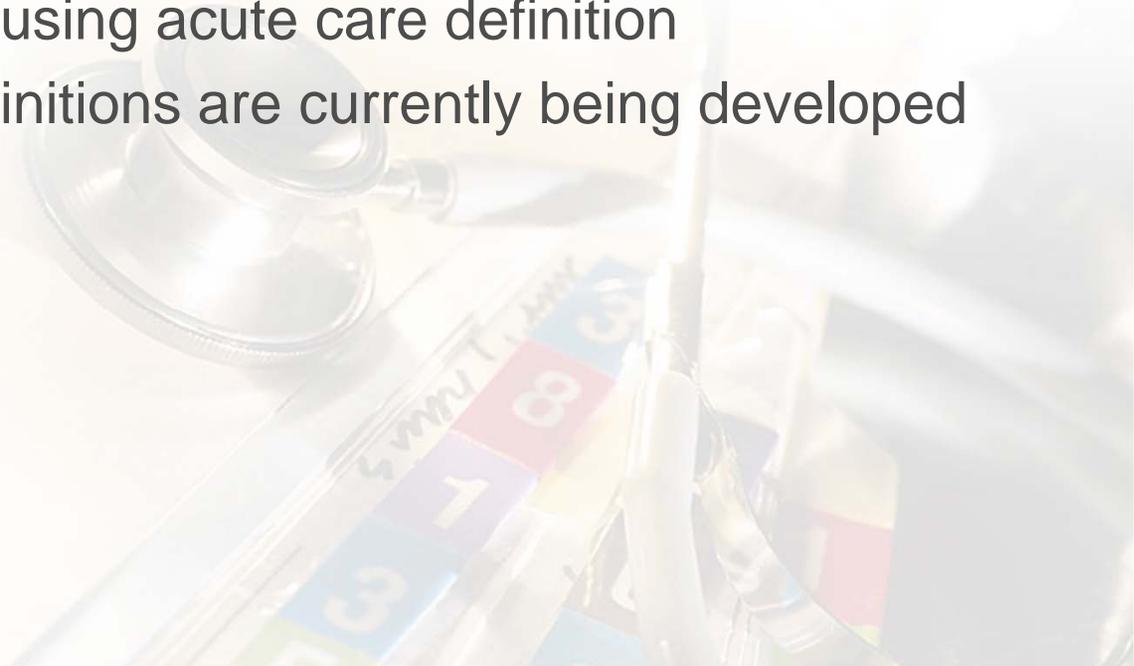
The screenshot shows a web browser window with the following details:

- Address bar: [http://www.apic.org/AM/Template.cfm?Section=Definitions\\_and\\_Surveillance&Templat...](http://www.apic.org/AM/Template.cfm?Section=Definitions_and_Surveillance&Templat...)
- Search bar: "apic definitions for home care infe" (partially visible)
- Page Title: **APIC - HICPAC Surveillance Definitions for Home Health Care and Home Hospice Infections**
- Publication Date: **February 2008**
- Original Authors:
  - APIC Home Care Membership Section 2000
  - Freda C. Embry, RN, MSN, CIC, Chair 1998-1999
  - Libby F. Chinnnes, RN, BSN, CIC, Chair 2000-2001
- HICPAC Ad Hoc Committee:
  - Nancy B. Bjerke, RN, MPH, CIC HICPAC/APIC Facilitator
  - Russell Olmsted, MPH, CIC, HICPAC
  - Dr. Kurt Stevenson, MPH, HICPAC
- HICPAC Members 2006 and 2007:
  - Dr. Patrick J. Brennan, Chair
  - Vicki L. Brinsko, RN, BA
  - Dr. Jeffrey Engel
  - Dr. Steven M. Gordon
  - Lizzie J. Harrell, PhD
  - Dr. David A. Pegues
  - Carol O'Boyle, PhD, RN
  - Dennis M. Perrotta, PhD, CIC
  - Harriett M. Pitt, RN, MS, CIC

[http://www.apic.org/AM/Template.cfm?Section=Definitions\\_and\\_Surveillance&Template=/CM/ContentDisplay.cfm&ContentFileID=9898](http://www.apic.org/AM/Template.cfm?Section=Definitions_and_Surveillance&Template=/CM/ContentDisplay.cfm&ContentFileID=9898)



# Other Infection Definitions

- Behavioral Health, Correctional Facilities, Drug Treatment Facilities, Rehab, LTACs
    - No national definitions yet.
    - Take other definitions and fit them to these settings
    - LTACs may consider using acute care definition
    - Behavioral Health definitions are currently being developed
- 



# 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)



# Infection Rate Calculation

Example of rate calculation:

In June, there were three catheter-associated primary bloodstream infections (CABSIs) and 491 central line days in an ICU.

The number of BSIs in ICU patients in June/number of central line days in ICU patients in June X 1000

$$3/491 \times 1000 = 6.1$$

This rate is interpreted as 6.1 CABSIs per 1000 central line-days in the ICU in June.



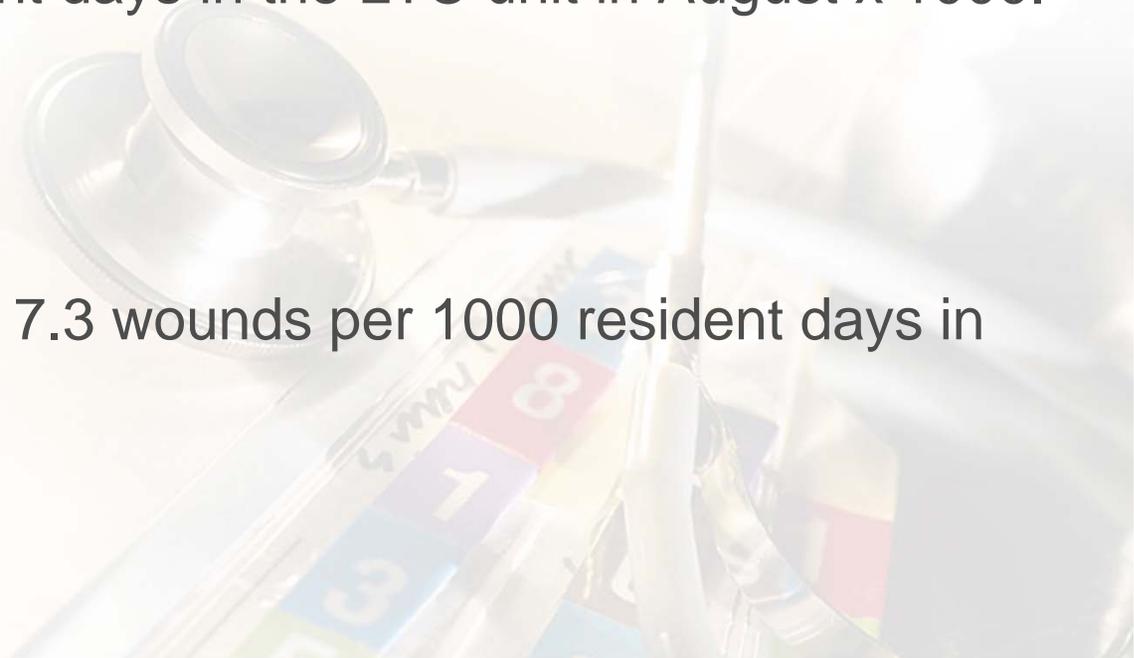
# Infection Rate Calculation

Example:

In August there were two resident wound infections in a LTC unit that had 275 residents days. The calculation for the wound infection rate would be the number of wounds in the LTC unit in August/number of resident days in the LTC unit in August x 1000.

$$2/275 \times 1000 = 7.3$$

The rate is expressed as 7.3 wounds per 1000 resident days in the LTC unit in August





# Surgical Site Infections

http://www.cdc.gov/nhsn/psc\_pa.html

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## National Healthcare Safety Network (NHSN)

NHSN > Patient Safety Component

### Procedure-Associated (PA) Module

Patients undergoing surgical procedures are at an increased risk of infectious complications. Surgical Site Infections (SSIs) following operative procedures are well documented sequelae, and can result in extended hospital stays, increased morbidity, and increased healthcare costs. In one publication, it was estimated that over 8% of the HAIs that were associated with deaths in US were SSIs.<sup>1</sup>

Post Procedure Pneumonias (PPPs) can also develop in patients postoperatively. Postoperative reduction in lung inflation, challenge to a patient's immune system, and side effects of prescribed medications can all impact a patient's ability to resist infection and a PPP can result in the same negative consequences of illness, increased cost and death.

NHSN allows facilities to categorize surgical patients by the National Nosocomial Infection Surveillance (NNIS) System SSI risk- stratification method. This method accounts for the patient's pre-surgical medical status, length of surgery compared to similar surgeries and a extent of contamination of the surgical wound. Using this information, facilities are able to categorize their patients, calculate risk-stratified rates, and compare those rates against national risk stratified rates. A variety of comparison percentiles and statistical analysis options are offered including line listings, frequency tables, rates, and control charts and can be used to better inform quality improvement decisions.

Protocols which outline the mechanisms and methods of surveillance are included for the following NHSN Events:

- SSI-Surgical site infection
- PPP-Post procedure pneumonia

<sup>1</sup>Klevens RM, Edward JR, et al. Estimating health care-associated infections and deaths in U.S. hospitals,

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1600 Clifton Rd  
Atlanta, GA 30333  
nhsn@cdc.gov

More contact info >>

http://www.cdc.gov/nhsn/psc\_pa.html



# Surgical Site Infection Event

The screenshot shows a web browser window with the address bar containing the URL <http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf>. The browser's search bar contains the text "nhsn surgical site infection definition". The main content area of the browser displays the CDC logo and the title "Surgical Site Infection (SSI) Event". Below the title, there is an "Introduction" section and a paragraph of text. The browser's taskbar at the bottom shows several open applications, including "Surveillance of Infec...", "Surveillance FL conf...", "Inbox - Microsoft O...", "Palm Beach and LW...", and "http://www.cdc.gov...". The system clock in the bottom right corner indicates the time is 12:57 AM.

*Procedure-associated Events*  
*SSI*

## Surgical Site Infection (SSI) Event

**Introduction:** In 2002, in the United States, an estimated 14 million NHSN operative procedures were performed (CDC unpublished data). SSIs were the second most common healthcare-associated infection, accounting for 17% of all HAIs among hospitalized patients<sup>1</sup>. A similar rate was obtained from NHSN hospitals reporting data in 2006-2008 (15,862 SSI following 830,748 operative procedures) (CDC, unpublished data) with an overall rate of nearly 2%.

While advances have been made in infection control practices, including improved operating room ventilation, sterilization methods, barriers, surgical technique, and availability of antimicrobial prophylaxis, SSIs remain a substantial cause of morbidity and mortality among hospitalized patients. In one study, among nearly 100,000 HAIs reported in one year, deaths were associated with SSIs in more than 8,000 cases.<sup>2</sup>

Surveillance of SSI with feedback of appropriate data to surgeons has been shown to be an important component of strategies to reduce SSI risk.<sup>3,4,5,6,7</sup> A successful surveillance program includes the use of epidemiologically-sound infection definitions and effective surveillance

<http://www.cdc.gov/nhsn/PDFs/pscManual/9pscSSIcurrent.pdf>



# 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.



# Data Collection Tools

Copy of Surgical Surveillance 2008 2-09 [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Acrobat

Clipboard Font Alignment Number Styles Cells Editing

General

Conditional Formatting as Table Cell Styles

AutoSum Fill Clear Sort & Find & Filter Select

A1 SURGICAL SURVEILLANCE - 2008

SURGICAL SURVEILLANCE - 2008																													
			YEAR TO DATE 2007			Jan-08			Feb-08			Mar-08			Apr-08			May-08			Jun-08			Jul-08			YEAR TO DATE		
Type of Surgery	NNIS Rate	Cut Time	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%	Cases	Infect	%			
<b>CARDIAC CATH</b>			8272	3	0.04%	806	0	0.00%	862	0	0.00%	714	0	0.00%	727	0	0.00%	623	0	0.00%	742	0	0.00%	624	0	0.00%	5098	0	0.00%
PTCA			2033	0	0.00%	56	0	0.00%	37	0	0.00%	43	0	0.00%	19	0	0.00%	20	0	0.00%	237	0	0.00%	36	0	0.00%	448	0	0.00%
ERClose/StarClose			175	0	0.00%	170	0	0.00%	0	0	0.00%	0	0	0.00%	0	0	0.00%	3	0	0.00%	0	0	0.00%	2	0	0.00%	175	0	0.00%
Angioseal			1531	1	0.07%	0	0	0.00%	201	0	0.00%	164	0	0.00%	162	0	0.00%	99	0	0.00%	150	0	0.00%	136	0	0.00%	912	0	0.00%
Stent			2166	1	0.05%	199	0	0.00%	216	0	0.00%	173	0	0.00%	170	0	0.00%	176	0	0.00%	194	0	0.00%	1453	0	0.00%	2581	0	0.00%
LABP		Starting 2007	67	0	0.00%	8	0	0.00%	4	0	0.00%	7	0	0.00%	4	0	0.00%	5	0	0.00%	6	0	0.00%	4	0	0.00%	38	0	0.00%
AICD			118	2	1.69%	19	0	0.00%	14	0	0.00%	11	0	0.00%	12	0	0.00%	8	1	#####	10	1	#####	5	0	0.00%	79	2	2.53%
EP Lab			102	.	#####	16	0	0.00%	12	0	0.00%	10	0	0.00%	11	0	0.00%	8	1	#####	10	0	0.00%	1	0	0.00%	68	1	1.47%
OR			16	0	0.00%	3	0	0.00%	2	0	0.00%	1	0	0.00%	1	0	0.00%	0	0	0.00%	0	0	0.00%	4	0	0.00%	11	0	0.00%
<b>PACEMAKER</b>			303	1	0.33%	36	0	0.00%	31	0	0.00%	31	0	0.00%	32	0	0.00%	26	0	0.00%	24	0	0.00%	31	0	0.00%	211	0	0.00%
EP Lab			172	1	0.58%	18	0	0.00%	19	0	0.00%	19	0	0.00%	18	0	0.00%	19	0	0.00%	14	0	0.00%	15	0	0.00%	122	0	0.00%
OR			131	0	0.00%	18	0	0.00%	12	0	0.00%	12	0	0.00%	14	0	0.00%	7	0	0.00%	10	0	0.00%	16	0	0.00%	89	0	0.00%
<b>OPEN HEART</b>																													
CABG	1.56	5 hrs	279	8	2.87%	21	1	4.76%	39	0	0.00%	25	0	0.00%	26	1	3.85%	20	0	0.00%	18	0	0.00%	25	2	8.00%	174	4	2.30%
CABG with VALVE			24	3	#####	1	0	0.00%	1	1	0.00%	2	0	0.00%	3	2	#####	1	0	0.00%	6	0	0.00%	2	0	0.00%	16	3	#####
VALVE ONLY	0	1.2	54	1	1.85%	7	0	0.00%	6	0	0.00%	4	0	0.00%	7	0	0.00%	5	0	0.00%	1	0	0.00%	2	0	0.00%	32	0	0.00%
<b>ORTHO</b>																													
TOTAL HIP	1.41	2 HRS	118	2	1.69%	7	0	0.00%	13	0	0.00%	17	0	0.00%	11	0	0.00%	15	0	0.00%	20	1	5.00%	10	0	0.00%	93	1	1.08%
TOTAL KNEE	1.09	2 HRS	174	6	3.45%	16	0	0.00%	14	0	0.00%	18	0	0.00%	13	0	0.00%	18	0	0.00%	24	0	0.00%	18	0	0.00%	121	0	0.00%
ORIF OF FRACTURE	1	2 HRS	147	1	0.68%	12	0	0.00%	13	0	0.00%	20	0	0.00%	16	0	0.00%	11	0	0.00%	18	0	0.00%	10	0	0.00%	100	0	0.00%
ROTATOR CUFF			54	0	0.00%	5	0	0.00%	6	0	0.00%	4	0	0.00%	3	0	0.00%	0	0	0.00%	2	0	0.00%	3	0	0.00%	23	0	0.00%
TOTAL SHOULDER			22	0	0.00%	2	0	0.00%	1	0	0.00%	1	0	0.00%	3	0	0.00%	1	0	0.00%	4	0	0.00%	0	0	0.00%	12	0	0.00%

Sheet1 Sheet2 Sheet3

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# Line Listing Data Collection

SSIs 3 - Microsoft Excel

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J5

OTHER SSIs											
Last Name	First Name	Type of Inf.	Acct #	MR #	Age	WT	ASA	CLASS		Physician	OR Room

Proced  
AAA  
CABG:  
ACDF C5-7

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# Line Listing Data Collection

SSIs 3 - Microsoft Excel

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M N O P Q R S T U V W X

**OTHER SSIs**

Procedure	Procedure Date	Procedure Start Time	Procedure End Time	ABX	ABX Given	ABX Redose	ABX Redose Time	ABX Redose	ABX Redose Time	Prep	Post Op Drsg
AAA	2/16/2010	8:37	16:53	Ancef	8:15	Ancef	1215	Ancef	16:20	Alcohol/ Duraprep	Dermabond /4x4/tape
CABG x4	2/24/2010	9:27	14:14	Zinacef 1.5 gm	9:05	Zinacef 1.5 gm	13:05	NA	NA	Alcohol/ Duraprep /CHG	dermabond
ACDF C5-7 Evoke	3/30/2010	11:32	13:48	Vanco 1 GM	948	NA	NA	NA	NA		

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# Line Listing Data Collection

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2:14:00 PM

OTHER SSIs

Post Op Drsg	Infection Date	Cultures Date	Site Cultured	Culture Results	Cultures Date	Site Cultured	Culture Results	Cultures Date	Site Cultured	Culture Results
Dermabond /4x4/tape	2/23/2010	2/23/2010	Wound	Serratia	2/27/2010	Sternm	Serratia	NA	NA	NA
dermabond		No cultures Rtn to OR for perforation	L. leg vein harvest site cellulitis Superficial Infection							
	5/24/2010	5/24/2010	Superficial Fz cervical W	Staph. Aureus	5/24/2010	Cervical Plate & screws	S.A	5/24/2010	Deep Cervical	S.A
			Cellulitis Abd.							

Theofilos Faro Platt & Klein Motta Other SSIs

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# Line Listing Data Collection

SSIs 3 - Microsoft Excel

Home Insert Page Layout Formulas Data Review View Acrobat

Clipboard: Cut, Copy, Paste, Format Painter

Font: Calibri, 11, Bold, Italic, Underline, Text Color, Background Color

Alignment: Wrap Text, Merge & Center

Number: General, Currency, Percentage, Increase/Decrease Decimal Places

Styles: Conditional Formatting, Format as Table, Cell Styles

Cells: Insert, Delete, Format

Editing: AutoSum, Fill, Clear, Sort & Filter, Find & Select

AJ5

OTHER SSIs									
	Cultures Date	Site Cultured	Culture Results	Cultures Date	Site Cultured	Culture Results	Cultures Date	Site Cultured	Culture Results
1									
2									
3	2/23/2010	Wound	Serratia	2/27/2010	Sternum	Serratia	NA	NA	NA
4	No cultures Rtn to OR for perforation	L. leg vein harvest site cellulitis Superficial Infection							
5	5/24/2010	Superficial Fw cervical W	Staph. Aureus	5/24/2010	Cervical Plate & screws	S.A.	5/24/2010	Deep Cervical	S.A.
6		Cellulitis Abd.							

Ready Page: 10 of 12

Surveillance of In... Surveillance FL C... Inbox - Microsoft... Palm Beach Gard... Search Results: in... Microsoft Excel - ... 1:39 AM

# Surveillance Data Collection Form LTC

Form1\_6\_Respiratory.pdf - Adobe Acrobat Professional

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1 (1 of 1) 66.7% Find

INFECTION SURVEILLANCE – RESPIRATORY TRACT INFECTION		
Resident Name _____		Medical Rec. # _____
Unit _____		Room # _____
Date Infection Was Noted _____		Admission Date _____
RESPIRATORY TRACT INFECTION (CHECK BOXES ONLY AFTER CRITERIA HAVE BEEN MET)		
INFECTION/SITE	CRITERIA	CONDITIONS & COMMENTS
<input type="checkbox"/> Common Cold Syndrome	MUST HAVE at least 2 of the following: <input type="checkbox"/> runny nose or sneezing <input type="checkbox"/> stuffy nose (nasal congestion) <input type="checkbox"/> sore throat or hoarseness or difficulty swallowing <input type="checkbox"/> dry cough <input type="checkbox"/> swollen or tender glands in neck (cervical lymphadenopathy)	Fever (may or may not be present). Symptoms must be acute and not caused by allergy (seasonal or medication).
<input type="checkbox"/> Influenza-like illness Did patient/resident receive influenza vaccine before or during this flu season? Circle one: Yes No	MUST HAVE <input type="checkbox"/> fever >100°F taken at any site MUST HAVE at least 3 of the following: <input type="checkbox"/> chills <input type="checkbox"/> Malaise or loss of appetite <input type="checkbox"/> headache or eye pain <input type="checkbox"/> sore throat <input type="checkbox"/> myalgias (muscle aches) <input type="checkbox"/> dry cough	This diagnosis can be made only during influenza season (November to April). During this season, if criteria for influenza-like illness and another upper- or lower-respiratory tract infection are met at the same time, only the diagnosis of influenza-like illness should be recorded.
<input type="checkbox"/> Pneumonia Chest x-ray result:  Aspiration Pneumonia: Circle one: Yes No	MUST HAVE <input type="checkbox"/> chest x-ray demonstrating pneumonia, probable pneumonia or infiltrate MUST HAVE at least 2 of the following: <input type="checkbox"/> cough <input type="checkbox"/> fever >100°F <input type="checkbox"/> increased sputum production <input type="checkbox"/> pleuritic chest pain <input type="checkbox"/> rales, rhonchi, wheezes <input type="checkbox"/> one or more of: new shortness of breath, increased respiratory rate (>25/min.), worsening of mental or functional status.	Noninfectious causes of symptoms must be ruled out in particular, congestive heart failure is a common cause of symptoms and signs similar to those of respiratory infection.  NOTE: This diagnosis can be made only if chest x-ray was done.
<input type="checkbox"/> Other Lower-Respiratory tract infections (bronchitis, tracheobronchitis)	MUST HAVE at least 3 of the following: <input type="checkbox"/> cough <input type="checkbox"/> fever >100°F <input type="checkbox"/> new or increased sputum production <input type="checkbox"/> one or more of: new shortness of breath, increased respiratory rate (>25/min.), worsening of mental or functional status. <input type="checkbox"/> pleuritic chest pain <input type="checkbox"/> rales, rhonchi, wheezes on chest exam <input type="checkbox"/> organism isolated from culture obtained by deep tracheal aspirated or bronchoscopy	This diagnosis can be made only if no chest x-ray was done, or if an x-ray did not confirm the presence of pneumonia.
Antibiotics Ordered: <input type="checkbox"/> Yes <input type="checkbox"/> No List Antibiotics Ordered: _____ _____ Signature of person preparing this form: _____		

# Surveillance Data Collection Form LTC

Form1\_7\_UrinaryTract.pdf - Adobe Acrobat Professional

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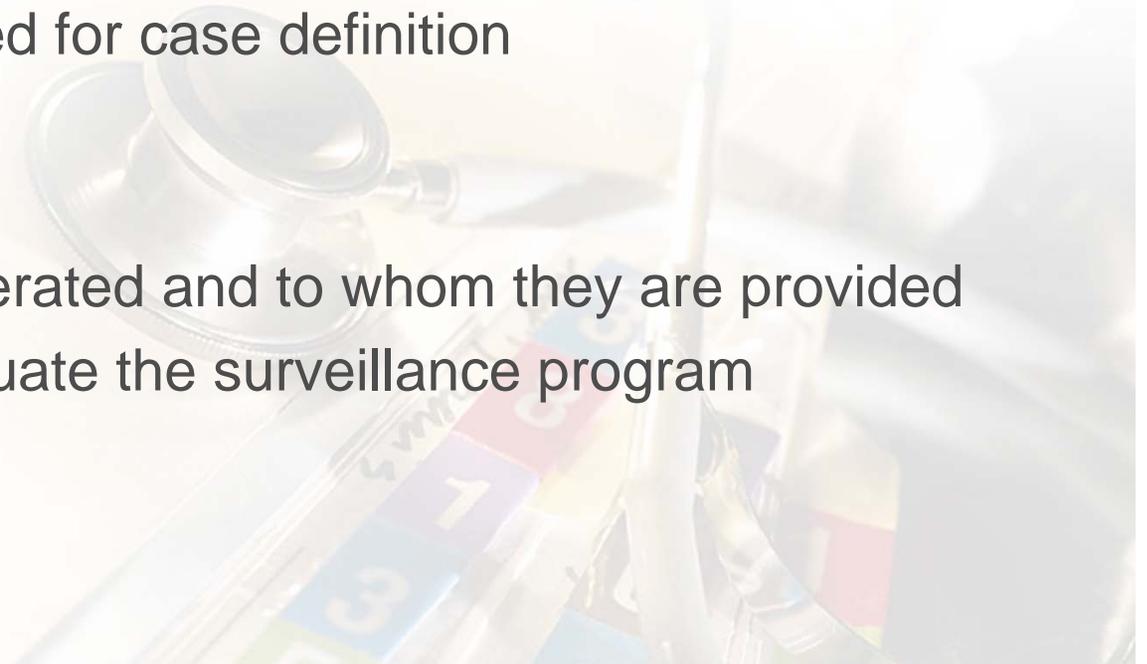
1 (1 of 1) 66.7% Find

INFECTION SURVEILLANCE – URINARY TRACT INFECTION		
Resident Name _____		Medical Rec. # _____
Unit _____		Room # _____
Date Infection Was Noted _____		Admission Date _____
URINARY TRACT INFECTION (CHECK BOXES ONLY AFTER CRITERIA HAVE BEEN MET)		
INFECTION/SITE	CRITERIA	CONDITIONS & COMMENTS
<input type="checkbox"/> UTI in patient/resident WITHOUT Catheter  ORGANISM FOUND ON CULTURE:	MUST HAVE at least 2 of the following: <input type="checkbox"/> fever >100°F or chills <input type="checkbox"/> burning pain on urination, frequency or urgency <input type="checkbox"/> flank or suprapubic pain or tenderness <input type="checkbox"/> change in character of urine <input type="checkbox"/> worsening of mental or functional status (may be new or increased incontinence) <input type="checkbox"/> urine culture with >100,000 colonies/ml of single uropathogen in patient/resident on appropriate antimicrobial therapy	This category includes only symptomatic urinary tract infections. Because many patients/residents have bacteria in their urine as a baseline status surveillance for asymptomatic. Bacteriuria is not recommended. Organisms that cause UTIs include E. Coli, Enterobacter spp, Klebsiella spp, Proteus spp, Pseudomonas spp, Providencia spp, Serratia marcescens, Staph aureus spp, Coagulase negative Staphylococcus spp, Enterococcus spp, Candida. NOTE: If any other organism is found in the urine specimen it is NOT a UTL.
<input type="checkbox"/> UTI in patient/resident WITH Catheter  ORGANISM FOUND ON CULTURE:	MUST HAVE at least 2 of the following: <input type="checkbox"/> fever >100°F or chills <input type="checkbox"/> flank or suprapubic pain or tenderness <input type="checkbox"/> change in character of urine <input type="checkbox"/> worsening of mental or functional status (may be new or increased incontinence) <input type="checkbox"/> urine culture with >10,000 colonies/ml of single uropathogen in patient/resident on appropriate antimicrobial therapy	Because the most common occult infectious source of fever in catheterized patients/residents is the urinary tract, the combination of fever and worsening of mental or functional status in such patients/residents meets the criteria for the UTI. However, care should be taken to rule out other causes of these symptoms if a catheterized patient/resident with only fever and worsening mental or functional status meets criteria for infection at site other than the urinary tract, only the diagnosis of infection at this other site should be made. Organisms that cause UTIs include E. Coli, Enterobacter spp, Klebsiella spp, Proteus spp, Pseudomonas spp, Providencia spp, Serratia marcescens, Staph aureus spp, Coagulase negative Staphylococcus spp, Enterococcus spp, Candida. NOTE: If any other organism is found in the urine specimen it is NOT a UTL.
Antibiotics Ordered: <input type="checkbox"/> Yes <input type="checkbox"/> No		
List Antibiotics Ordered: _____		
Signature of person preparing this form: _____		



# Written Surveillance Plan

- Describe
  - Type of healthcare setting
  - Services provided and populations served
  - The surveillance program purpose, goals, and objectives
  - 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





# Evaluation of Surveillance Program

- Evaluate:
  - 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
    - Access to email and the internet
    - Need for secretarial, computer, or lab support



# 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.
- 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/>





# 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 and intentionally released pathogens 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.