

Background

Oral care is a fundamental aspect of patient care, yet it is often overlooked or inadequately provided, particularly in acute care settings. Poor oral health is increasingly recognized as a contributor to cardiovascular disease, respiratory disease, cancer, stroke, and poor nutritional intake, leading to higher morbidity rates, prolonged hospital stays, and increased healthcare costs (Munro et al., 2021). Effective oral hygiene practices are essential for maintaining overall health, particularly in hospital settings where patients may be more vulnerable to hospital-associated infections, like non-ventilator hospital-acquired pneumonia (NVHAP). Nurses are well-positioned to provide patients with routine oral care, and research supports the implementation of nurse-led oral care initiatives as highly effective strategies for mitigating the risks associated with poor oral health (Munro et al., 2022). Though the benefits of oral health are well studied, standardized oral care protocols are often lacking or inconsistently implemented within healthcare organizations. A review of literature highlighted several barriers to the provision of oral care in the acute care setting including a lack of knowledge and training among nurses regarding best practices for oral hygiene, insufficient time and competing priorities that prevent nurses from dedicating adequate attention to oral care, and an absence of standardized protocols and documentation requirements to ensure consistent implementation of oral care across the organization (Andersson et al., 2020; Salamone et al., 2013; Schutte & Warren, 2020; Warren et al., 2019). This quality improvement project aims to implement and evaluate an evidence-based, nurse-driven oral care protocol designed to standardize oral care practices provided by nurses to hospitalized patients. The goal is to improve the delivery of oral care to patients and reduce the risk of hospital-acquired infections and other adverse outcomes related to poor oral health.

Methods

The Johns Hopkins Center for Nursing Inquiry webpage served as a resource for organizing, planning, and executing a quality improvement project (Dang et al., 2022). The team planned to pilot the project on the Med-Surg/3M (3M) unit to evaluate the effectiveness and sustainability of a standardized oral assessment tool and protocol in the delivery of consistent and evidence-based oral care practices among the nursing staff. Protocol effectiveness was evaluated by measuring compliance with oral care documentation.

During the preplanning phase, the team developed a data repository, with help from the Clinical Informatics Department, to capture oral care data from the patient medical record documentation. To manage the large volume of data generated by this repository and the time required to review it, the task force determined that quarterly data audits would be the most feasible approach.

The project began with an assessment of the current oral care practices within the unit. Informal surveys of nurses (RNs) and certified nursing assistants (CNAs) revealed that oral care was often viewed as a lower priority, with many staff reporting that oral care was frequently missed. Staff also cited lack of access to oral care supplies as a barrier to providing care. The project team collaborated with key stakeholders, including nurses, nurse managers, materials management specialists, certified nursing assistants, and the professional governance councils to address identified barriers to providing oral care and develop an appropriate intervention.

To develop the protocol, the team used information collected during their literature review from nurse-led protocols. A standardized assessment tool, the Bedside Oral Exam (BOE), and a protocol, the Barrow Oral Care Protocol (BOCP), were adopted since their efficacy and ease of use have been demonstrated in the literature (Centers for Disease Control and Prevention, 2024; Prendergast et al., 2013; Quinn et al., 2020). The BOE is a visual scoring tool that uses pictures to assess eight criteria within the oral cavity (see Figure 1). Each category receives a score of 1 to 3, with “1” indicating normal oral function, “2” indicating moderate oral dysfunction, and “3” indicating severe oral dysfunction. The total oral health score, ranging from 8 to 24, drives the oral care protocol (see Figure 2). The BOE score corresponds to a set of oral care interventions on the BOCP, which specifies the frequency of toothbrushing and oral mucosal care to be provided to the patient. A modified version of the BOCP was adopted for this quality improvement initiative to better align with the organization’s practice standards, which were adopted from Dynamic Health™, a competency assessment platform (EBSCO, 2024).

Figure 1

Bedside Oral Exam				
Perform Each Shift				
Category	Methods of Measurement	Numerical and Descriptive Ratings		
		1 Normal	2 Moderate Dysfunction	3 Severe Dysfunction
Swallow	Observe while patient swallows, check gag reflex	Normal swallow	Pain or difficulty with swallow	Unable to swallow <i>(intubated, absent gag)</i>
Lips	Observe	 Smooth, pink	 Dry or cracked	 Ulcerated or bleeding
Tongue	Observe appearance of tissue	 Pink, moist, papillae present	 Coated or loss of papillae with shiny appearance, with or w/o redness	 Blistered, cracked, or bleeding
Saliva	Observe Use tongue blade, touching the center of tongue and floor of mouth <i>(optional)</i>	 Watery	 Thick or ropy	 Absent
Mucous Membranes	Observe appearance of tissue	 Pink, moist	 Red or coated, no ulcers	 Ulcers with or w/o bleeding
Gingiva	Observe Use tongue blade, may gently press tissue with tip of blade <i>(optional)</i>	 Pink, firm	 Edema, with or w/o redness; with or w/o bleeding	 Bleeds easily
Teeth or dentures	Observe appearance of teeth or denture	 Clean or no teeth	 Local debris (between teeth)	 General debris, decay
Odor	Smell	Normal	Slightly to moderately foul	Strong foul odor

Modified from: Eilers, et al. (1988) "Development, testing, and application of the oral assessment guide." *Oncol Nurs Forum* 15(3): 325-30.

Figure 2

Bedside Oral Exam Scoring			
Descriptive Rating	Total BOE Score	Toothbrushing*	Oral Mucosal Care
Normal Oral Function	8-10	q12 hr	PRN
Moderate Oral Dysfunction	11-14	q12 hr	q4 hr
Severe Oral Dysfunction	15-24	q12 hr	q2 hr

Note. Abbreviation: Bedside Oral Exam (BOE)
* Oral care with chlorhexidine gluconate (CHG) q12 hr for intubated or tracheostomy patients. CHG is documented on the patient’s electronic medication administration record.

Project interventions included the provision of necessary oral care supplies on each unit, comprehensive staff training on the importance of oral hygiene and the use of the new protocol, improvements to oral care documentation screens, and frequent audits to ensure high compliance with the new protocol. In January 2024, the task force began educating all RNs and CNAs on 3M. Education included the role of oral care in infection prevention, selection of appropriate oral care supplies, oral care for denture wearing patients, review of oral care documentation, and training on how to use the BOE and BOCP. The education was presented by members of the oral care task force in staff meetings, annual skills competency camps, new-grad nurse orientation, and on the units. On February 5, 2024, the new protocol was implemented on 3M. Oral care reminders were included in weekly huddle announcements by charge nurses and laminated copies of the BOE and nurse-driven protocol were attached to computer workstations to provide visual cues. Oral care champions were available on the unit to answer questions, troubleshoot problems, and re-educate staff as needed.

Data were collected for 3 months prior to the project go live date to get a baseline understanding of oral care documentation on the unit. Post-implementation audits were conducted quarterly to evaluate compliance and the impact of the interventions.

Results

The team referenced the dental standards set by the American Dental Association (American Dental Association, 2024) to guide data collection. This involved calculating the proportion of patients receiving the recommended frequency of oral care, which was a minimum of twice daily (BID). Baseline compliance with BID oral care was 62%. Following the implementation of the standardized oral care protocol on 3M, compliance with the BID oral care standard increased to 81% in the first quarter and 83% in the subsequent quarter.

The team encountered several limitations with data collection. Despite its usefulness, the data auditing tool generated a lot of data that was difficult to manage manually and time consuming to review. Ongoing efforts are underway to refine the tool and automate data extraction and analysis.

Conclusions

The implementation of a standardized, nurse-driven oral care protocol has shown promising results in enhancing oral care compliance among nursing staff and improving oral health practices for hospitalized patients. Preliminary findings indicate an increase in the frequency and quality of documented oral care, suggesting positive reception and adherence to the new protocol. While the full impact of this initiative on reducing adverse health outcomes, such as NVHAP, remains under investigation, this project underscores the importance of consistent oral hygiene in hospital settings to prevent complications. Continued efforts are needed to overcome barriers to data collection to better assess the protocol’s long-term efficacy. Future recommendations include expanding the initiative house-wide to all inpatient units.

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