Quick Safety
Issue 61 | September 2021

Preventing non-ventilator hospital-acquired pneumonia

Issue:

It's estimated that one in every 100 hospitalized patients will be affected by non-ventilator hospital-acquired pneumonia (NVHAP). While NVHAP is a significant patient safety and quality of care concern, it is not currently recognized as one of the National Database of Nursing Quality indicators for which hospitals are held accountable; nor is it one of the conditions that the Centers for Medicare & Medicaid Services (CMS) requires hospitals to report to the Centers for Disease Control & Prevention (CDC) National Healthcare Safety Network; and it is not integrated into the CMS current pay-for-reporting or performance programs.[1] As a result, this leaves NVHAP a health care-acquired condition without national tracking or accountability, and, most likely, is unaddressed by health care organizations.

A recent article in the journal *Infection Control & Hospital Epidemiology* (ICHE) detailed a call to action from national organizations, including The Joint Commission, to address NVHAP. The call to action includes launching a national health care conversation about NVHAP prevention and encouraging researchers to develop new strategies for NVHAP surveillance and prevention. This issue of *Quick Safety* focuses on the call's challenge to health care systems to implement and support NVHAP prevention, and to add NVHAP prevention measures to education for patients, health care professionals and students.[1]

Current NVHAP prevention strategies

Since the development of NVHAP requires a complex interaction of events that includes aspiration of microorganisms present in the oral cavity and a vulnerable host, most prevention measures target primary source control, and may include:[1,2]

- Maintaining regular oral care[1,2,3,4,5,6]
- Maintaining patient mobility[1,3,5,6,7]
- Elevating the head of the patient's bed[1,3,5,6]
- Reducing the use of acid-suppressing medications[1]
- Minimizing sedation[1,5]
- Performing dysphagia screening in high-risk patients[1]
- Using modified diets and feeding strategies for patients with abnormal swallowing[1,3,5]
- Following standardized processes to place and manage feeding tubes[1,5]
- Breathing exercises[1,3,6]
- Using chest physiotherapy[1]
- Using incentive spirometry[1,5,6]
- Educating the patient and family about NVHAP prevention[1]

Safety actions to consider:

The call to action acknowledges that strategies to improve the prevention, recognition, and treatment of NVHAP are currently limited by gaps in understanding of the pathogenesis of NVHAP. Also, surveillance is challenging because the clinical criteria for NVHAP are subjective, often inaccurate, variably documented, and labor intensive to apply. Despite these limitations and challenges, there are actions that hospitals and medical centers can take to prevent NVHAP while improving the quality of care and patient safety, lowering the risk of sepsis, reducing health care costs, and saving lives.[1]

1. Obtain buy-in from leadership and health care providers about the importance of NVHAP prevention. [1]
2. Overcome beliefs that NVHAP prevention strategies such as oral hygiene and mobility are optional tasks rather than standard-of-care interventions. [1]
3. Procure supplies necessary to implement effective interventions.[4]
4. Educate staff about the risks of NVHAP and prevention methods such as aspiration precautions.[3,5] Provide training on techniques to encourage patients to comply with oral care[2,4] and maintaining mobility.[5,7]
5. Implement processes that make oral care and mobility an expectation for routine care of non-ventilated patients.

The Joint Commission.

6. Evaluate workflows from a systems perspective and establish processes that facilitate the prevention of NVHAP (e.g., ensuring efficient access to supplies, and providing job aids where necessary).
7. Evaluate patients for swallowing issues and adjust nutrition and feeding assistance based on this evaluation.
8. Educate patients on risks and prevention methods that are implemented in the health care setting and should be continued after discharge. Empower patients and family members to ask for assistance with oral care, feeding, and mobility and obtaining any needed supplies.[4,5,7]
9. Perform outcome and/or process surveillance to determine rates of infection and compliance with processes to prevent NVHAP.[4] Consider using standardized definitions such as those promulgated by the CDC to allow for aggregation of data and comparison infection rates with other organizations.[8] *Note: The pneumonia (PNEU) definitions are still available for those units seeking to conduct off-plan PNEU surveillance for mechanically-ventilated adult, pediatric and neonatal patients and* ***non-ventilated*** *adult, pediatric or neonatal patients.*
10. Develop operational NVHAP tracking systems to assess the impact of prevention initiatives.[3]
11. Implement processes to sustain NVHAP prevention for the long term. [1]

Resources:

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2. Warren C, Medei MK, Wood B, et al. A Nurse-Driven Oral Care Protocol to Reduce Hospital-Acquired Pneumonia. Feb 2019;119(2); 44-51.
3. Wren SM, Martin M, Yoon JK, et al. Postoperative Pneumonia Prevention Program for the Inpatient Surgical Ward. *Journal of the American College of Surgeons*. April 2010;210(4):491-495.
4. Munro S, Haile-Mariam A, Greenwell C, et al. Implementation and Dissemination of a Department of Veterans Affairs Oral Care Initiative to Prevent Hospital-Acquired Pneumonia Among Nonventilated Patients. *Nursing Administration Quarterly*. 2018;42(4):363-372.
5. Lacerna CC, Patey D, Block L, et al. A Successful Program Preventing Nonventilator Hospital-Acquired Pneumonia in a Large Hospital System. *Infection Control & Hospital Epidemiology*. 2020;41:547-552. doi:10.1017/ice.2019.368
6. Baker D & Quinn B. Hospital Acquired Pneumonia Prevention Initiative-2: Incident of Nonventilator Hospital-Acquired Pneumonia in the United States. *American Journal of Infection*. 2018;46:2-7.
7. Wood W, Tschannen D, Trotsky A, et al. A Mobility Program for an Inpatient Acute Care Medical Unit. *The American Journal of Nursing*. October 2014;114(10):34-40.
8. Centers for Disease Control & Prevention. National Healthcare Safety Network. 2021 NHSN Pneumonia (PNEU) Checklist. Jan. 2021.

Note: This is not an all-inclusive list.