

Title: Departmental Quality Improvement Using Collaboration to Reduce Pressure Injury

PRESENTERS:

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INTRODUCTION:

Development of unit-acquired pressure injuries (UAPI) results in poor outcomes for the patient and hospital system. Pressure injuries (PI) are associated with pain, increased morbidity and mortality, longer hospital stays, and increased costs. PI prevalence can influence National Database of Nursing Quality Indicators (NDNQI) results and other quality indicators that impact hospital safety ratings and reimbursement. A collaborative approach to prevention of PI is key.

AIM:

The aim of the project was to lower the Johns Hopkins Hospital Surgical Intensive Care Units' (ICU) UAPI prevalence rates, therefore lowering the overall prevalence rate for the department of surgical nursing.

Interventions:

An ICU Pressure Injury Prevention workgroup was established in the surgical ICUs. Through this workgroup, a sharing of ideas, successes and strategies led to the following departmental initiatives. These initiatives included wound champion certification as wound treatment associates (WTA), a needs assessment which resulted in monthly education topics for champions to share with bedside staff, transparency of PI data, discussion of prevention strategies, and collaboration as a department.

Data Collection and Analysis

Data was obtained using the electronic medical record and verified by nurse champions and wound ostomy specialty nurses on a monthly basis for the three surgical ICUs and on a quarterly basis for eight acute care units. Outcome measures for these initiatives were UAPI quarterly prevalence rates obtained from Tableau. Analysis of UAPI prevalence rates revealed rates declined after the development of the collaborative work group and implementation of the initiatives.

RESULTS:

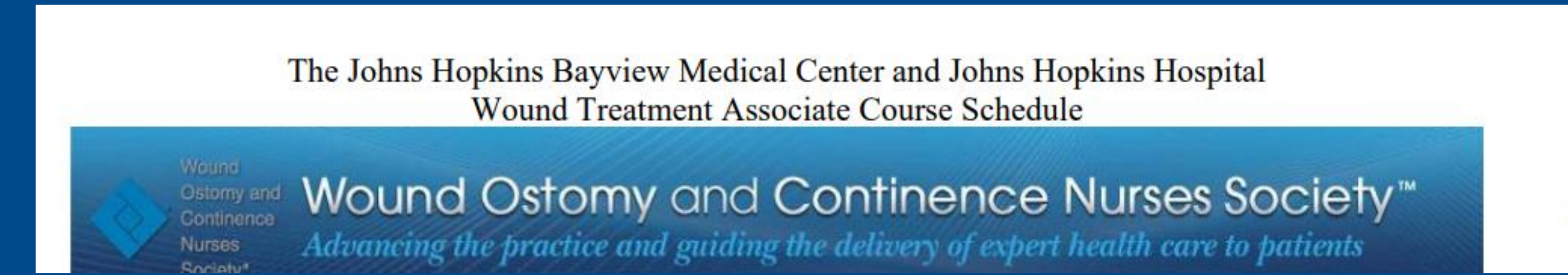
In fiscal year 2019, the department led the hospital in PI prevalence, with 4 out of 11 units having a prevalence rate at 5% or higher. By fiscal year 23, quarter 1, the majority of nursing units were at 0% prevalence, with only 2 units above 5% prevalence. This improvement within the department of surgical nursing units decreased the hospital's pressure injury prevalence rates.

DISCUSSION:

Through development of a committee structure and promotion of training and certification, the department was able to collaborate, educate, and disseminate best practices in wound prevention to 11 nursing units, lowering their pressure injury prevalence and improving patient outcomes. Collaboration among all members of the team was an essential component in facilitating initiatives during the project.

Collaboration Reduces Pressure Injuries

Certification: Wound Treatment Associates: 13



Quarterly Meetings: Wound Care Champions/ CNS/Educator/ WOCN/ Nursing administration

Monthly education projects by unit

ANTIMICROBIALS

VASHE - Available from Surgery WOCN team
Vashe solution contains saline and hypochlorous acid (bleach). Vashe is non-cytotoxic. It is buffered and titrated to match the skin's normal pH of 5.5 so that it causes healthy tissues minimal harm.
Vashe disrupts the protein matrix in microbe biofilms, and can be used to help debride biofilm and slough from wounds.
To use: Moisten gauze with VASHE and leave in place 5-10 minutes as a wound cleanser and pre-dressing agent.
Vashe may also be used to pack wounds.

Hydrogen Peroxide (H2O2) - Available from CSD SAP#23368
When used on a wound, cells will react with H2O2 and convert it to water and oxygen. The bubbling action that occurs lifts debris and breaks the bacterial cell wall. This action is beneficial for initial wound cleaning and first aid, but when used for extended periods of time, it can destroy healthy cells as well as microbes. **Hydrogen Peroxide is NOT** recommended as a therapeutic wound cleanser.

Dakin Solution - Available from pharmacy or by prescription
During World War I, English chemist Henry Dakin and French surgeon Alexis Carrel developed Dakin solution. It was originally used in the battlefield as an antiseptic.
The main ingredient, hypochlorous acid, produces a potent antibacterial effect in tissues.
Use: Moisten gauze with Dakin solution and pack into wound once or twice daily.

January Monthly Wound Education: Anti-Microbials

Name: _____ Date: _____

Beating Biofilm

Antimicrobials Commonly Used in Wound Care

ACROSS

- The antibiotic is commonly found on the skin when it is used to prevent or treat infections. In the wound care setting, it is used to help debride biofilm and slough from wounds.
- This solution is commonly used to clean and prevent bacterial and viral infections in the wound care setting. It is used to help debride biofilm and slough from wounds.
- This solution is commonly used to clean and prevent bacterial and viral infections in the wound care setting. It is used to help debride biofilm and slough from wounds.

DOWN

- This antibiotic is commonly used to treat MRSA wound infections. It is used to help debride biofilm and slough from wounds.
- This solution is commonly used to clean and prevent bacterial and viral infections in the wound care setting. It is used to help debride biofilm and slough from wounds.
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ICU screening tool development

Date: _____ M/NH	
Screen all admitted patients on admission & screen grey factors twice a week on Wednesdays & Sundays .	
If the Patient has any 2 or more major risk factor: And / Or has any 4 or more minor risk factors:	
<input type="checkbox"/> Perfusion issues- Vascular Disease, any type (ex- IHD, CAD, PAD, Surgeries such as microvascular flap)	<input type="checkbox"/> Age ≥75
<input type="checkbox"/> Pre-op ICU stay > 12 hours	<input type="checkbox"/> BMI < 23 or > 40
<input type="checkbox"/> Spinal Cord injury	<input type="checkbox"/> Diabetes Mellitus types 1, 2 or with elevated fasting glucose (> 200...)
<input type="checkbox"/> Transplanted organ surgery on this encounter or current Open Abdomen	<input type="checkbox"/> Expectant OR case ≥ 8 hours
<input type="checkbox"/> Current or previous pressure injury	<input type="checkbox"/> Current smoker or within 5 years
<input type="checkbox"/> SOFA score ≥ 10	<input type="checkbox"/> Incontinence
<input type="checkbox"/> Prolonged Mechanical Ventilation > 4 days	<input type="checkbox"/> Braden Scale ≤ 14 (high risk)
<input type="checkbox"/> Prolonged use of specific vasopressors (norepinephrine or Vasopressin) > 4 days	<input type="checkbox"/> Renal Dysfunction (Cr > 3 mg/dl) or Hemodialysis
<input type="checkbox"/> Presence of devices with prolonged expected duration > 4 days such as NGT, Trachs, ETT, cervical collars, or FRS	<input type="checkbox"/> Reduced Nutrition / Prolonged NPO status or nutritional deficit (No CPN/TF) > 4 days
<input type="checkbox"/> Decreased Mobility- H/M 4 or less (move to chair/commode) > 4 days or baseline assist device.	
<input type="checkbox"/> Specialty bed ordered <input type="checkbox"/> Pressure Injury Prevention (PIP) Bundle initiated	

Customizing the Mepilex Lite (SAP 108871) for device protection:

- Cut into quarters
- Trim a little hole in the center of each quarter
- Cut a slit from edge to the hole
- Place under the skin plate/bumper of the device

CVSICU zero Unit Acquired Pressure Injuries with PI Prevention bundle

Decreased number of surgical units above benchmark for UAPI

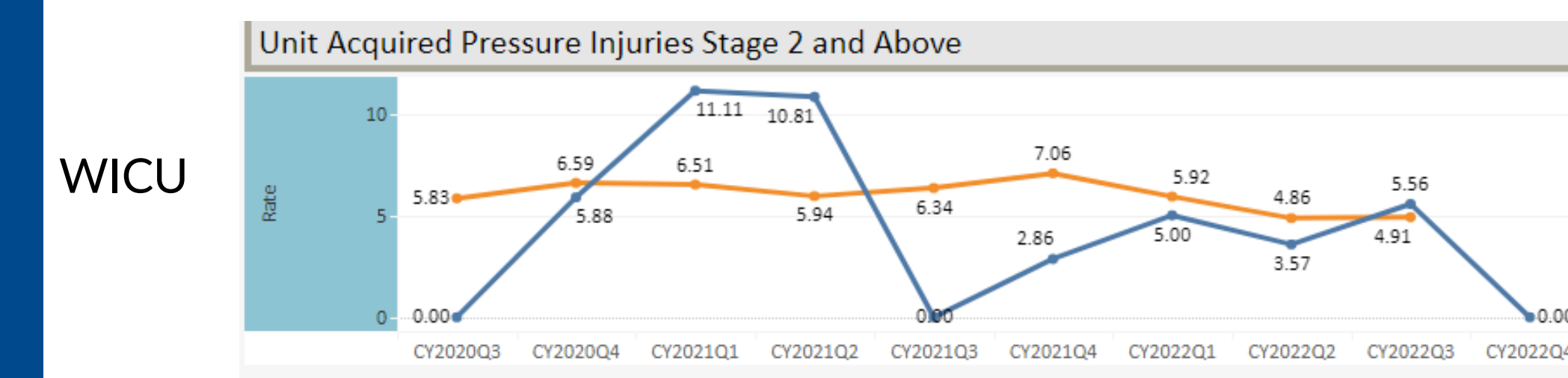
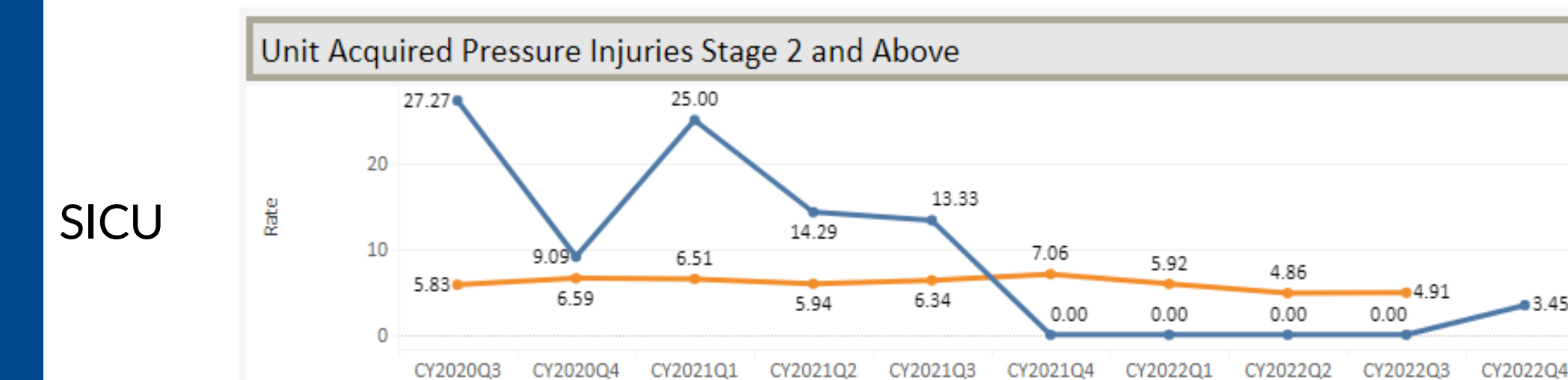
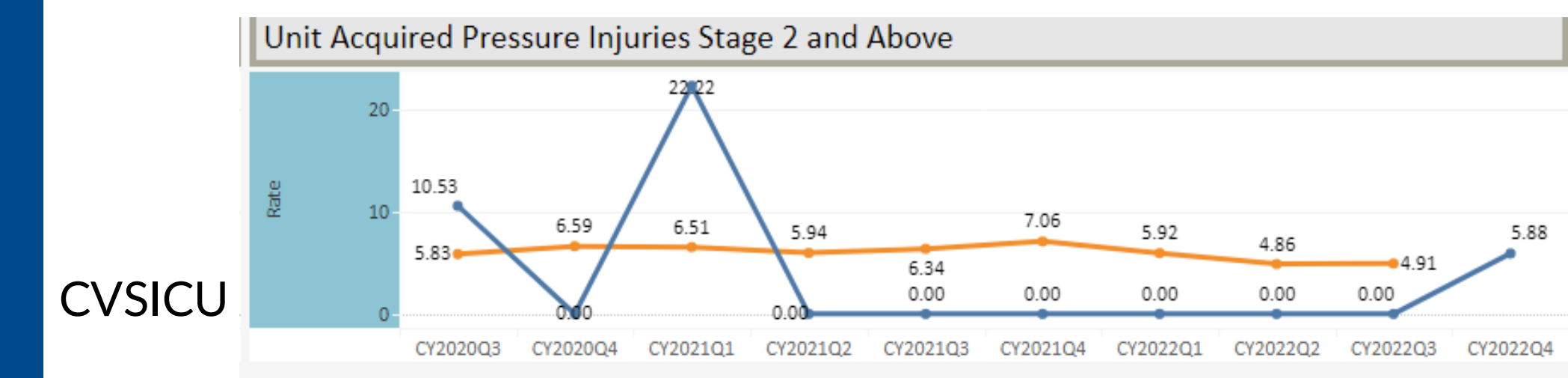


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Results

Due to COVID-19, we did not submit data for CY2020 Q1 and Q2.

Unit Name	CY2020Q4	CY2020Q3	CY2020Q2	CY2020Q1	CY2021Q4	CY2021Q3	CY2021Q2	CY2021Q1	CY2022Q4
Adult Rehab	5.56	0.00	5.56	0.00	0.00	0.00	0.00	5.56	0.00
CVSICU (Zayed 10W)	0.00	0.00	0.00	0.00	0.00	0.00	3.45	3.33	6.67
CVSICU (Zayed SE)	9.09	28.55	17.86	13.33	0.00	7.69	0.00	0.00	6.90
Marburg 2	0.00	0.00	7.14	12.50	0.00	0.00	0.00	0.00	0.00
Marburg Pavilion	0.00	0.00	0.00	7.69	0.00	0.00	0.00	0.00	0.00
SCICU (Zayed SE)	0.00	22.22	0.00	0.00	0.00	0.00	0.00	5.88	5.88
Weinberg ACU	0.00	0.00	2.86	0.00	0.00	2.94	0.00	0.00	0.00
WICU	5.88	19.44	13.51	0.00	5.71	10.00	7.14	7.41	5.56
Zayed SW	0.00	3.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zayed SSE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Zayed 11W	4.35	3.85	0.00	3.33	0.00	0.00	0.00	0.00	0.00



References:

- Ballesteros, C. (2017). Teamwork for prevention: Reducing HAPUs in cardiac surgery patients. *Nursing Management*, 48(7), 17-20. <https://doi.org/10.1097/01.NUMA.0000520731.16668.89.2>
- Cooper, D. N., Jones, S. L.1) Ballesteros, C. (2017). Teamwork for prevention: Reducing HAPUs in cardiac surgery patients. *Nursing Management*, 48(7), 17-20. <https://doi.org/10.1097/01.NUMA.0000520731.16668.89.2>
- Cooper, D. N., Jones, S. L., & Currie, L. A. (2015). Against all odds: Preventing pressure ulcers in high-risk cardiac surgery patients. *Critical Care Nurse*, 35(5), 76-82. <https://doi.org/10.4037/ccn2015434.3>
- Rao, A. D., Preston, A. M., Strauss, R., Stamm, R., & Zalman, D. C. (2016). Risk factors associated with pressure ulcer formation in critically ill cardiac surgery patients. *Journal of Wound, Ostomy & Continence Nursing*, 43(3), 242-247. <https://doi.org/10.1097/WON.0000000000000224>

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