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Are You Addressing the New #1
Patient Harm in Your Hospital?
Pneumonia NOT Related to a Ventilator

The story of May and how we began this
journey



- May is a 57 year old grandmother who develops non-ventilator hospital acquired pneumonia (NV-HAP)
- *Why does this keep happening?*

Em in a With Healthy Elders
<http://www.fhm.s.uney.ac.uk/nutritionandbone/swiss.html>

We were familiar with VAP
but was NVHAP flying under the radar?

- How much non-ventilator pneumonia was occurring in the hospital?
- Was it happening in other hospitals?
- Could it be prevented? If so, how?

In Addition...

HAIs New on Top 10 Public Health Concerns in U.S.

NVHAP: The New Frontier

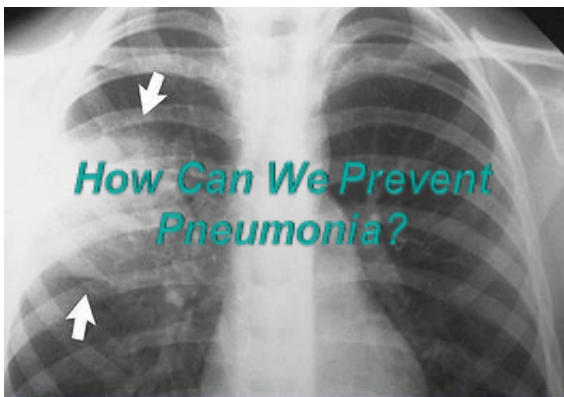


CDC (2015) Prevention Status Report, Klompas (July 2016) HCHE

By reducing NV-HAP we address quality goals of every healthcare organization:

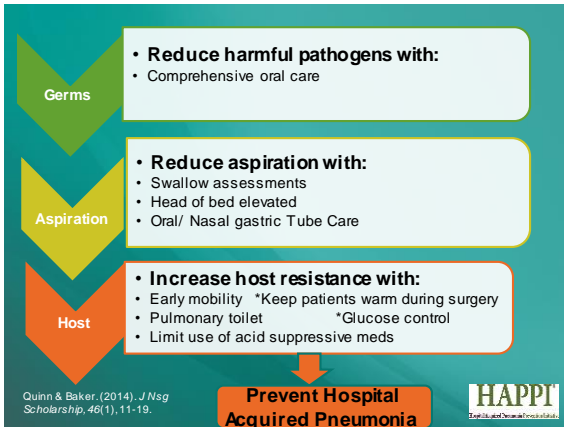
- Mortality
- Length of stay
- 30 day Readmission
- Affordability
- Sepsis
- ICU utilization
- Long term morbidity





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“Identify the most modifiable risk factors and develop prevention programs to address them.” (CDC, 2003)



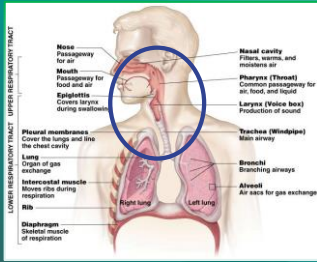
Most Pneumonia Starts in the Mouth

- Microbiome of Oral Cavity
 - 200 billion oral microbes
 - 700 -1000 species
- 48 hours for HAP pathogens in mouth
- *If aspirated*
=100,000,000 bacteria/mL saliva into lungs

<http://helios.bio.ed.ac.uk/bio/microbes/biolim.htm> / Loesche, W. 2012/ Sacnnapieco et al. (1992). *Crit Care Med*, 20:740-745

HAPPI
Hospital Acquired Pneumonia Prevention Initiative

Microaspiration



At least 50% of healthy adults micro aspirate

Elevating the head of the bed does not prevent all aspiration or micro aspirations

Gheson K, et al (1997) Microaspiration during sleep in healthy subjects. *Chest*. 111:1266-72.

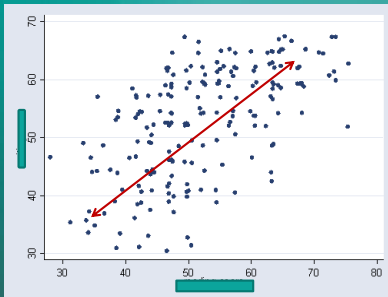


- Who is most at risk?
- Who is not at risk?

14



Who is "at-risk"? **ALL** patients in the hospital – therefore a standard of care is required



Scatter plot example

15



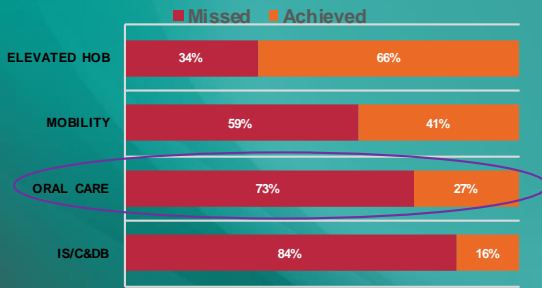
Why Oral Care as Primary Intervention?

- Systematic Review & Meta Analysis
- 5 RCTs: Oral care to prevent NV-HAP
- Risk Reduction for NVHAP (P=.02)
- RR for fatal NV-HAP (P=.002)



Kaneoka (2015) ICHE Prev of HCAP w oral care

Underused care associated with the development of pneumonia*



Coker et al. (2016). Oral care hygiene provided by nurses...

*Katsichis (2013). Am J Med Qual. Missed nursing care leads to poor pt outcomes.



What have we learned?

- Pneumonia - occurring in nonventilated patients in **All types of hospital systems**
- Patients are at risk on **ALL types of hospital units**
- Costing significant number of **lives and dollars**
- Opportunities for prevention are **unused** – **Preventive care not completed**



“I don't mind change;
I just don't like to be changed”



Recommendations to Address NV-HAP & Post op pneumonia at your facility:

- Use a scientific model to change behavior
- Measure baseline NV-HAP
- Gather an interdisciplinary team
- Select Interventions based on Gap Analysis findings & EBP

Recommendations to Address NV-HAP & Post op pneumonia at your facility:

- Focus on one intervention at a time, beginning with the most modifiable risk factors
- Monitor process and outcome measures; calculate ROI
- Provide feedback to staff and leadership
- Celebrate and share your successes

RAMPING FOR ZERO PATIENT HARM

NV-HAP #1 hospital-acquired infection, costing patient lives and dollars

NV-HAP can be prevented and harm to patients reduced

Monitoring for NV-HAP and prevention programs must rise to the same level of attention as other HAs

HAPPI
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Courage

One must always be aware, *to notice*, even though the cost of noticing is to become responsible.

Thylis Moss

References

- ▶ ATN. (2005). Guidelines on the management of adults with HAP. *Am J Resp Crit Care Med*, 171, 388-416.
- ▶ CDC. (2003). Guidelines for preventing HCA/HAP.
- ▶ Denkovic, M.B. et al. (1999). Supine body position as a risk factor for nosocomial pneumonia in mechanically ventilated patients: a randomized trial. *Lancet*, 354:1851-1858.
- ▶ El Sobh, et al. (2004). Colonization of dental plaques: a reservoir for respiratory pathogens for hospital-acquired pneumonia in institutionalized elderly. *Chest*, 125(5):1575-1582.
- ▶ Gansius-Ogawa M. et al. (1997). Oropharyngeal colonization. *Am J Respir Crit Care Med*;156:1647-1655
- ▶ Gleason K, et al. (1997). Microaspiration during sleep in healthy subjects. *Chest*, 111:1266-72.
- ▶ Gleason, J. et al. (2013). *Balancing: the power to change anything*. Vital Stimuli, M-Graw Hill Publishing.
- ▶ Kofel et al. (2005). Epidemiology and outcomes of health-care-associated pneumonia results from a large US database of culture-positive pneumonia. *CHST*, 12(86), 3854-3862.
- ▶ Langston, S. et al. (1998). Prediction of aspiration pneumonia: how important is dysphagia? *Dysphagia*, 13, 69-81.
- ▶ Ovensh, T.J. et al. (2001). The effect of incentive spirometry on postoperative pulmonary complications: a systematic review. *Chest*, 120(7):9718
- ▶ Pennsylvania Dept. of Public Health (2010). HAs in Pennsylvania hospitals – 2009 technical report.
- ▶ Resar R, Griffin FA, Hamden C, Nolan TW. *Using Care Bundles to Improve Health Care Quality*. BH Innovation Series white paper. Cambridge, Massachusetts: Institute for Healthcare Improvement; 2012. (Available on [www.IHIC.org](#))
- ▶ Schmitz, et al. (2009). Effects of oral care on hospital-acquired pneumonia in the intermediate care setting. Poster Presentation @ 20th National Forum on Quality Improvement in Health Care.
- ▶ Terzakis E, Needelman I, Kumar N, Meke D, Apodo E(2011). The impact of hospitalization on oral health: a systematic review. *J Clin Periodontol*;38: 628-636. doi:10.1111/j.1600-051X.2011.01722.x
- ▶ Van Nieuwenhoven CA, et al. (2006). Feasibility and effects of the semirecumbent position to prevent VAP: A randomized study. *Crit Care Med* 34:396-402.
- ▶ Watano A, et al. (2004). Daily oral care and cough reflex sensitivity in elderly nursing home patients. *Chest*, 204; 126:1066-1070.
- ▶ Yoneyama et al. (2002). Oral care reduces pneumonia in nursing homes. *Al*, 14(5):59; 430-3.
- ▶ Mickel et al. (2016). Case control study NVHAP on Patient outcomes, published first online, *Chest*, April 2016
- ▶ Barnes, C. (2014). Dental hygiene intervention to prevent PNA. *J EB Dental Practice*, 145p: 103-114.
- ▶ Munro, C.L., Gimp, M.J., Jones, D.J., McClish, D.K., & Sevsker, C.N. (2009). CHX Th, prevent NV HAP: changein don. *Am J Crit Care* 18:428-437

