

A journey to improve oral care with best practices in long-term care

L Lynda McKeown*, HBA, MA, RDH; Heather H Woodbeck[§], HBScN, MHSA, RN; Monique Lloyd*, PhD, RN

ABSTRACT

Between January 2010 and July 2011, a registered dental hygienist and Registered Nurses' Association of Ontario (RNAO) best practice coordinator set out on a journey to improve the outcomes of oral care for residents in a long-term care (LTC) home in rural Ontario. Using evidence-based oral care resources developed by the RNAO, the quality improvement team created an education intervention for LTC staff and monitored their progress in providing oral care to the residents. The initiative was marginally successful in achieving its primary objective of improving oral care but this outcome was negligible in light of other oral/dental health issues and documentation discrepancies. This article shares findings and discusses challenges encountered along this quality improvement journey, and suggests next steps to improve the delivery of oral care for residents of LTC homes.

RÉSUMÉ

Entre les mois de janvier 2010 et juillet 2011, une hygiéniste dentaire autorisée et une coordonnatrice des meilleures pratiques de l'Association des infirmières et infirmiers autorisés d'Ontario (RNAO) ont amorcé une trajectoire pour optimiser les soins dentaires dans un établissement de soins de longue durée (SLD) dans l'Ontario rurale. S'appuyant sur des ressources fondées sur des données probantes, élaborées par la RNAO, l'équipe d'amélioration de la qualité a créé une intervention éducative pour le personnel du SLD et en a suivi la progression des effets dans la prestation de ses soins buccodentaires aux résidents. L'initiative a eu un succès marginal dans la poursuite de son premier objet visant à améliorer les soins buccodentaires, mais ce résultat fut négligeable, vu les autres problèmes de l'ensemble buccodentaire et les lacunes documentaires. Cet article fait état des résultats obtenus, discute des difficultés rencontrées dans cette démarche d'amélioration de la qualité et propose des mesures à prendre pour améliorer la prestation des soins buccodentaires aux résidents des établissements de SLD.

Key words: evidence-based practice, frail elder, long-term care, oral health, quality improvement

INTRODUCTION

Evidence has shown that oral care is often overlooked in residents of long-term care (LTC) homes, many of whom have poor oral health.^{1,2} Cleaning their own teeth or dentures can be a challenge for residents, and assistance from point-of-care staff or oral health professionals may be inadequate, inaccessible or unavailable.³ Staff often report insufficient time or materials to perform oral care, resulting in ineffective removal of debris. Additionally, residents with dementia often forget to brush their teeth and can be combative or refuse care. Inadequate oral care, coupled with snacks and supplements high in sugar content and the use of sweet foods to facilitate medication administration, can lead to serious health consequences for LTC residents including oral disease, cardiovascular disease, stroke, and pneumonia.⁴⁻⁸

In an effort to improve oral care provided by nurses, the Registered Nurses' Association of Ontario (RNAO) produced an evidence-based oral health best practice guideline (BPG) with a panel of experts, including a dental hygienist.⁹ The BPG provides recommendations for assessment, planning,

implementation, and evaluation of oral care in all health care settings. Companion tools also produced by RNAO include 2 videos, entitled *Oral Care for Residents with Dementia*¹⁰ and *Oral Care for Xerostomia, Dysphagia, and Mucositis*.¹¹ RNAO supports health service and academic organizations to improve the delivery of quality care by using multifaceted, applied knowledge exchange strategies. The RNAO Long-Term Care Best Practices Program, funded by the Government of Ontario, is one such successful resource targeted to LTC homes. It links registered nurses employed as best practice coordinators with LTC homes across Ontario to support LTC leaders and staff in creating a culture of evidence-based practice through capacity development and the implementation of RNAO's BPGs.¹²

Guided by RNAO's oral care BPG,⁹ an RNAO best practice coordinator (BPC) and registered dental hygienist (RDH) partnered with the managers of a LTC home in rural Ontario to implement a quality improvement initiative for residents' oral health. The initiative set out to enhance the consistency and quality of oral care provided to

*Oral care programs, Confederation College, Thunder Bay, ON

[§]Long-term care best practice coordinator, Northwest Local Health Integration Network, Registered Nurses' Association of Ontario, Thunder Bay, ON

[†]Associate director, Guideline Development, Research and Evaluation, Registered Nurses' Association of Ontario, Toronto, ON

Correspondence to: Lynda McKeown; lmckeown@tbaytel.net

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residents by increasing the awareness, knowledge, and skills of point-of-care staff, which included 14 registered nurses (RN), 13 registered practical nurses (RPN), and 73 personal support workers (PSW). This article shares the outcomes and challenges encountered along this quality improvement journey and suggests next steps to improve the delivery of oral care for residents of LTC homes.

BACKGROUND

In 2009, the majority of Canadians (68%) had the benefit of dental insurance and spent about \$2.8 billion on professional dental services.¹³ Residents of LTC homes today have more natural teeth and complex, expensive restorations, such as bridges, crowns, and implants, than a decade ago. With the increasing number and complexity of restorations and oral prosthetics among dependent elderly, the provision of proper and adequate routine oral care has become more challenging.¹⁴ Nonetheless, it is critically important that staff in LTC homes be able to provide consistent, evidence-based oral care.

In Ontario, the Long Term Care Homes Act (2007) requires that every LTC home have a plan of care for each resident, including assessment of oral/dental status and oral hygiene. Each resident must receive oral care to maintain the integrity of oral tissue, including twice-daily mouth care and cleaning of dentures, and physical assistance to clean their own teeth if required. Clinical data on LTC residents' oral/dental status are collected using the provincially mandated Resident Assessment Instrument–Minimum Data Set 2.0 for long-term care (RAI–MDS), a standardized tool to screen and record the health status of each resident upon admission, quarterly, on significant change in health status, and annually. The RAI–MDS assessment is conducted by nursing staff and reports residents' oral/dental health status as well as any problematic conditions.

This quality improvement journey was initiated as a result of the LTC home's existing relationship with the BPC and RDH. The LTC home was committed to enhancing the evidence-based practice culture of point-of-care staff; improving oral care became a specific intervention focus in response to complaints received from residents' family members regarding the quality of oral care provided by the LTC home. Observations of poor oral care were substantiated by the RDH, who had been providing fee-for-service oral care to the LTC home since 2002. In consultation with the director of care and clinical manager, the BPC and RDH set out to determine residents' oral health status and deliver an education intervention to point-of-care staff based on oral care best practices. The aim of the initiative was to improve oral care knowledge and skills of staff, as evidenced by improvements in the oral health status of residents.

METHODS AND IMPLEMENTATION

The oral care quality improvement initiative was launched in January 2010. Activities included establishing baseline oral health status through onsite oral assessments and comparing assessment findings with daily flow sheet and RAI–MDS data completed by nursing staff (January–February 2010); delivering an education intervention to all point-of-care staff (February–July 2010); and, evaluating oral health status and documentation immediately post-intervention (July–August 2010) and 1 year later (July 2011). Assessments and data audits were undertaken on 2 of the LTC home's 4 units after receiving verbal consent from residents who were interested in participating.

Figure 1. RAI–MDS oral/dental status report

SECTION L: ORAL/DENTAL STATUS			
L1	ORAL STATUS AND DISEASE PREVENTION	(Check all that apply in LAST 7 DAYS.) a. Debris (soft, easily removable substances) present in mouth prior to going to bed at night b. Has dentures and/or removable bridge c. Some or all natural teeth lost—does not have or does not use dentures (or partial plates) d. Broken, loose, or carious teeth e. Inflamed gums (gingiva); swollen or bleeding gums; oral abscesses, ulcers or rashes f. Daily cleaning of teeth or dentures, or daily mouth care—by resident or staff g. NONE OF ABOVE	a b c d e f g

Onsite oral assessments were conducted using the RAI–MDS oral/dental assessment instrument and focused primarily on identifying residents' level of oral debris (Figure 1). Debris was measured using an index created by the BPC and RDH (Table 1) and was defined as the presence of any soft deposit (e.g., biofilm, plaque, food particles), which could be consistently removed on a twice-daily basis using oral physiotherapy aids (e.g., brush, floss, interproximal and tongue cleaners). Residents with an assessed debris level of minimal to abundant were considered positive for debris. It was also assumed that a resident had received daily oral care if debris was recorded as minimal or none. Dentures and restorations, natural

Table 1. Debris index

Debris level	Description
None	No debris present
Minimal	Debris along gum line
Moderate	Debris not covering more than 1/3 of teeth or tissue surfaces
Substantial	Debris covering 1/3 to 2/3 of teeth and tissue surfaces
Abundant	Debris covering greater than 2/3 of teeth and tissue surfaces

teeth, dental/oral problems, and cleaning methods/abilities were also recorded for each resident, and findings were compared across assessments to determine whether there was any change in oral health status.

Daily flow sheet documentation and RAI-MDS data were then compared with baseline oral assessments to identify any discrepancies. The daily flow sheet is completed by point-of-care staff and identifies the type of oral care provided (teeth, dentures, mouth) and the individual who completed the care (resident or staff). Post-intervention oral assessments were also compared with the flow sheet documentation. One-year post-intervention RAI-MDS data were not available for comparison.

The education intervention focused on skill instruction, with particular emphasis on providing oral care to residents with dementia. The intervention was delivered by the BPC and RDH to point-of-care staff as a 30–45 minute session, and consisted of viewing RNAO's *Oral Care for Residents with Dementia* video¹⁰ and photos of case examples, followed by a demonstration. Participants practiced oral care techniques on a resident volunteer while being observed by the RDH and BPC. Each participant was also given an Oral Care Pocket Docket,¹⁵ a condensed resource of information presented in the video. The educational session was offered 14 times over a 6-month period.

RESULTS

Pre-intervention findings

Onsite oral assessments, daily flow sheet documentation, and RAI-MDS data for 42 residents from 2 units were compared to establish the LTC home's baseline oral health status (Table 2). RAI-MDS data reported fewer residents with natural teeth, broken/loose/carious teeth, inflammation, and debris in comparison to oral assessment findings by the RDH. In fact, the RDH's assessment of minimal to no debris in 31% of residents suggested that only they had received oral care that day, while flow sheet documentation and RAI-MDS data reported that nearly all residents had received care (86% and 100%, respectively).

There was 0% prevalence of debris reported by the RAI-MDS compared to 88% prevalence recorded by the RDH. Additionally, daily flow sheet documentation indicated that 72% of the residents who were assessed by the RDH as having moderate to abundant levels of debris had staff perform their daily oral care.

Education intervention

About half (51%) of the LTC home's point-of-care staff attended the education session, which received "good" to "excellent" ratings from all participants. The original intention was to have participants practice oral care techniques on each other. However, at the first session several staff members refused to clean each other's mouths, which prompted the recruitment of a resident volunteer for this and all subsequent sessions. During practice, participants were often observed using incorrect, and sometimes harmful, techniques. For example, one participant caused obvious pain when he attempted to clean the resident's natural teeth. It was discovered that this participant had dentures and no recent experience cleaning his own mouth and natural teeth. At each education session the RDH corrected participants and ensured they were employing proper toothbrushing technique.

Post-intervention findings

Oral assessments of 38 residents from 2 units conducted immediately following the education intervention showed a modest reduction of oral debris; this improvement was sustained when the residents were assessed at 1-year follow-up (Figure 2). However, the prevalence of inflammation was found to be greater at post-intervention (23%) and at 1-year follow-up (27%) than assessed at baseline (19%).

RAI-MDS data and daily flow sheet documentation continued to show discrepancies. RAI-MDS data, available for only 1 unit, reported a 0% post-intervention prevalence of debris and inflammation compared to 84% prevalence of debris and 23% prevalence of inflammation recorded by the RDH. Post-intervention flow sheet documentation was not available for comparison.

Table 2. Comparison of RDH oral assessments, RAI-MDS data, and daily flow sheet documentation at pre-intervention (n=42)

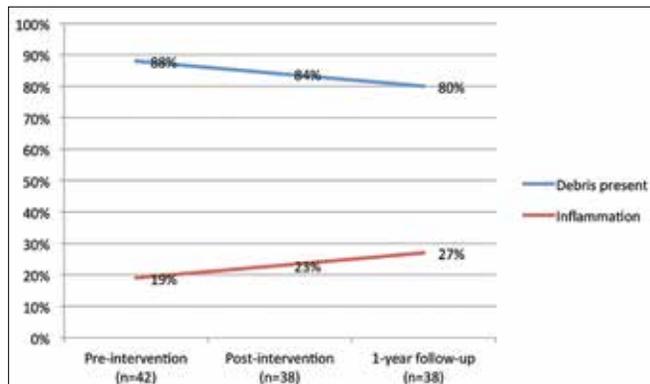
Oral/dental status	Oral RDH assessment % (n)	RAI-MDS LTC data % (n)	Daily flow sheet documentation % (n)
Some or all natural teeth	45 (19)	27 (13)	NA
Broken, loose or carious teeth	24 (10)	8 (4)	NA
Inflamed gums	19 (8)	0	NA
Dentures or removable bridge	69 (29)	NR	43 (18)
Debris present	88 (37)*	0	NA
Daily oral care provided	31 (13)**	100 (42)	86 (36)

NA = not applicable to documentation; NR = not reported

*Residents with minimal to abundant debris levels

**Residents with none to minimal debris levels

Figure 2. Prevalence of debris and inflammation assessed in LTC home residents at pre-intervention, post-intervention, and at 1-year follow-up



At 1-year follow-up, debris was present in 80% of assessed residents. Daily flow sheet documentation showed that 73% of residents had received daily oral care compared to 29% assessed by the RDH as having minimal to no debris. Daily flow sheet documentation showed that staff performed daily oral care for nearly all (91%) of the residents assessed as having moderate to abundant levels of debris.

DISCUSSION

Evidence may identify best practices for health care delivery, but ensuring their application and changing the behaviour of point-of-care staff are challenging. Although a modest reduction in oral debris was observed from pre-intervention (88%) to 1-year follow-up (80%), it remained a problem. Inflammation was observed in more residents one year following the intervention than at baseline (27% versus 19%). Furthermore, flow sheet observations suggested that a very high proportion of residents (91%) assessed with moderate to abundant levels of debris had staff assistance to perform daily oral care, raising concerns about the quality of the care provided. While the education intervention incorporated evidence-based best practices, nearly half of the staff (49%) did not attend the sessions. Similar to findings reported by others,¹⁶ the BPC and RDH concluded that the education intervention did not result in clinically meaningful improvements to oral care. Figure 3 provides two examples of oral/dental health status assessed by the RDH following the intervention.

Documentation recorded in both the daily flow sheets and the RAI-MDS contradicted onsite oral assessments and underreported dental/oral problems. Staff explained that daily flow sheet entries are frequently used to complete the RAI-MDS for daily oral care. This may explain why such large discrepancies were found in comparing oral assessments with both corresponding flow sheet documentation and RAI-MDS data. For example, onsite oral assessments 1 year following the intervention showed that only 29% of residents had no debris and received daily mouth care. Daily flow sheets reported that 73%

Figure 3. Post-intervention debris



of residents had received care. While the RAI-MDS data for the LTC home was unavailable for comparison, the provincial 2010–11 RAI-MDS data reported that nearly all Ontario LTC home residents had no debris and received daily mouth care (96.3% and 99.4%, respectively).¹⁷ The team's finding that the RAI-MDS oral/dental status severely underreported problematic conditions has also been reported by others.¹⁸ In fact, several researchers have noted concerns about the quality of data in other areas of the RAI-MDS.^{19–21}

While it is not unusual for documentation to contradict observations,²² when important information is missing or inaccurate, there is an increased potential for suboptimal clinical care, posing a significant risk to the health and safety of residents. Over 20 countries use the RAI-MDS in long-term care settings.²³ In Canada, the data are publicly reported and often used by managerial and policy decision makers to identify priorities for care planning, policy development, health care resourcing, and research. This is of grave concern when evidence suggests that the

RAI-MDS is not accurate in identifying LTC residents in need of oral care attention and dental treatment. Documentation discrepancies also suggest that nursing staff need to better understand what constitutes debris, broken/loose/carious teeth, and inflammation and how to assess and document oral/dental status accurately. As a result of this initiative, the RDH has been working with nursing staff responsible for conducting the RAI-MDS at LTC homes to clarify the categories of the RAI-MDS oral/dental status.

Organizational culture, including administration and leadership, also influences the quality of oral care services in LTC homes and was important in this initiative.²⁴ Leaders at the LTC home labelled all of the residents' dentures when it was discovered during the RDH's oral assessments that very few dentures were identifiable. Another benefit initiated by management included adding oral care education to the LTC home's mandatory orientation program for all newly hired point-of-care staff. Major changes that occurred within the management team of the LTC home also created significant challenges. During the course of this journey, staff turnover and vacancies in all key support roles, including the director of care, hindered the project. The BPC and RDH had discussed with leaders additional strategies to improve oral care delivery, including training "Oral Care Champions"²⁵ who would be responsible for continuing to implement RNAO's oral care BPG⁹ across the LTC home. However, there was a marked reduction in motivation to continue the oral care quality improvement initiative following these management changes, and engagement in the activities came to a premature halt.

In an environment in which there are many part-time and casual point-of-care workers, quality improvement projects quite easily lapse when key staff members leave. Two such leaders—an RN and PSW who were instrumental in supporting oral care best practices in the LTC home—had to direct their attention to other priorities. Eventually, the PSW returned to school and the funding ended for the RN to continue working on the initiative, leaving a leadership void at the point of care.

CONCLUSION

From this experience, several recommendations can be made to facilitate improvements in oral care for LTC residents. First, it is clear that an oral/dental daily assessment tool that connects, correlates, and is consistent with the RAI-MDS is urgently needed. As Jiang and

MacEntee suggest, "Computer software with standardized assessment protocols relating to oral health care might better align dental audits with general care plans and care pathways in LTC."²⁶ This refinement to documentation would be an extensive undertaking but perhaps a more plausible alternative than attempting to change the RAI-MDS for LTC homes.

The LTC sector should also consider the role of registered oral care professionals in the assessment and documentation of residents' oral/dental status. The RAI-MDS oral/nutritional status, for example, is completed by a registered dietitian who is responsible for conducting and documenting nutrition, chewing, and swallowing assessments. Certain oral care requirements are beyond the scope and role of PSWs, who constitute the greatest proportion of point-of-care staff in a LTC home, and residents' families are not usually aware of the need for a RDH to provide this care.²⁶ However, dental hygienists with appropriate knowledge, skills, and experience could provide accurate RAI-MDS assessments, identify residents who require attention, provide evidence-based oral care, and educate staff. In this manner, the RDH would effectively champion positive improvements in oral care delivery in LTC homes at the point of care.²⁷

Professional oral care services primarily follow a fee-for-service model in Canada. Although the public has high expectations for LTC home staff to keep residents safe, healthy, and comfortable, oral care is not a societal priority.²⁸ Given the high risk of health problems associated with poor oral health, there is an immediate need to increase interest in the oral care of LTC residents. Improved awareness among health care providers on whom residents are dependent for the delivery of this care, as well as among family and caregivers who are responsible for acquiring professional oral/dental services, is particularly important.

The Ontario Ministry of Health and Long Term Care's quality inspection program²⁹ in LTC homes, which includes questions about oral care, is a step in the right direction to keeping residents healthy and protecting their quality of life. However, it will only be through proactive investments targeted at public awareness, appropriate organizational infrastructure (staff, time, documentation, and material resources), and staff education that the journey toward oral health improvement in LTC homes will end in the delivery of high quality, resident-centred care.

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