

Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: COVID-19

Care innovations and health disparities: An exploration of COVID-19 outcomes in inpatient and hospital-at-home care settings

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Background: Hospital at home (HaH) programs have been a critical resource for providing inpatient care to acutely ill patients throughout the COVID-19 pandemic. Given that this innovative care delivery model relies on technology and environmental concerns, questions have been raised about the effectiveness of HaH for vulnerable groups. However, evidence is extremely limited regarding equity issues in the HaH context. Thus, we explored COVID-19 outcomes within vulnerable groups. **Methods:** We conducted a matched, retrospective study of 116 acutely ill patients with COVID-19, aged ≥18 years, who presented to an AH emergency department (ED) and were admitted for inpatient care. Treatment patients were admitted to AH HaH between July 15 and September 31, 2020, and control patients were hospitalized between May 8 and June 25, 2020. Patients were matched based on oxygen requirement and DS CRB-65 (DEFINE) score. Race or ethnicity and area deprivation index (ADI) were chosen as predictors of health disparities. The ADI incorporates 17 indicators of poverty, educational attainment, and housing quality at the census tract level. Outcomes included 30-day (from discharge) severe illness or death composite, IP readmission, and ED visit. **Results:** The frequency of 30-day severe illness or death and ED visits were equivalent between the groups (n = 11; ED n = 5); the proportion of severe illness was higher for White patients in AH-HaH (n = 9 vs n = 5), and for Hispanic patients treated in the hospital (n = 5 vs n = 0; Fig. 1). There were no 30-day inpatient readmissions in the AH-HaH group, but 8 readmissions occurred with inpatients. The distribution of severe illness among the ADI quintiles varied. For traditional inpatients, disease progression was limited to ADI Q3–5 (Q3 = 3, Q4 = 6, Q5 = 2); for AH-HaH patients, disease progression was not influenced by ADI. The effect of ADI on 30-day ED readmission was nonsignificant. **Conclusions:** Although exploratory in nature, the results suggest that HaH may help combat sources of health disparities that have dominated the pandemic. Although inpatient care resulted in inpatient readmissions, mainly among Black and Hispanic patients, AH-HaH stays were not associated with any inpatient readmissions. The equivalent distribution among ADI quintiles of patients who became severely ill within 30 days of their AH-HaH stay suggests that HaH may be able to leverage innovation to reach vulnerable populations and reduce the impact of factors that contribute to inequity.

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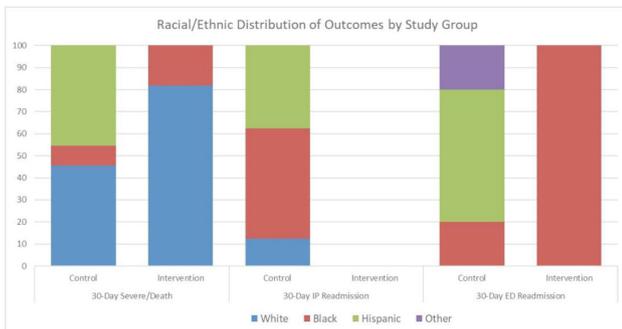


Fig. 1.

Presentation Type:

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Subject Category: Decolonization Strategies

Indwelling medical devices and skin microorganisms on ICU patients bathed with chlorhexidine gluconate

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Background: Bathing ICU patients with chlorhexidine gluconate (CHG) decreases bloodstream infections and multidrug-resistant organism transmission. The efficacy of CHG bathing on skin microorganism reduction may be influenced by patient-level clinical factors. We assessed the impact of clinical factors on the recovery of microorganisms from the skin of patients admitted to an ICU who were receiving routine CHG bathing. **Methods:** We analyzed data obtained from 6 single-day point-prevalence surveys of adult ICU patients between January and October 2018 at 1 medical ICU, in the context of a CHG bathing quality initiative. Demographics and covariates were collected at the bedside and by chart review. Skin swabs were collected from neck, axilla, and inguinal regions and were plated to selective and nonselective media. Standard microbiologic methods were used for species identification and susceptibilities. Multivariable models included patients who received a CHG bath and accounted for clustering of body sites within patients. **Results:** Across all time points, 144 patients participated, yielding 429 skin swab samples. Mean age was 57 years (SD, 17); 49% were male; 44% had a central venous catheter; and 15% had a tracheostomy. Also, 140 patients (97%) had >1 CHG bath prior to skin swab collection, with a median of 9 hours since their last CHG bath (IQR, 6–13 hours). Gram-positive bacteria were more commonly recovered than gram-negative or *Candida* spp across all skin sites (Table 1). Variation by body site was detected only for gram-positive bacteria, with recovery more common from the neck compared to axilla or groin sites. On multivariate logistic regression (Table 2), presence of central venous catheter was associated with lower odds of gram-positive bacteria recovery

Table 1. Microorganism Detection on Skin of Medical Intensive Care Unit Patients

	Body Site			Patients (n=144)
	Neck (n=143)	Axilla (n=143)	Inguinal (n=143)	
Organism Type (n, %)				
Gram-positive bacteria	115 (80)	85 (59)	76 (53)	128 (89)
Gram-negative bacteria	10 (7)	8 (6)	10 (7)	22 (15)
<i>Candida</i> species	16 (11)	12 (8)	23 (16)	39 (27)

Table 2. Adjusted Risk Factors for Microorganism Detection on Skin of Intensive Care Unit Patients (N=140) Bathed with Chlorhexidine Gluconate

Risk Factor	Gram-Positive Bacteria OR (95% CI)	Gram-Negative Bacteria OR (95% CI)	<i>Candida</i> Species OR (95% CI)
Central venous catheter	0.37 (0.20-0.67)	1.18 (0.42-3.31)	1.50 (0.70-3.21)
Tracheostomy	2.37 (0.92-6.15)	4.64 (1.34-16.1)	2.42 (0.82-7.18)
Mechanical ventilation	0.74 (0.36-1.50)	0.96 (0.27-3.42)	0.89 (0.35-2.25)

Bolded values indicate significance with P ≤ 0.05. Model accounted for clustering of body sites (N=417) within patients, adjusting for age, sex, obesity (BMI ≥ 30 kg/m²), body site (neck, axilla, groin), ICU day of swab, hospital day of swab, and hours from last CHG bath. Abbreviations: CHG, chlorhexidine gluconate; CI, confidence interval; ICU, intensive care unit; OR, odds ratio.