The New #1 HAI and How to Prevent It

December 5, 2018
12:00 pm – 1:00 pm PST

Barbara Quinn, MSN, ACNS-BC
Director, Professional Practice & Nursing Excellence
Office of Patient Experience
Sutter Health
Moderator

Claire Manneh
Director of Programs
CHPSO, a Division of the Hospital Quality Institute
Housekeeping Items

- All lines will be muted. Raise your hand if you wish to be unmuted.
- The presentation slides and recording will be available within 1-3 business days.
- 1 CE unit will be provided to CHPSO/HQI/CHA Members:
  - Complete the [survey](#) by December 12, 2018
  - CE certs will be emailed by December 17, 2018
How to ask a question
The New #1 HAI and How to Prevent It

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SUTTER HEALTH SYSTEM OFFICE
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Department of Veterans Affairs

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(hons)  
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Middleborough, United Kingdom  
Institute for Cellular Medicine  
Newcastle University, Newcastle upon Tyne  
United Kingdom
1. Describe the significance of NVHAP.

2. Discuss how prevention of NVHAP is based on addressing patients’ modifiable risk factors.

3. Name one action you can take tomorrow to move NVHAP into the patient safety conversation.
May is a 57 year old grandmother who develops non-ventilator associated hospital acquired pneumonia (NV-HAP).

- entered hospital for restoration of health and did not survive her hospital care due to NV-HAP

Why does this keep happening?
Non-Ventilator Hospital-Acquired Pneumonia (NV-HAP)

1. Our journey with NV-HAP, patient safety
2. Review of current literature
3. How NV-HAP can be prevented

What you can do to prevent pneumonia, in all care settings
Incidence of NV-HAP:
Three hospital systems study (2012 used 2010 data)
similar results from Kaiser and the VA

Sutter Medical Center: 2010
- 24,482 patients; 94,247 patient days
- 1.25/1000 pt days & 0.49/100 pts
- 115 cases NV-HAP

Total estimated annual impact:
- $4.6 million
- 23 deaths
- 1035 days

Incidence: How common is NV-HAP?
- 1 in every 4 hospital infections is pneumonia \textit{(CDC 2017)}
- 2/3 of these are NV-HAP

Associated Mortality: How many patients may die?
- 15.5 to 30.9\% \textit{(Davis, Micek, Quinn, Baker, Giuliani)}
- 8.5X more likely to die than those who do not acquired PNA \textit{(Micek et al. 2016)}

Morbidity: What other harm besides death?
- Increases hospital stay by 7-9 days \textit{(Micek, Giuliani, Baker)}
- #1 cause of sepsis \textit{(Angus, 2013 NEJM; Mayr, 2014 Virulence)}
- Increases incidence of long-term care post discharge \textit{(Baker & Quinn)}

Cost: How many healthcare dollars are being spent?
- Overuse of antibiotics for a potentially preventable infection
- $28K - $43K per case
- 10\% of all Medicaid hospital dollars (unpublished data)
- Readmissions (20\%); ICU utilization (46\%); Long term care (25\%)

Our journey over the last 7 years: More and more literature in the scientific journals.
Changes in Prevalence of Health Care–Associated Infections in U.S. Hospitals

A Comparison of the Mortality Risk Associated With Ventilator-Acquired Bacterial Pneumonia and Nonventilator ICU-Acquired Bacterial Pneumonia

Wafa Ibn Saied, MD1-3; Bruno Mourvillier, MD1,4; Yves Cohen, MD5,6; Stephane Ruckly, MSc1,7; Jean Reignier, MD, PhD8; Guillaume Marcotte, MD9; Shidasp Siami, MD, PhD10; Lila Bouadma, MD, PhD1,4; Michael Darmon, MD, PhD11,12; Etienne de Montmollin, MD13; Laurent Argaud, MD, PhD14; Hatem Kallel, MD15; Maité Garrouste-Orgeas, MD1,16,17; Lilia Soufir, MD16,17; Carole Schwebel, MD, PhD18; Bertrand Souweine, MD, PhD19; Dany Glodgran-Toledano, MD20; Laurent Papazian, MD, PhD21; Jean-François Timsit, MD, PhD1,4,7; on behalf of the OUTCOMEREA Study Group
Centers for Disease Control and Prevention

2016 Included HAIs first time in its *top TEN public health* concerns:

**JUST released - Nov. 1, 2018 NEJM**

CDC’s Magill et al. (2018). New point-prevalence study on HAIs

**HAP #1 HAI with NV-HAP 60%**

Making NV-HAP #1 HAI in US hospitals

1 in 4 hospital-acquired infections
<table>
<thead>
<tr>
<th>Study</th>
<th>Incidence/ Cases</th>
<th>Contributed to Mortality (%)</th>
<th>+LOS (Days)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Davis, J. &amp; Finley E. ERIC Penn Safety Authority (2012)</td>
<td>1,620</td>
<td>18.9%</td>
<td>Not queried</td>
<td>Total cost all cases $47,462,290 Per case $29,297</td>
</tr>
<tr>
<td>Davis, J. &amp; Finley E. (2018)</td>
<td>1,380</td>
<td>22.5%</td>
<td>* 6 years later Still a serious patient safety issue</td>
<td>Total cost all cases $42,259,340 Per case $30,622</td>
</tr>
<tr>
<td>Magill et al. Point Prevalence Study CDC NEJM 2014, 2018</td>
<td>(2014) PNA 21.8% of all HAIs (2018) PNA 25%</td>
<td>PNA prevalence increased percentage of HAI cases</td>
<td>* 4 years later Still a serious patient safety issue</td>
<td></td>
</tr>
<tr>
<td>Micek, Chew, Hampton &amp; Kollef (2016)</td>
<td>174 cases NV-HAP Matched controls equally sick patients</td>
<td>15.5% vs. 1.6% 8.4 X more likely to die</td>
<td>15.9 vs. 4.4 Equally sick acquire NV-HAP vs. Not</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Incidence/ Cases</td>
<td>Mortality (%)</td>
<td>+LOS (Days)</td>
<td>Cost</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td>---------------</td>
<td>-------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>See et al. (2016)</td>
<td>Retrospective review 8 hospitals in PA 2011-2012 VAP excluded 30% of 838 cases reviewed by CDC epidemiologists</td>
<td>30.9%</td>
<td></td>
<td>Note: verified that ICD data was reasonably reliable to monitoring incidence</td>
</tr>
<tr>
<td>Giuliani, Baker, Quinn (2018) 2012 HCUP Database</td>
<td>3.63/1,000 pt/days (overall incidence 1.6%)</td>
<td>14.5%</td>
<td>4</td>
<td>$36,400 $14.5B total vs. $1.3B VAP (2012 data)</td>
</tr>
<tr>
<td>Baker &amp; Quinn, HAPPI-2 Incidence Study (2018)</td>
<td>Nationwide study 21 hospital sample of 2014 data</td>
<td>16%</td>
<td>7.9</td>
<td>ICU utilization Readmissions Morbidity</td>
</tr>
<tr>
<td>NVHAP Impact on Medicaid Patients (DentaQuest unpublished data)</td>
<td>3.29% vs. 0.02% VAP</td>
<td>17.9%</td>
<td>6</td>
<td>$43K /case $1.6B 10% Medicaid dollars</td>
</tr>
</tbody>
</table>
### What is on your Q&S dashboard?

**How is your hospital doing?**

<table>
<thead>
<tr>
<th>Type</th>
<th>Prevalence (% of total HAIs) 2014 vs. 2018</th>
<th>Associated Mortality (%)</th>
<th>Est. Cost ($K/ per case ) Various sources data</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAUTI</td>
<td>9%</td>
<td>1.5%</td>
<td>$1,108</td>
</tr>
<tr>
<td></td>
<td>5.6%*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLABSI</td>
<td>8.6%</td>
<td>12%</td>
<td>$33,618</td>
</tr>
<tr>
<td></td>
<td>8.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SSI</td>
<td>22%</td>
<td>3%</td>
<td>$19,305</td>
</tr>
<tr>
<td></td>
<td>16%*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP</td>
<td>22%</td>
<td>16 to 30%</td>
<td>$30-40,000</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Magill et al (2014 & 2018) CDC’s Point Prevalence Study US HAI: NEJM* *statistically significant decrease based CI comparisons*
Is pneumonia part of the sepsis picture?

<table>
<thead>
<tr>
<th>Site of infection</th>
<th>Frequency %</th>
<th></th>
<th>Mortality %</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Respiratory</td>
<td>41.8</td>
<td>35.8</td>
<td>22.0</td>
<td>22.0</td>
</tr>
<tr>
<td>Bacteremia</td>
<td>21.0</td>
<td>20.0</td>
<td>33.5</td>
<td>34.9</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>10.3</td>
<td>18.0</td>
<td>8.6</td>
<td>7.8</td>
</tr>
<tr>
<td>Abdominal</td>
<td>8.6</td>
<td>8.1</td>
<td>9.8</td>
<td>10.6</td>
</tr>
<tr>
<td>Device related</td>
<td>1.2</td>
<td>1.0</td>
<td>9.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Wound/ soft tissue</td>
<td>9.0</td>
<td>7.5</td>
<td>9.4</td>
<td>11.7</td>
</tr>
<tr>
<td>Central nervous system</td>
<td>0.7</td>
<td>0.5</td>
<td>17.3</td>
<td>17.5</td>
</tr>
<tr>
<td>Endocarditis</td>
<td>0.9</td>
<td>0.5</td>
<td>23.8</td>
<td>28.1</td>
</tr>
<tr>
<td>Other/ unspecified</td>
<td>6.7</td>
<td>8.6</td>
<td>7.6</td>
<td>6.5</td>
</tr>
</tbody>
</table>

30-50% of sepsis cases may initiate with pneumonia

Angus, 2013, NEJM, p.841
Myth Buster
Who is “at-risk” for NV-HAP?

Common bias...“Oh well, pneumonia just happens, nothing much we can (or should) do about it”, “It is something that the elderly get, you know, just at the end of life”

Myth Busters:

NV-HAP occurs on all types of:
- patients
- hospital units
- hospitals

NV-HAP occurs 51% of the time in patients under 65 years of age
NV-HAP occurs in healthy adults admitted for restoration of health

❖ This means – that while some patients have more risk than others, all patients, on all type of units, in all types of hospitals are at some risk!

Patients are lacking *daily host protection* from pneumonia (e.g., oral care, mobility, consistent tube care protocols, etc.).

**Infection Control Principal #1 – primary source control**

to contain infections
PNEUMONIA CAN BE PREVENTED
“Identify the most modifiable risk factors and develop prevention programs to address them.” (CDC, 2003)

**Germs**
- Reduce harmful pathogens with:
  - Comprehensive oral care
  - * applies to all patients/ most modifiable

**Aspiration**
- Reduce aspiration with:
  - Swallow evaluation
  - HOB elevated
  - Tube Care

**Host**
- Increase host resistance with:
  - Early mobility  Keep patients warm during surgery
  - Pulmonary toilet
  - Limit use of acid suppressive meds

Prevent HAP

“Identify the most modifiable risk factors and develop prevention programs to address them.” (CDC, 2003)

Germs
- Reduce harmful pathogens with:
  - Comprehensive oral care
  
Host
- Increase host resistance with:
  - Early mobility
  - Keep patients warm during surgery
  - Pulmonary toilet
  - Limit use of acid suppressive meds

Source Control

Prevent HAP

Micro-aspirations

Healthy adults micro-aspirate

Elevating the head of the bed does not prevent all aspiration or micro-aspirations

Germs have direct anatomical access to the lung


Why oral care as a primary prevention?

**SOURCE CONTROL** – first principal of infection control

Risk factor- all patients have some risk
- impacts the **most patients**
  *(including ICU patients not on the vent)*

Has the **most EVIDENCE** of efficacy in literature

**MOST MODIFIABLE RISK FACTOR**
requires an interprofessional approach
Most Pneumonia Starts in the Mouth

Microbiome of Oral Cavity
- 200 billion oral microbes
- 700 - 1000 species

Disruption of Microbiome
- Risk with hospitalization
- Changes in saliva pH and production
  - 48 hours for HAP pathogens in mouth
  - If aspirated = 100,000,000 bacteria/mL saliva into lungs
  - PLUS – MICROASPIRATIONS

http://helios.bto.ed.ac.uk/bto/microbes/biofilm.htm / Loesche, W. 2012/
80% of all infections are caused by Biofilm
Infection Control Principal #2:
Clean the surface first
Mechanical removal of biofilm (plaque) = tooth brushing

Double Whammy

In addition to germs growing...
Germ colonies develop chemical communication to secrete proinflammatory cytokines that reduce immune response

Kellum et al 2007
Understanding inflame cytokine response in PNA and sepsis
GenIMS Arch Intern Med. 2007;167(15):1655-1663
Oral hygiene—best bet so far in prevention of NV-HAP

- **Sjogren et al. 2008**
  - Systematic review - Mechanical oral hygiene has a clinically relative preventive effect on pneumonia; prevents pneumonia and death

- **Passaro et al. 2016 (6 studies)**
  - Systematic review - Oral hygiene most effective to prevent HAP compared to other interventions

- **Pederson et al. 2016**
  - Perioperative oral hygiene was found to reduce both nosocomial pneumonia and surgical site infections

- **Lyons & Kollef 2018**
  - Review of interventions to prevent pneumonia. Prevention of HAP – so far with knowledge most likely intervention to decrease HAP but variety of oral care methods tested.
HOWEVER - Patients experience “missed care” *this means they are at risk of a HAI*

Staff perception, Patient perception, Lack of documentation alignment

4 most frequently missed care reported by patients:
- Mouth care
- Bathing
- Ambulation
- Getting from bed to chair

Baker & Quinn (2018). AJIC
A Pneumonia Prevention Story
Sutter Medial Center, Sacramento

Figure 1: Statistical process control R and X-bar-charts:
International Statistical Classification of Diseases and Related Health Problems (ICD) codes (3 standard deviations)
SMC Post operative NV-HAP (all adult inpatient surgery)
Incidence 6 months pre oral care vs. 6 months after

Mar - July 2014: 11
Aug - Jan 2015: 3
Avoided 164 cases of NV-HAP

- 31 lives saved
- $5.9 million not spent
- 656-1476 hospital days avoided

More importantly, odds are much higher that May would go back home to her family.
Salem VAMC CLC Outcomes
Estimated cost avoidance of $1.3M in 9 months
5.8 lives saved. 89% improvement.

Control chart for NV-HAP on Community Living Center Units

Oral Care Intervention began Oct. 2016

Previous average 4 cases per month on CLC units.
“I don’t mind change; I just don’t like to be changed.”
Get Baseline Data

**NVHAP**

1. Surveillance of ICD10 data (pna NPOA) + NHSN
2. Surveillance of ICD10 data (Directional)
3. Unit surveillance
4. Prevalence study

**ORAL CARE FREQUENCY**

1. Audits over time
2. EMR oral care report
Construct a ROI

# NVHAP cases avoided (@$40K each)
Minus costs for equipment & training
Equals ROI

10 NVHAP cases avoided + $400,000
Cost for new equipment - $5,000
Cost for training staff - $40,000

= $355,000 saved

Don’t Forget Other Benefits:
2 Lives saved
2 Readmissions avoided
4 Sepsis cases avoided
70 Hospital days
3 ICU stays
## Perform a Gap Analysis

<table>
<thead>
<tr>
<th>Best Practice</th>
<th>Our Gaps</th>
<th>Action To Take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive oral care for all (CDC, SHEA)</td>
<td>ICU vent patients only</td>
<td>Develop inclusive oral care protocol</td>
</tr>
<tr>
<td>Oral CHG (0.12%) periop adult CV surgery and vent pts. (CDC, ATS, IHI)</td>
<td>Not using CHG on these patients</td>
<td>Added to physician orders and to protocol</td>
</tr>
<tr>
<td>Therapeutic oral care tools (ADA)</td>
<td>Poor quality oral care tools. Absence of denture care supplies.</td>
<td>Upgraded tools and supplies</td>
</tr>
</tbody>
</table>

SHEA = Society for Healthcare Epidemiology of America  
CDC = Centers for Disease Control & Prevention  
ADA= American Dental Association  
IHI= Institute for Healthcare Improvement
Revise Oral Care Policy

Oral Care Policy, Adults

Oral Care – Adults

PURPOSE
To give guidance and direction for the provision of oral care for adult patients in the acute care setting.

SUPPORTIVE DATA:
There is a direct association between the pathogens growing in the mouth and a patient developing systemic health problems. Within 48 hours of admission to the hospital, the normal flora present in the mouth and throat changes to more virulent pathogens, including those that can cause pneumonia.
Invest in Evidence-Based Oral Care Equipment

**Soft-bristled tooth brush**

**Toothpaste** with dentifrice (removes biofilm)
- Fluoride
- Sodium bicarbonate

**Antiseptic mouth rinse** (alcohol-free)
- Hydrogen peroxide
- Ceylpiridium
- *Save chlorhexidine for vent and cardiac surgery patients*

**Moisturizer** for mouth and lips
- Petroleum-free

**Denture care equipment**
- Storage cup, denture cleanser, denture brush, adhesive
<table>
<thead>
<tr>
<th>Patient Type</th>
<th>Tools</th>
<th>Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self Care / Assist</td>
<td>Brush, paste, rinse, moisturizer</td>
<td>Provide tools Brush 1-2 minutes Rinse</td>
<td>4 X / day</td>
</tr>
<tr>
<td>Dependent / Aspiration Risk</td>
<td>Suction toothbrush kit (4)</td>
<td>Brush 1-2 minutes, suctioning as needed.</td>
<td>4 X / day</td>
</tr>
<tr>
<td>Non-vent</td>
<td></td>
<td>Apply moisturizer</td>
<td></td>
</tr>
<tr>
<td>Dependent / Vent</td>
<td>ICU Suction toothbrush kit (6) CHG</td>
<td>Brush/swab 1-2 minutes, suctioning as needed.</td>
<td>6 X / day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Apply moisturizer</td>
<td>CHG 2X / day</td>
</tr>
<tr>
<td>Dentures</td>
<td>Tools + Cleanser Adhesive</td>
<td>Brush dentures with warm water after each meal.</td>
<td>4X / day</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Brush/swab gums, mouth. Remove dentures and soak at night.</td>
<td></td>
</tr>
</tbody>
</table>
64 y.o. male admitted for esophagectomy d/t cancer, s/p chemo. No other medical history. POD 8 pt developed leukocytosis, productive cough, increased work of breathing and O2 demand. CXR “hazy opacity w/ small pleural effusion”. DC home POD 11 on PO abx for NVHAP.
Anticipate & Address Common Barriers

- This will be EASY!
- #1 Not enough time!
  - 80% of adult patients are “self-care”
- Patients refuse
  - Most patients do not know germs in the mouth can cause pneumonia – patient education is key
- Cost of training and new supplies
Invest the most in those who do the work

Unlicensed staff play a critical role
Delegate does not mean, “Not my job” – focus on teamwork
Include ancillary staff and other stakeholders
Didactic and hands-on
Make the Invisible, Visible


http://helios.bto.ed.ac.uk/bto/microbes/biofilm.htm
Utilize Available Resources

https://www.youtube.com/watch?v=gdAesLV5bA
Develop and Provide Patient-Centered Education

The tools to knock out pneumonia

Did you know...
Pneumonia starts in the mouth, and the best way to prevent pneumonia is through good oral care.

Kaiser Permanente is working to educate our patients and families that proper oral care is an important step in preventing pneumonia.

<table>
<thead>
<tr>
<th>Day</th>
<th>Brush</th>
<th>Rinse</th>
<th>Floss</th>
<th>Mouthwash</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tue</td>
<td></td>
<td></td>
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<tr>
<td>Wed</td>
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<td>Fri</td>
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</tr>
<tr>
<td>Sat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sun</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preventing Hospital Acquired Pneumonia Begins with Good Oral Care

Did You Know

The best way to prevent pneumonia is through good oral care. We are working to reduce the number of infections through effective use of new oral care tools:

- A soft toothbrush that won’t harm sensitive gums
- Toothpaste with baking soda that removes plaque
- Antiseptic oral rinse that kills germs
- A moisturizer for dry lips and mouth

What to expect:
Nursing staff will be assisting each patient with oral care after each meal and before bedtime. This is an important part of the plan of care to prevent infection.

- Patients and their families will be educated about the proper methods of oral care to prevent pneumonia
- Nursing staff will be assisting each patient with proper oral care after each meal and before bedtime

How you can help prevent infection:

- Keep moving as much as possible – walk, sit in a chair, turn in bed
- Wash your hands after using the restroom and before each meal
- Use your incentive spirometer (a breathing exercise tool)
- Take deep breaths and cough every 1-2 hours

“We are preventing pneumonia and saving lives, one clean mouth at a time.”

Shared with permission: Bridget McGuiness, Oahu Kaiser
Provide Frequent Feedback to Staff

Oral Care Compliance: ICU, MedSurg

SUTTER MEDICAL CENTER SACRAMENTO

From: 08/01/2018 To: 08/31/2018

<table>
<thead>
<tr>
<th>Department</th>
<th>Pt Days</th>
<th>Oral Care Events</th>
<th>Per Pt: Day</th>
<th>Pt Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAMC ICU CARDIAC</td>
<td>275</td>
<td>1089</td>
<td>4.0</td>
<td>96</td>
</tr>
<tr>
<td>SAMC ICU CARDIOVASCULAR SURGERY</td>
<td>285</td>
<td>989</td>
<td>3.5</td>
<td>105</td>
</tr>
<tr>
<td>SAMC ICU MEDICAL</td>
<td>522</td>
<td>2591</td>
<td>5.0</td>
<td>145</td>
</tr>
<tr>
<td>SAMC ICU NEUROSURG</td>
<td>219</td>
<td>970</td>
<td>4.4</td>
<td>64</td>
</tr>
<tr>
<td>SAMC ICUUCV SURG ANNEX</td>
<td>16</td>
<td>47</td>
<td>2.9</td>
<td>9</td>
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<tr>
<td>SAMC MED ACUTE GYN</td>
<td>836</td>
<td>2752</td>
<td>3.3</td>
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<tr>
<td>SAMC NEURO</td>
<td>599</td>
<td>1460</td>
<td>2.4</td>
<td>204</td>
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<tr>
<td>SAMC NEURO MONITORING</td>
<td>235</td>
<td>526</td>
<td>2.2</td>
<td>81</td>
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<tr>
<td>SAMC ONCOLOGY BMT</td>
<td>721</td>
<td>2140</td>
<td>3.0</td>
<td>135</td>
</tr>
<tr>
<td>SAMC ORTHOACUTE</td>
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<td>971</td>
<td>1.9</td>
<td>179</td>
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<tr>
<td>SAMC SURG ACUTE BARIATRICS</td>
<td>732</td>
<td>2465</td>
<td>3.4</td>
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<tr>
<td>SAMC TELEMETRY CARDIAC CARE</td>
<td>874</td>
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<tr>
<td>SAMC TELEMETRY CARDIO INTERVENTION</td>
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<td>801</td>
<td>2.6</td>
<td>121</td>
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<tr>
<td>SAMC TELEMETRY PROGRESSIVE</td>
<td>404</td>
<td>1057</td>
<td>2.6</td>
<td>134</td>
</tr>
<tr>
<td>Report Totals</td>
<td>6534</td>
<td>19637</td>
<td>3.0</td>
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</table>
Revise EMR Documentation to Support EB Protocol & Reporting

<table>
<thead>
<tr>
<th>Critical</th>
<th>VS Simple</th>
<th>Adult Care Sum</th>
<th>F14</th>
<th>Func/Risk Screen</th>
<th>IP Sepsis Summary</th>
<th>IV/O</th>
<th>Daily Care</th>
<th>Blood &amp;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Func/Risk Screen**

- Braden Risk Assessment
- Fall Risk Assessment
- Pneumonia Risk / Oral Care
- Sepsis Screen - Please Assess...
- Abuse
- Chronic Pain
- Communicable Diseases
- Transdermal Patch Assessment
- Violence Risk Assessment ...
- Danger to Self
- Danger to Others
- Functional/Cognitive Screen...
- Immunizations
- Nutrition/Metabolic
- Skin Review of Systems
- Sleep/Relaxation

**Sensory Perception**

- Moisture
- Activity
- Mobility
- Nutrition
- Friction and Shear

**Braden Score**

**Fall Risk Assessment**

**Fall Risk Indicators**

**Fall Risk Score**

**Pneumonia Risk / Oral Care**

**Oral Care Type**
Socialize & Celebrate!

Program Preventing Pneumonia Thru Oral Care

Preventing Hospital Acquired Pneumonia Begins with Good Oral Care

Brush 2 Times A Day

Did you know brushing your teeth can prevent pneumonia?

Set Up for all Meals

Sign up for more info and learn more at CPMC.com.
"Brushing 4 times a day keeps pneumonia away"

Preventing hospital acquired pneumonia begins with good oral care. Provide oral care to patients everyday after meals and before bedtime. Remember if you don’t document, it didn’t happen! Use the Daily Care or Adult Care Summary flowcharts for documentation.
Tell the Patient Story
How Can HQI/CHPSO Help Prevent NV-HAP?

1. Tell us what kind of support would be helpful.
2. Hospital collaborative?
3. How can reports of NV-HAP incidence be included in CHPSO
4. Sepsis connection to HAP
5. Other?

Contact Info:
Barbara Quinn, RN, MSN, ACNS-BC
QuinnB@sutterhealth.org

Dian Baker PhD, APRN-BC
dibaker@csus.edu
How to ask a question
# Upcoming CHPSO Safe Tables

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 12</td>
<td>10:00 am – 11:00 am PST via teleconference</td>
<td><strong>Surgical Fires</strong></td>
</tr>
</tbody>
</table>
# Upcoming HQI-CHPSO Webinars

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 11</td>
<td>12:00 pm – 1:00 pm PST</td>
<td><em>C. diff Stinks!! An Interdisciplinary Approach to Combatting Hospital Acquired Clostridium difficile</em></td>
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<tr>
<td>January 9</td>
<td>10:00 am – 11:00 am PST</td>
<td><em>Reducing Hospital Acquired Pressure Injuries Through Focusing on the Braden Scale Sub Categories, in a Safety Net Hospital</em></td>
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</tbody>
</table>
HQI 2018 Conference
C. Duane Dauner Quality Award Winner

Sutter Health
HQI’s 2019 Conference

October 14 - 15, 2019
Sacramento
HQL Learning Management System (LMS)

High Reliability

Reliability: Learn It and Live it!

- Foundational Course with 38 brief modules (not more than 3 minutes each)
- Clinical Practice Reliability Course with 22 modules
- Accessible on any browser-enabled device
- Support for learners at all levels of education and experience
- Continuing Education Credits provided upon completion
- Available in English and Spanish (other languages available upon request)
- Contact Barb Spreadbury at bspreadbury@hqinstitute.org
CHPSO has the following opportunities:

- SQL Server DBA and Programmer
- HQI Vice President

There are roles available at other organizations in San Francisco, Stockton, Chula Vista, and La Mesa. Check out the job board and let us know if you would like to post anything at your facility!

http://www.chpso.org/career-opportunities
Follow-up Email

• **Click here** for the survey link
  – Please share potential topics for future meetings
• **CE Information**
• **Slides**
• **Recording**
Thank You!

Follow @CHPSO and @HQInstitute on Twitter!