Baystate Health

Scholarly Commons @ Baystate Health

Research and Education Celebration 2023 -**Nursing Research Posters**

Presentations and Posters

Summer 2023

Incidence, Mortality, and Cost Trends in Non-Ventilator Hospital-Acquired Pneumonia in Medicaid Beneficiaries, 2015-2019

Karen Giuliano RN University of Massachusetts Amherst

Dian Baker PhD University of Massachusetts Amherst

Follow this and additional works at: https://scholarlycommons.libraryinfo.bhs.org/ nurs_presentations2023



Part of the Medicine and Health Sciences Commons

Recommended Citation

Giuliano, Karen RN and Baker, Dian PhD, "Incidence, Mortality, and Cost Trends in Non-Ventilator Hospital-Acquired Pneumonia in Medicaid Beneficiaries, 2015-2019" (2023). Research and Education Celebration 2023 - Nursing Research Posters. 24.

https://scholarlycommons.libraryinfo.bhs.org/nurs_presentations2023/24

This Book is brought to you for free and open access by the Presentations and Posters at Scholarly Commons @ Baystate Health. It has been accepted for inclusion in Research and Education Celebration 2023 - Nursing Research Posters by an authorized administrator of Scholarly Commons @ Baystate Health.

UMassAmherst

Elaine Marieb Center for Nursing and Engineering Innovation

Incidence, Mortality, and Cost Trends in Non-Ventilator Hospital-Acquired Pneumonia in Medicaid Beneficiaries, 2015-2019

Karen K. Giuliano¹, PhD RN MBA & Dian Baker², PhD, APRN. ¹Co-Director, Elaine Marieb Center for Nursing and Engineering Innovation, University of Massachusetts Amherst; ²Professor Emeritus CSU Sacramento, & DB Consulting LLC

Nonventilator Hospital-Acquired Pneumonia (NVHAP)

What is the Impact of NVHAP?

- Hospital-acquired pneumonia is the most deadly and costly of all the hospital acquired infections - 1 in every 4 hospital acquired infections is pneumonia – Majority are NVHAP (60%)
 NVHAP is found on ALL hospital units – mostly outside the ICU
- NVHAP is now the most common hospital-acquired infection (HAI)
- Antibiotic stewardship: Most common antibiotics starts are associated with respiratory/pneumonia
- Associated mortality=13-30.9%
- 8.4 X more likely to die than equally sick patients who do not get pneumonia
- Less likely to go home after NVHAP = Long term care (25%)
- Associated with 30-day readmissions (19%) and increased ICU utilization (46%)
- Respiratory infection/pneumonia: most common cause of sepsis

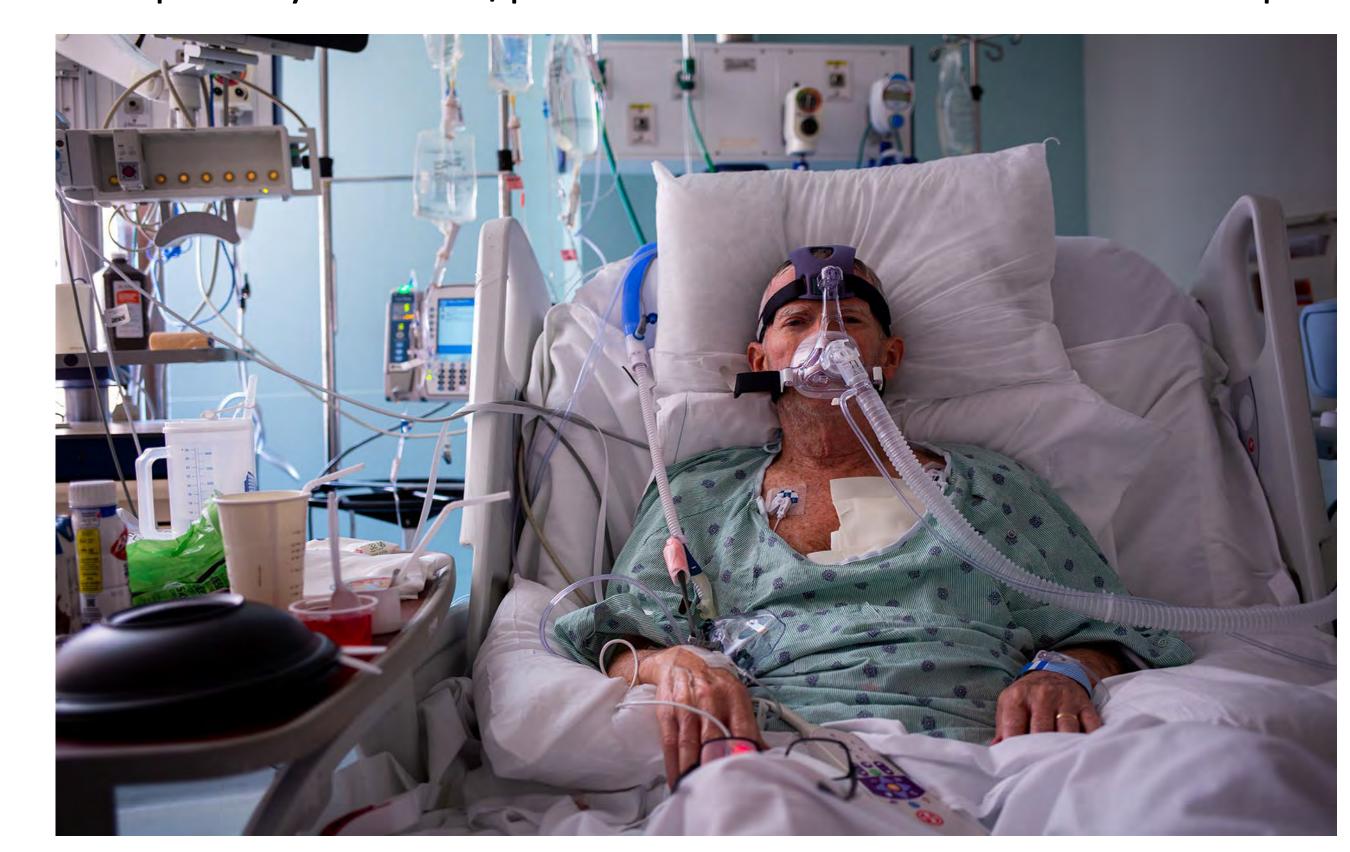


Photo: Taken by critical care nurse and photojournalist Alan Hawes, RN

Objective

The objective was to examine the incidence, mortality, and health care costs associated with NVHAP in Medicaid beneficiaries across the 5-year period of 2015-2019.

Methods

- This cross-sectional study included all Medicaid beneficiaries in the IBM Watson MarketScan Medicaid Database diagnosed with NVHAP during an inpatient hospital admission during the years 2015-2019.
- The primary outcome variable was diagnosis of NVHAP during an inpatient hospital stay, defined as pneumonia unassociated with mechanical ventilation according to the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM).

Results

- Of the 5,668,417 Medicaid beneficiaries included in the 2015-2019 dataset, 75,909 were diagnosed with NVHAP, for an overall rate of 1.34%
- Incidence expressed as rate per 1000 patient days of 2.63
- Overall mortality of 7.76%.
- While overall costs were relatively flat, in examining costs incurred after NVHAP diagnosis, there were increases in:
- total costs (6.6%)
- costs as a percentage of total NVHAP encounter costs (22.4%)
- costs as a percentage of total inpatient costs (12.7%)

	Non- NVHAP	NVHAP	Overall NVHAP rate	Overall NVHAP Rate per 1000 Patient Days	Total NVHAP Deaths	Overall NVHAP Mortality
Total	5,592,508	75,909				
	98.66%	1.34%	1.34%	2.63	5887	7.76%
Age in years			NVHAP rates	Rate per 1000 Patient Days	NVHAP Mortality (N/%) by Group	NVHAP Mortality Rate by Group
0-17	1,842,172	6,461				
	32.94%	8.51%	0.35%	0.71	230 (3.7%)	3.56%
18-44	2,039,318	15,788				
	36.47%	20.80%	0.77%	1.87	883 (17%)	5.59%
45-64	1,047,483	34,165				
	18.73%	45.01%	3.16%	5.18	2943 (50.3%)	8.64%
65+	673,535	19,495				
	12.04%	25.68%	2.81%	4.47	1831 (29%)	9.39%
Sex						
Male	1,971,500	36,729				
	35.17%	48.39%	1.83%	3.1	3123 (52.7%)	8.50%
Female	3,625,521	39,178				
	0.65	51.61%	1.07%	2.32	2764 (47.3)	7.05%
Race						
White	2,710,785	41,114				
	48.42%	54.16%	1.49%	2.99	3098 (52.1%)	7.54%
Black	1,615,298	22,023				
	28.86%	29.01%	1.35%	2.59	1833 (32.1%)	8.32%
Hispanic	227,054	1,425				
	4.06%	1.88%	62.00%	1.60	126 (2.4%)	8.84%
Other	1,044,796	11,347				
	18.66%	14.95%	1.07%	2.07	830 (13.5%)	7.31%

NVHAP Rates and Mortality in Total and by Age, Sex and Ra

Conclusion

- For Medicaid beneficiaries between 2015 and 2019, these findings provide additional support to previous research on the harm and cost associated with NVHAP.
- While Congress and the Centers for Medicare and Medicaid Services (CMS) have acted to reduce rates of some hospital acquired infections (HAI) through the Hospital Acquired Condition Reduction Program (HACRP), NVHAP is not currently included.
- The time is right to include NVHAP as an HACRP HAI initiative.

Disclosures: Data analyses were performed by the Moran Group with funding provided by Stryker

- 1. Munro, S., Baker, D., Giuliano, K. (2021). Nonventilator hospital-acquired pneumonia: A call to action recommendations from the National Organization to Prevent Hospital-Acquired Pneumonia (NOHAP) among nonventilated patients. Infection Control & Hospital Epidemiology, 1–6 doi:10.1017/ice.2021.239
- 2. Klompas, M., & Baker, D. (2021). Finding the balance between overtreatment versus undertreatment for hospital-acquired pneumonia. Infection Control & Hospital Epidemiology, 1–3. doi:10.1017/ice.2021.474
- 3. Carey, E., Blankenhorn, R. Chen, P., & Munro, S. (2021). Non-ventilator associated hospital acquired pneumonia incidence and health outcomes among US veterans from 2016-2020. American Journal of Infection Control, 50 (1), 116-119. DOI: https://doi.org/10.1016/j.ajic.2021.06.001
- 4. Baker, D., & Quinn, B. (2018). Hospital acquired pneumonia prevention initiative-2: Incidence of hospital-acquired pneumonia in the United States. American Journal of Infection Control, 46(1), 2-7. DOI: https://doi.org/10.1016/j.ajic.2017.08.036.
- 5. Giuliano, K. K., & Baker, D. (2020). Sepsis in the context of non-ventilator hospital acquired pneumonia (NVHAP). American Journal of Critical Care, 29(1),9-14. doi: 10.4037/ajcc2020402