Preventing Non Ventilator Hospital Acquired Pneumonia

- Types of HAP
  - VAP
  - NV-HAP
  - Post-op pneumonia
- 35% of HAIs are not device associated - Infection Control and Hospital Epidemiology Feb. 2014
- Basic nursing care can prevent NV-HAP

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- NV-HAP
  - New #1 HAI, tied with SSI
  - No difference in mortality between VAP and NV-HAP
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- Study done by Barbara Quinn to determine incidence and clinical factors of NV-HAP.
- 24,482 patients in the study and 94,247 patient days
- Found 115 cases of NV-HAP

Highest risk for NV-HAP
- Non vented ICU patient followed by the patient on Med/Surg
- Missed Nursing Care
  - Elevated HOB
  - Mobility (60%)
  - Oral Care (70%)
  - Incentive Spirometer/Cough and Deep Breath (over 80%)

Basic Nursing Care Study
Conclusions
- HAP is occurring in nonventilated patients
- Costing lives and dollars
- Patients are at risk on ALL units
- Preventive nursing care is missed
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♦ Choosing an intervention
  - Incentive Spirometer
  - HOB elevation
  - Oral Care

♦ Care Bundle?
  - Bundle – “a small set of evidence-based interventions for a defined patient population and care setting” (IHI, 2001)
  - If the intervention needs to be applied to a diverse group of patients in different locations, it no longer meets the definition of a bundle – it becomes the STANDARD of CARE.

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♦ Risk factors for oral bacteria in the hospital
  - Increased bacteria counts
    - Plaque (biofilm on teeth), tooth decay
    - Reduced salivary flow
      - The drier the mouth, the faster bacteria will grow in the mouth
  - 24-48 hours for HAP pathogens (100 pathogens) in the mouth
  - If aspirated = 100,000,000 bacteria/ml saliva into lungs

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♦ Pathogenesis
  - Germs in mouth (dental plaque provides microhabitat)

  ♦ Aspiration (micro-aspirate)
    - Weak Host (immunosuppressed, poor cough, multiple comorbidities)
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- Prevention
  - Germs in Mouth = comprehensive oral care
  - Aspiration = prevention strategies
  - Weak Host = strengthen host defenses

Studies have shown that oral care reduces pneumonia in nursing home patients/residents.

- Oral care improves swallowing and cough reflex sensitivities
- Tooth brushing removes dental plaque, swabs do not.

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- Oral Care Protocol
  - Self Care/Assist – provide toothbrush, paste, rinse. Brush 1-2 minutes and rinse. Frequency – 4x/day
  - Dependent/Aspiration Risk – Suction, toothbrush or toothbrush kit. Follow kit instructions for use. Frequency – 4x/day
  - Dentures – provide toothbrush, paste, rinse, cleanser, adhesive. Remove dentures and soak. Brush gums, and mouth. Rinse. Frequency 4x/day
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- Barbara Quinn Study results after education of staff over need for oral care on patients
  - Decrease in NV-HAP incidence in combined ICUs
  - Oral Care Frequency documentation increased
  - NV-HAP Incidence had a 50% decrease from baseline

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- Return on Investment for Sutter Medical Center, Sacramento
  - 60 NV-HAP avoided in 2013
  - $2,400,000 cost avoided
  - $117,600 cost increase for supplies
  - Bottom line - $2,282,400 return on investment
  - PLUS
  - 12 lives saved