

## Oral Care to Prevent Non-Ventilator Hospital Acquired Pneumonia (NV-HAP)

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### Project Goals

- Implement an oral care protocol in the Progressive Care Unit (PCU)
- Increase the percentage of patients receiving oral care in PCU
- Reduce the incidence of NV-HAP in the PCU

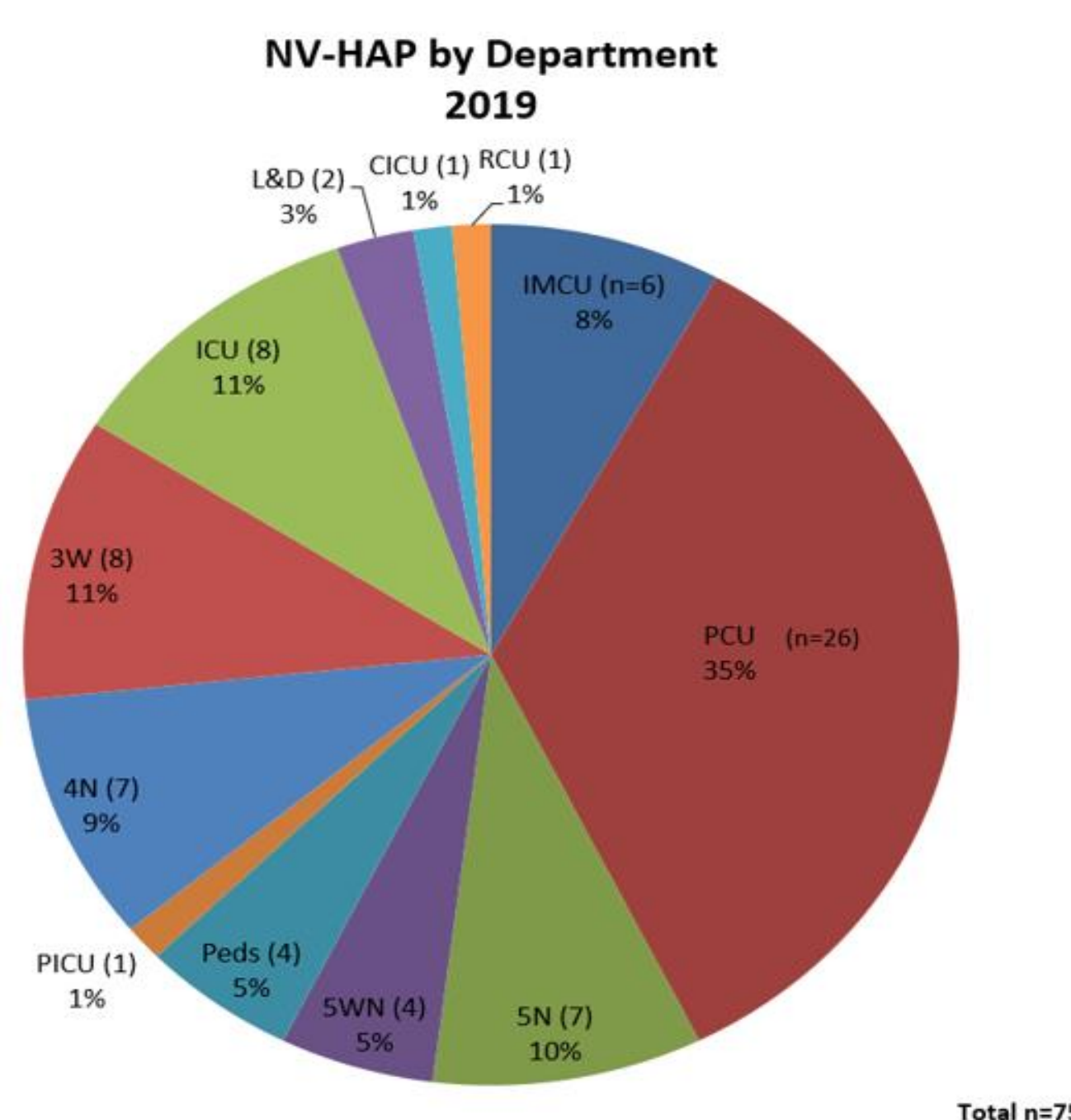
### Background Supporting Evidence

NV-HAP is the most commonly occurring hospital-acquired infection in the US. The oropharyngeal flora changes to pathogens within 48 hours of hospital admission and NV-HAP occurs when contaminated oral secretions are microaspirated. NV-HAP is associated with mortality and morbidity. PAMC administrative data demonstrated the highest incidence of NV-HAP occurred in the PCU.

Review of the literature demonstrated oral care reduces NV-HAP. Oral care in the PCU was dependent upon the memory, initiative, and individual practices of caregivers. Moreover, oral care supplies did not meet standards endorsed by the American Dental Association (ADA).

### Consequences of NV-HAP

- Mortality rate 18 – 30%
- Add 7 to 12 additional hospital days
- 40% admitted from home are discharged to assisted living or skilled nursing facility
- Costs \$40,000 per case



### What can nurses do to prevent NV-HAP?

Help your patients *brush their teeth* and *use an antimicrobial mouthwash*

*How often?* After meals and at bedtime.

Research studies have shown oral care to be the best way to protect your patient from NV-HAP.

You will be provided with two new oral care kits. The oral care caddy can be used by patients who can brush their own teeth. The DuoCare kit has a suction toothbrush and should be used for patients who are at risk for aspiration (cannot spit) or if they have a tracheostomy.

### Project plan and Implementation

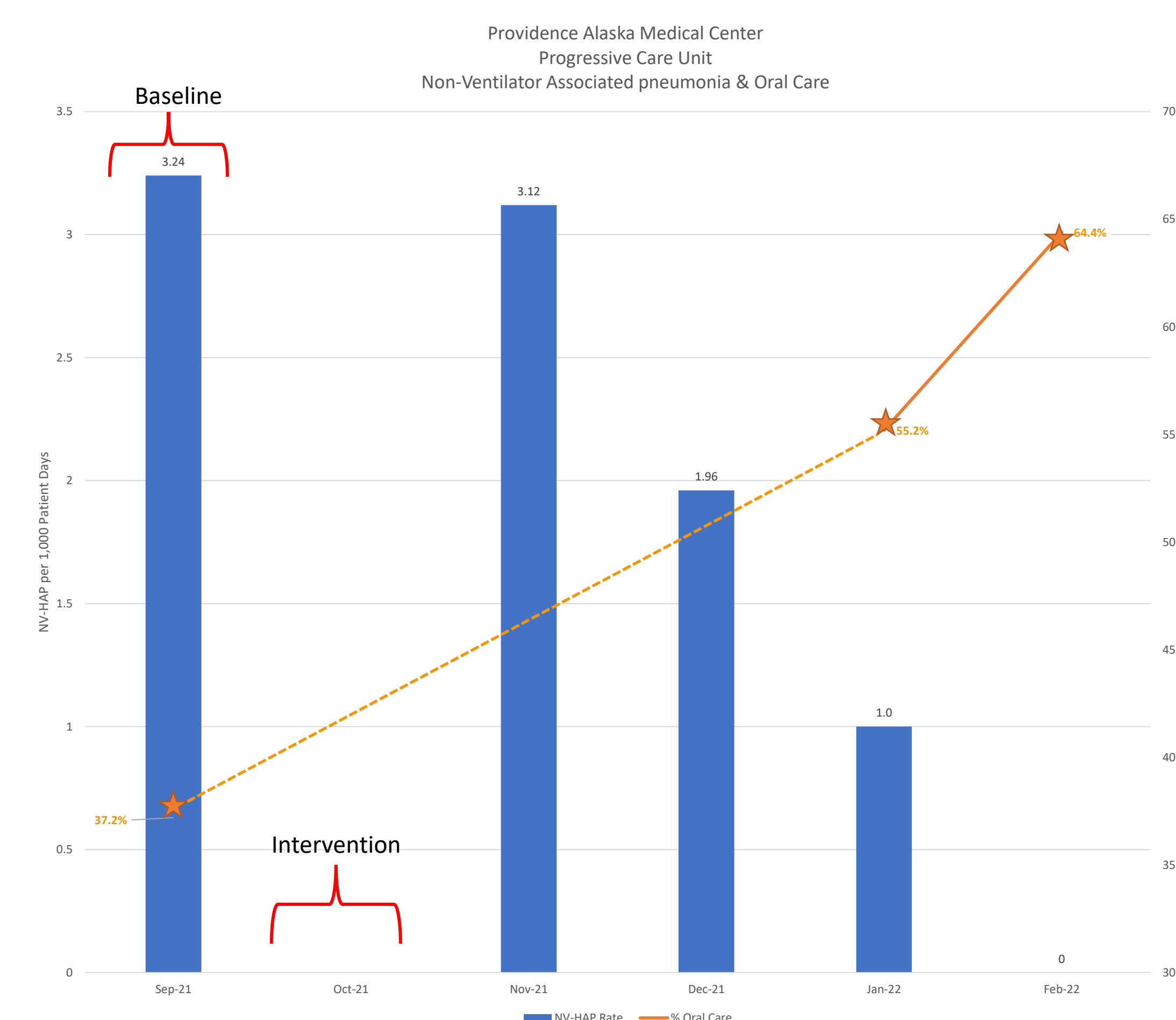
- QI project using PDSA implemented in PCU.
- Evidence-based oral care protocol developed Sept. 2021
- NV-HAP education for caregivers completed Oct. 2021
- ADA compliant oral care kits stocked Sept. 2021
- Vendor in-services Sept. 2021 & Jan. 2022
- Text-page reminders for oral care Feb 2022
- Process measure data collected Jan – May 2022
- PCU leadership team used process measures to provide feedback and coaching to staff Jan- May 2022
- NV-HAP stories shared with staff March 2022

### Oral Care Kits



### Data

- The proportion of patients who received oral care at least once during a 24-hour period has risen from an average of 5% in July 2021 to 64% in March 2022.
- The NV-HAP rate dropped from 3.24/1,000 patient days at baseline to 1.0/1,000 patient days by Jan. 2022. There were no cases of NV-HAP during Feb. 2022



**Oral care is an interventional nursing procedure that reduces morbidity and mortality associated with NV-HAP.**

### Outcomes or Results

- Using PDSA cycles resulted in incremental improvements.
- Engagement of PCU leaders and frontline staff as well as an interprofessional approach was essential.
- Oral care supplies bundled in a kit helped reduce practice variations.
- Although the proportion of patients who received oral care increased, use of the protocol was not optimized.
- However, as the proportion of patients who received oral care with products meeting ADA recommendations rose, the incidence of NV-HAP decreased by almost 70% within 3 months.

### Future Opportunities

- Optimize use of oral care protocol on PCU
- Spread oral care best practices to other in-patient nursing departments at PAMC

### References

1. NEJM. 2018; 379: 1732-1744.
2. Am J Infect Control. 2018; 46: 322-327.
3. Am J Infect Control. 2018; 46: 2-7
4. Inf Control Hosp Epidemiol. 2015; 36: 899
5. Nur Admin Q. 2018; 42: 363.

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