Implementation of SAGE Oral Cavity Health Assessment Tool

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Problem

- National average of non-ventilated adults that receive oral care during hospitalization is about 30%
- Chart audits January – March, 2024 at a large urban medical center found 10% to 15% of non-ventilated patients in the Cardiac Surgical Intensive Care Unit (CSICU) received daily oral care
- Oral care fewer than four times per day increases the risk of non-ventilated hospital-acquired pneumonia (NVHAP):
  - Escalation of care
  - Antibiotic use
  - Longer length of stay
  - Cost up to $40,000 per case
- A report generated on all patients discharged from the CSICU September – December, 2023 identified 45 cases of NVHAP (potential $1.8M loss)

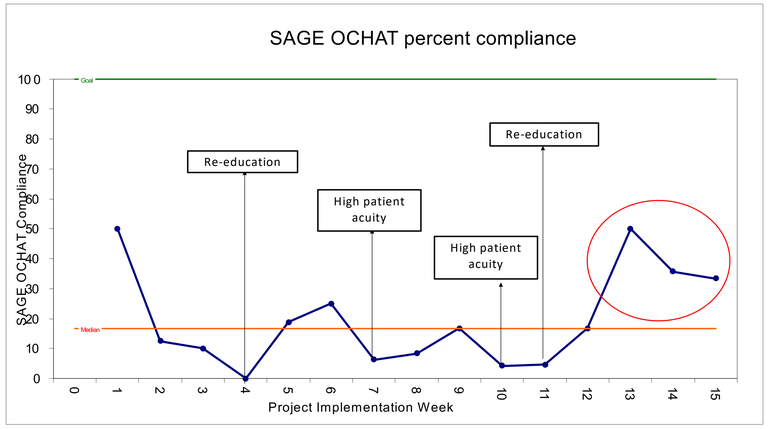
Purpose and Goals

- **Purpose:** The purpose of this QI project is to implement and evaluate the SAGE Oral Cavity Health Assessment Tool (SAGE OCHAT) on oral care compliance among non-ventilated hospitalized adults in the CSICU
- **Goals:**
  - Structure:
    - 100% of staff educated on SAGE OCHAT
  - Process:
    - 100% of non-ventilated patients receive SAGE OCHAT once per 12-hour shift
    - 100% of non-ventilated patients receive oral care at least four times per day
  - Outcome:
    - Zero percent new cases of NVHAP in CSICU

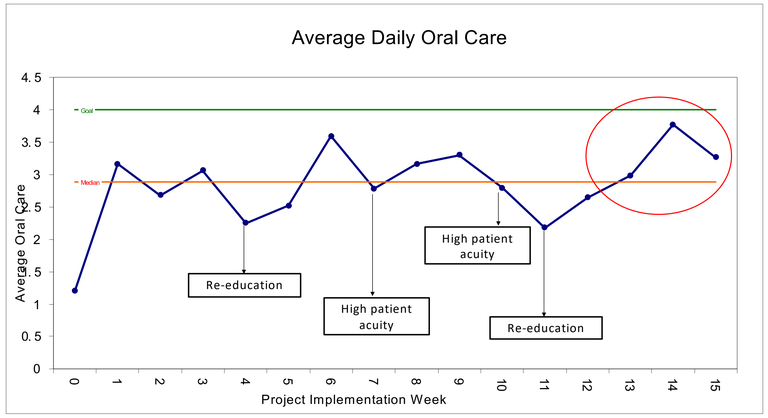
Methods

- **Setting:**
  - Large urban medical center CSICU with approximately 70 RNs and 10 PCTs
- **Population:**
  - Non-ventilated patients in the CSICU (post open heart surgery, lung/heart transplant, LVAD, VA ECMO, etc.)
  - Approximately 100 patients projected to be impacted over this 15 week QI project
- **Intervention:**
  - The QI Project Lead (QI-PL) mobilized interdisciplinary team of stakeholders (RNs and PCTs) in CSICU to implement structure and workflow changes:
    - oral care kits present on all admissions
    - SAGE OCHAT once per shift
    - increased oral care frequency
  - PowerPoint presentation, including pre- and post-test on SAGE OCHAT for CSICU RNs/PCTs
  - QI-PL present on CSICU weekly to review SAGE OCHAT, address barriers, and update stakeholders
- **Data Collection:**
  - Oral care compliance tracked weekly via electronic health record (EHR) audits of all non-ventilated patients in the CSICU
    - CSR enters oral care frequency into Research Electronic Data Capture (REDCap), average daily oral care calculated weekly
  - SAGE OCHAT accessed by CSICU staff via QR code
    - Responses also recorded in REDCap and compared to number of non-ventilated patient days in the CSICU to assess compliance

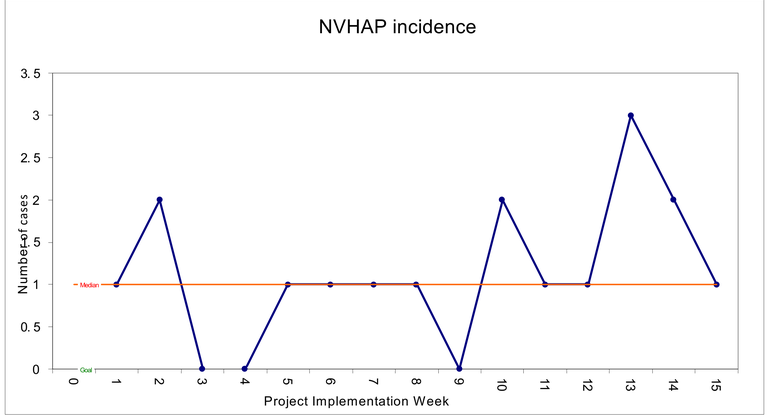
Results



SAGE OCHAT once per shift averaged 19% (n = 71), ranged from 0 – 50% compliance per week. Compliance calculated as percent of total SAGE OCHAT data collected, divided by SAGE OCHAT data expected, multiplied by 100.



Oral care averaged 2.7 times/day (n = 146), and ranged from 2.2 – 3.8 times per day. Average daily oral care calculated as total times oral care completed while non-ventilated, divided by total non-ventilated patient days.



NVHAP total = 7 cases identified throughout project. Monthly chart audits received from infection prevention RN of patients discharged with ICD code for pneumonia not present on admission and not associated with a ventilator; NVHAP.

Discussion

- **SAGE OCHAT:**
  - Stakeholders re-education weeks 4 and 11 (compliance below 20% x 2 weeks)
  - Weeks 7 and 10 high patient acuity; limited staff availability for DNP project
  - Run in weeks 13– 15 demonstrate increased participation
  - Increased use of SAGE OCHAT correlated with increased average daily oral care, which is consistent with the literature
- **Oral care:**
  - Stakeholders re-educated weeks 4 and 11 (oral care below 2.5 x/day)
  - Weeks 7 and 10 high patient acuity; limited staff availability
  - Weeks 13 – 15 demonstrate a run where oral care over the median, which mimics compliance run with SAGE OCHAT utilization
- **NVHAP:**
  - Patient length of stay varied from two to three weeks
    - Low oral care and SAGE OCHAT compliance illustrated in week 11 is then demonstrated as a higher incidence of NVHAP in week 13
    - Conversely, week 6 illustrated high oral care and SAGE OCHAT compliance, and then demonstrates a lower incidence of NVHAP in week 9
  - Increased oral care correlated with decreased incidence of NVHAP, which is consistent with the literature
- **Limitations:**
  - QI Project limited to 15 weeks
  - Ease of use of tool: staff stated “have tool memorized,” and not enter data in REDCaps (QI-PL unable to track)
  - Short staffing and/or high acuity limited staff availability

Conclusion

- **Major Findings:**
  - SAGE OCHAT use did not reach goal –
    - Stakeholders identified primary barriers to SAGE OCHAT as:
      - Lack of time
      - High patient acuity
      - Staff confusion regarding new duties/screenings with “so many projects going on right now”
      - Lack of education
  - Oral care did not reach project goal –
    - Average increased to more than twice baseline
- **Key Improvements:**
  - NVHAP did not reach project goal –
    - 85% decrease in NVHAP cases during project implementation
    - Approximately $1.5M saved
- **Sustainability and Expansion:**
  - Unit RN and PCT champion continue monitor SAGE OCHAT/oral care
  - Infection Prevention RN continue to monitor NVHAP incidence
  - Potential expansion to other ICUs and units within medical center

References and SAGE OCHAT

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