

Clinical Characteristics of Patients with a Positive VZV PCR in the CSF (N=38) July/2017-November/2021

Age (years)	Median (IQR)	47 (38-69)
	≥ 60 years	13 (34.2%)
	< 60 years	25 (65.8%)
Gender	Male	22 (57.9%)
	Female	16 (42.1%)
Race	White	22 (57.9%)
	African American	10 (26.3%)
	Asian	4 (10.5%)
	Other	2 (5.3%)
Clinical Features	Immunocompromised	15 (39.5%)
	Solid organ malignancy	4 (10.6%)
	Liquid malignancy/BMT	2 (5.3%)
	SOT	2 (5.3%)
	AIDS	2 (5.3%)
	Biologic	5 (13.2%)
	Steroids	6 (15.8%)
	CVID	1 (2.6%)
	Pneumonia	6 (15.8%)
	Rash	26 (68.4%)
	Localized Rash	19/26 (73.1%)
	Disseminated Rash	7/26 (26.9%)
	h/o shingrix vaccine	1 (2.6%)

review was performed to gather data regarding clinical presentation, patient characteristics, and risk factors. **Results:** In total, 38 patients were identified who had a PCR positive for VZV in CSF; 22 (57.9%) were male and 16 (42.1%) were female. The median age was 47 years (IQR, 38–69). Also, 15 patients (39.5%) were immunocompromised. Moreover, 26 patients (68.4%) had a rash; 19 (50%) had localized rash; and 7 (18.4%) had disseminated rash involving ≥3 dermatomes. However, 12 patients (31.5%) had neither rash nor pneumonia. Furthermore, 5 patients (13.1%) had PCR positive for VZV in CSF and developed rash within the following 2–7 days (2 with disseminated rash). In addition, 6 patients (15.8%) had pneumonia. Of the 6 patients with pneumonia, 4 (10.5%) were immunocompromised and 3 (7.9%) were above 65-year-old. 32 patients (84.2%) were kept in airborne and contact precautions. 1 (2.6%) patient had a documented record of at least 1 dose of Shingrix vaccine. **Conclusions:** Most patients with a PCR test positive for VZV in the CSF were not immunocompromised and did not have evidence of disseminated rash or pneumonia. The risk of airborne transmission of VZV via small aerosols appears to be low in patients with a PCR test positive for VZV in the CSF without evidence of disseminated rash or pneumonia. Airborne isolation may not be required for many of these patients.

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Presentation Type: Poster Presentation - Poster Presentation
Subject Category: Patient Safety
Evaluation of an oral care bundle for reduction of nonventilator hospital-acquired pneumonia in a community hospital
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Objectives: We sought to determine the relationship between an oral-care bundle that includes use of new oral care devices, education of best practices for performing oral care, and daily audits to measure compliance with oral care best practices and the reduction of nonventilator hospital-acquired pneumonia (NV-HAP) and NV-HAP-associated sepsis and mortality outcomes. **Methods:** Havasu Regional Medical Center (HRMC) is a 171-bed acute-care community hospital in Lake Havasu City, Arizona. The hospital inpatient units measured in this quasi-experimental study were the medical surgical telemetry ortho unit (MTSO), the intermediate care unit (IMC), and the ICU. There were 30,838 hospital patient days in 2021. NV-HAP were captured as patients coded as an NV-HAP and being discharged in 2021. Sepsis was captured as sepsis being documented with the source being identified as a NV-HAP with a discharge date in 2021. Mortality was captured by coding

of an NV-HAP and mortality with a time of death documented in 2021. **Results:** From January 1, 2021, to June 4, 2021, during the baseline period before the oral-care bundle was implemented, HRMC had 12,415 patient days and experienced a NV-HAP rate of 1.2 per 1,000 patient days and a sepsis rate of 0.56 per 1,000 patient days with the source documented as NV-HAP, and mortality rate of 0.32 per 1,000 patient days with a code of NV-HAP. HRMC used June 5, 2021, as their implementation period of the bundle, which included a new oral-care device, multilevel education to staff on best practices for oral care, and daily audits to measure compliance with oral-care best practices. During the postimplementation period, HRMC had 18,413 patient days, a NV-HAP rate of 0.54 per 1,000 patient days, a sepsis rate of 0.33 per 1,000 patient days with source documented as NV-HAP, and a mortality rate of 0.16 per 1,000 patient days with a code for NV-HAP. **Conclusions:** From June 5, 2021, to December 31, 2021, after the implementation of the oral-care bundle, the NV-HAP rate decreased by 58%, the sepsis rate with source documented as NV-HAP decreased by 41%, and the mortality rate documented as NV-HAP decreased by 50%. Hospital infection control programs should consider implementation of a robust oral-care bundle that includes best-practices education and auditing to monitor staff compliance as a potential strategy to reduce NV-HAP.

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Subject Category: Quality Assessment
Development of a human factors-based tool for evaluating and improving infection prevention and control protocols
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Background: Infection prevention and control (IPC) protocols and guidelines are important quality management tools for educating care professionals and standardizing care processes. However, most of the actual care (ie, work as done) differ from protocol recommendations (ie, work as imagined). No tool or set of criteria has been established for how to develop human-centered IPC protocols. The goal of this research was to develop a standardized human-factors analysis method to provide healthcare organizations with a tangible framework to improve protocol usefulness and usability. **Methods:** The proposed analysis method combines principles from human-factors engineering (ie, usability heuristics, systems ambiguity framework) and instructional design. Relevant literature was analyzed by experts in human factors and clinical experts to develop a tool with criteria such as visualization and method ambiguity. Overall, 5 IPC-related protocols from a large academic hospital were selected from an electronic database and were evaluated using the proposed criteria. **Results:** During application of the analysis method, 70 human-factors-related problems were identified across 5 IPC protocols (eg, heater

Image 1: Sample of HF problems and suggested solutions

HF Problem	Relevant HFE Principle(s)	Suggested Solution
Protocol instructs that contaminated disposable items should be placed in "appropriate trash bags.", unclear to the reader what constitutes an appropriate trash bag and where to obtain one.	Visualization Method Ambiguity	Add image to Environmental Cleaning, O.R. and Procedural Areas protocol of "appropriate trash bag". Include instruction on where one can obtain the "appropriate trash bag" to dispose of contaminated disposable items.
Protocol references using a screening tool to determine if staff have been screened to use a respiratory protection device, but no link to screening tool or information on where to find screening tool is provided.	Help/Documentation Method Ambiguity	Add reference link to where screening tool is located.