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Best Practice Guideline

MAY 2020

Oral Health: Supporting Adults Who Require Assistance

Second Edition

RNAO
Registered Nurses' Association of Ontario
L'Association des infirmières et infirmiers autorisés de l'Ontario

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Declaration of Conflict of Interest

In the context of RNAO best practice guideline development, the term "conflict of interest" (COI) refers to situations in which a RNAO staff member or expert panel member's financial, professional, intellectual, personal, organizational or other relationships may compromise their ability to conduct panel work independently. Declarations of COI that might be construed as constituting a perceived and/or actual conflict were made by all members of the RNAO expert panel prior to their participation in guideline development work using a standard form. Expert panel members also updated their COI at the beginning of each in-person guideline meeting and prior to guideline publication. Any COI declared by an expert panel member was reviewed by the RNAO Best Practice Guideline Development and Research Team and expert panel co-chairs. No limiting conflicts were identified. See "Declarations of Conflicts of Interest Summary" at RNAO.ca/bpg/guidelines/oral-health-supporting-adults-who-require-assistance-second-edition.

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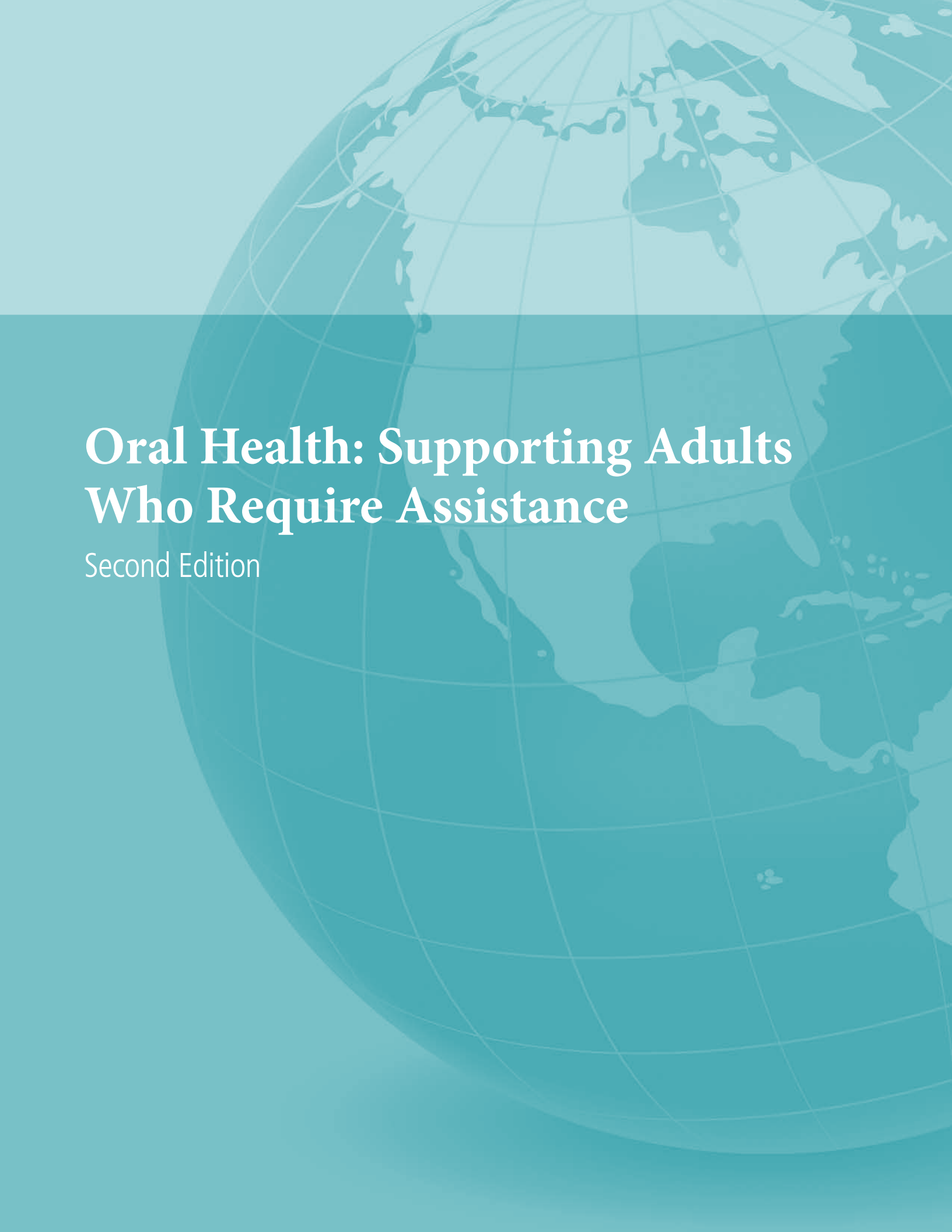


Oral Health: Supporting Adults Who Require Assistance

Second Edition

Greetings from Doris Grinspun,

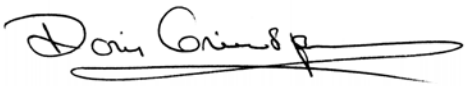
Chief Executive Officer, Registered Nurses' Association of Ontario

The Registered Nurses' Association of Ontario (RNAO) is delighted to present the second edition of the clinical best practice guideline (BPG) Oral Health: Supporting Adults Who Require Assistance. Evidence-based practice supports the excellence in service that health providers are committed to delivering every day.

We offer our heartfelt thanks to the many stakeholders who make our vision for BPGs a reality. First, and most important, we thank the Government of Ontario, which early on recognized RNAO's capacity to lead a program that has gained worldwide recognition and then committed to funding it. We also thank the co-chairs of the RNAO expert panel—Dr. Minn Yoon (Associate Professor, School of Dentistry at the University of Alberta) and Dr. Craig Dale (Assistant Professor at the Lawrence S. Bloomberg Faculty of Nursing, Scientist at the University of Toronto Centre for the Study of Pain and Clinician Scientist in Oral Health at the Sunnybrook Health Sciences Centre)—for their invaluable expertise and stewardship of this BPG. Thank you to RNAO staff, Giulia Zucal (Guideline Development Methodologist Co-Lead), Yonda Lai (Former Guideline Development Methodologist Co-Lead), Verity Scott (Guideline Development Project Coordinator), Megan Bamford (Associate Director, Guideline Development and Evaluation) and the rest of the RNAO Best Practice Guideline Development and Research Team for their intense and expert work in the production of this BPG. Special thanks to the expert panel for generously providing their time, knowledge and perspectives to deliver a rigorous and robust evidence-based resource that will guide the education and practice of millions of health providers. We couldn't have done it without you!

Successful uptake of BPGs requires a concerted effort from educators, clinicians, employers, policy-makers, researchers and funders. With their unwavering commitment and passion for excellence in patient care, the nursing and health communities provide the expertise and countless hours of volunteer work essential to the development of new and next edition BPGs. Employers have responded enthusiastically by becoming Best Practice Spotlight Organizations® (BPSOs®): they have sponsored best practice champions, implemented BPGs and evaluated their impact on patient and organizational outcomes. Governments at home and abroad have also joined in this awesome journey. Together, we are building a culture of evidence-based practice that benefits everyone.

We invite you to share this BPG with your colleagues from nursing and other professions, with the patient advisors who are partnering within organizations, and with the government agencies with which you work. We have so much to learn from one another. Together, we must ensure that the public receives the best possible care every time they come in contact with us—making them the real winners of this great effort!



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How to Use this Document

This **best practice guideline (BPG)**[G]* is a comprehensive document that provides guidance and resources for **evidence-based nursing practice**[G]. It is not intended to be a manual or "how-to" guide; rather, it is a tool to guide best practices and enhance decision making for **nurses**[G], the **interprofessional team**[G], **caregivers**[G], educators, health-service organizations, academic institutions, **persons**[G] and **families**[G]. This BPG should be reviewed and applied in accordance with the needs of individual health-service organizations, academic institutions or other practice settings, and with the preferences of adults (18 years and older) who require assistance to meet their **oral care**[G] needs. This document provides evidence-based **recommendation**[G] statements and descriptions of: (a) pragmatic practice, education and organizational policy; (b) benefits and harms; (c) values and preferences; and (d) health equity considerations.

Nurses, members of the interprofessional team, educators and administrators who lead and facilitate practice changes will find this document invaluable for developing policies, procedures, protocols and educational programs to support service delivery. Nurses and other members of the interprofessional team involved in direct care, and caregivers will benefit from both the recommendations and the supporting evidence.

If your health-service organization is adopting this BPG, we recommend that you follow these steps:

1. Assess your existing policies, procedures, protocols and educational programs in relation to the **good practice statement**[G], recommendations and supporting discussions of evidence included in this BPG.
2. Identify existing needs or gaps in your policies, procedures, protocols and educational programs.
3. Note the recommendations that are applicable to your setting and that can be used to address your organization's existing needs or gaps.
4. Develop a plan for implementing recommendations, sustaining best practices and evaluating **outcomes**[G].

Implementation resources, including the second edition of the Registered Nurses' Association of Ontario (RNAO) *Toolkit: Implementation of Best Practice Guidelines*—are available from RNAO.ca (1). A description of the *Toolkit* can be found in **Appendix Q**. For more information, please see the **Implementation Strategies**.

All of the RNAO BPGs are available for download, free of charge, on the RNAO website at RNAO.ca/bpg. To locate a particular BPG, search by keyword or browse by topic.

We are interested in hearing your feedback on this BPG and how you have implemented it. Please share your story with us at RNAO.ca/contact.

* Throughout this document, terms that are bolded and marked with a superscript G ([G]) can be found in the Glossary of Terms (see **Appendix A**).

Purpose and Scope

Purpose

RNAO BPGs are systematically developed, evidence-based documents that include recommendations on specific clinical, healthy work environment and health system topics. They are intended for nurses, members of the interprofessional team in direct care positions, caregivers, educators, administrators and executives, policy-makers, researchers, families and persons with lived experience in health-service and academic organizations. BPGs promote consistency and excellence in clinical care, administrative policies, procedures and education, with the aim of achieving optimal health outcomes for people, communities and the health system as a whole.

This BPG replaces the RNAO BPG *Oral Health: Nursing Assessment and Intervention*, which was released in 2008 (2). The purpose of this BPG is to provide nurses, the interprofessional team and caregivers with evidence-based recommendations for the provision of oral care for adults (18 years of age and older) that will: (a) promote an interprofessional approach to providing oral care, (b) enhance the delivery of oral care interventions, and (c) ultimately lead to positive **oral health**[G] outcomes for persons. This BPG recognizes that a **person- and family-centred**[G] approach to care is essential for providing oral care (or providing assistance with oral care) to adults across the continuum of care. This BPG also recognizes that when providing any form of oral care, infection control practices should be followed: please see **Appendix B** for evidence-based resources on the topics of person- and family-centred care and infection prevention and control (IPAC).

In November 2017, RNAO convened an expert panel to determine the scope of the second edition of this BPG and to develop **recommendation questions**[G] to inform the **systematic reviews**[G]. The RNAO expert panel was interprofessional, comprising of persons with lived experience and individuals with knowledge and experience in clinical practice, education, research and policy across a range of health-service organizations, academic institutions, practice areas and sectors. These experts shared their insights on providing oral care (or providing assistance with oral care) to adults across the continuum of care (e.g., persons in acute care, long-term care, rehabilitation or community care).

A comprehensive review and analysis was completed by the RNAO Best Practice Guideline Development and Research Team and the RNAO expert panel to determine the scope and priority recommendation questions for this BPG (see **Appendix C**).

Scope

To determine the scope of this BPG, the RNAO Best Practice Guideline Development and Research Team conducted the following steps:

- reviewed the RNAO BPG *Oral Health: Nursing Assessment and Intervention* (2);
- conducted a guideline search and gap analysis;
- undertook a review of the literature to determine available evidence on oral care interventions for adults;
- led six telephone key informant interviews with **health providers**[G], administrators and researchers;
- held two telephone discussion groups with health providers, **students**[G] entering health professions, administrators and researchers; and
- consulted with the expert panel.

Based on these steps, this BPG focuses on providing oral care across health settings to adults (18 years and older) who require assistance with oral care in a continuum that ranges from the set-up of oral care supplies to **full physical assistance**[G] with oral care. This BPG provides recommendations to support the delivery of oral care—including appropriate supervision, prompting and assistance—while still advocating for the person's independence and autonomy.

Specifically, this BPG addresses the following:

- a multi-component **oral care protocol**[G];
- **strategies**[G] and **techniques**[G] for the provision of oral care;
- education on oral health and care for health providers, caregivers, students entering health professions, persons and their families;
- an interprofessional approach to providing oral care;
- implementation strategies and tools;
- evaluation criteria related to recommendations; and
- future research opportunities and gaps in knowledge.

Key Concepts Used in this Best Practice Guideline

Caregiver: Any relative, partner, friend or neighbour who has a significant personal relationship with, and provides a broad range of assistance to, an adult with a chronic or disabling condition. These individuals may be primary or secondary caregivers and live with, or separately from, the person receiving care. Moreover, while some people receive care from paid caregivers, most rely on unpaid assistance from family, friends and neighbours (7).

Interprofessional approach to care: The delivery of quality care by multiple health providers working collaboratively within and across health-care settings (3). With respect to oral health, it is the promotion of oral health and the provision of oral care by multiple interprofessional team members (see "interprofessional team," below).

Interprofessional team: "A team comprised of multiple health providers (regulated and unregulated) who work collaboratively to deliver comprehensive and quality health care and services to people within, between and across health-care settings" (4). Key interprofessional team members supporting persons who require assistance with oral care may include: nurses, personal support workers, physicians, dentists, dental assistants, dental therapists, dental hygienists, denturists, dietitians, respiratory therapists, occupational therapists, occupational therapy assistants, speech-language pathologists (SLP), pharmacists and physiotherapists.

Oral care: Refers to the practice of assessing and caring for a person's oral cavity (mouth) to prevent and/or eliminate oral disease and/or the progression of existing oral diseases (5). Examples include: brushing of teeth, dentures, tongue and soft tissue; oral decontamination using a mouth rinse; interdental cleaning; and moisturizing oral tissue.

Oral care plan: A written plan of care, informed by an oral health history and assessment, that specifies a person's individualized oral care needs, including goals and preferences for oral care routines.

Oral care protocol: A multi-component, organization-level approach to standardize oral care for all persons receiving care. It includes a standardized oral health assessment, an **oral care plan**[G] guided by the individual's oral health assessment and step-by-step instructions to be followed when providing oral care to persons. It also lists the tools required to provide effective oral care. The oral care protocol is implemented by nurses and the interprofessional team (as appropriate to the knowledge and skill of the health providers) and it can be tailored based on the needs and preferences of the person.

Oral health: "Multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex" (6).

Oral health professional: Refers to regulated health providers who have received formal education and training specific to dental and oral health (e.g., dentists, dental hygienists, dental technologists and denturists).

Person: An individual who requires assistance with completing some or all of their oral care. This could range from support with the set-up of oral care supplies or providing cues/prompts/reminders to complete oral care, to full physical assistance with oral care. Exceptions to the use of this term occur when discussions in the literature (e.g., studies or reports) use alternative terms (e.g., patient, client or resident).

Persons who are behaviourally complex: Persons with cognitive, psychological or verbal impairments who may be exhibiting **responsive behaviours**[G] or **care-resistant behaviours**[G] during oral care. Responsive or care-resistant behaviours interrupt or impede oral care. These behaviours can be mild (e.g., clenching of the mouth or turning the head away) or extreme (e.g., hitting or kicking) (8). They include: grabbing of tools, health providers or caregivers; vocal responses to care; general agitation; repetitive statements or questions; and screaming (9).

It is important to note that responsive behaviours often indicate: (a) an unmet need in a person, whether cognitive, physical, emotional, social, environmental or other; or (b) a response to circumstances within the social or physical environment that may be frustrating, frightening or confusing to a person (10). Health providers need to explore the underlying cause (or causes) of responsive behaviours, and use strategies and techniques that "demonstrate compassion, validate emotions, support dignity and promote comprehension" (10).

Topics Outside the Scope of this Best Practice Guideline

The following conditions and topics are not covered within the scope of this BPG:

- infants, children and adolescents (i.e., persons younger than 18 years of age);
- oral care specific to the needs of pregnant women;
- oral care for adults who have oral care needs beyond the scope of nursing practice that should be provided by an **oral health professional**[G] (e.g., scaling, fillings or denture repair); and
- management of oral cancer and cancer-related treatments that go beyond routine oral care practices.

Recommendation Questions

Recommendation questions are priority areas of care identified by the expert panel that require a synthesis of the evidence to answer. These recommendation questions inform the **PICO research questions**[G] (population,

intervention, comparison, outcomes) that guide the systematic reviews and subsequently inform practice, education or organizational recommendations.

The following were the priority recommendation questions and outcomes developed by the RNAO expert panel that informed the development of this BPG.

- **Recommendation Question #1:** Should an interprofessional approach to oral care be recommended to improve outcomes for persons, health providers and students?

  Outcomes: Person's **oral health status**[G], **frequency of oral care**[G], knowledge and ability of health providers and students to provide oral care.

- **Recommendation Question #2:** Should an oral care protocol be recommended to improve outcomes for persons and health providers?

  Outcomes: Ventilator-associated pneumonia (VAP)[G], **hospital-acquired pneumonia (HAP)**[G], **knowledge and confidence of health providers in ability to assess changes in oral health status**[G].

- **Recommendation Question #3:** What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons?

  Outcomes: Person's oral health status, frequency of oral care.

- **Recommendation Question #4:** What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for **persons who are behaviourally complex**[G] and for health providers?

  Outcomes: Person's oral health status, frequency of oral care, person's responsive behaviours, knowledge and ability of health providers to provide oral care.

Note: These priority recommendation questions are condensed versions of the more comprehensive PICO research questions used to guide the systematic reviews and development of this BPG. For the PICO research questions and detailed process of how the RNAO expert panel determined these priority recommendation questions and outcomes, see **Appendix C**.

Good Practice Statement and Recommendations

The good practice statement and recommendations in this BPG provide nurses and the interprofessional team with guidance related to the delivery of oral care for adults who require assistance with oral care. The need for comprehensive theoretical and practical education for students entering health professions, health providers and caregivers is also addressed in the recommendations.

Specifically, this BPG covers the following main areas:

- **The good practice statement** is directed primarily to the nurses and interprofessional teams who provide care to persons and support for their families across the spectrum of care, including (but not limited to) primary care, acute care, home care and long-term care. It refers to a practice that is already accepted as beneficial or practical. The good practice statement is believed to be so beneficial that conducting a systematic review to prove its efficacy would be unreasonable. The resulting statement is not based on a systematic review and it does not receive a rating of the certainty or confidence in the evidence or strength (i.e., a rating of conditional or strong) (11).
- **Practice recommendations**[G] are primarily directed at nurses and the interprofessional team who provide direct care to persons and support for their families across the spectrum of care, including (but not limited to) primary care, acute care, home-care and long-term care.

- **Education recommendations**[G] are directed at those responsible for the education of nurses and other health providers (e.g., educators, quality improvement teams, managers, administrators, and academic and professional institutions). These recommendations outline content and training strategies for entry-level health programs, ongoing education and professional development.
- **Organization recommendations**[G] apply to managers, administrators and policy-makers who are responsible for developing policy or securing supports within health-service organizations that enable the implementation of best practices.

See **Appendix F** for an algorithm that depicts the good practice statement and all recommendations in this Guideline that can be implemented in practice settings.

RNAO BPGs and Other Resources that Align with this Best Practice Guideline

Other RNAO BPGs and evidence-based resources may support implementation of this BPG. See **Appendix B** for RNAO BPGs and other evidence-based resources on the following related topics:

- client-centred learning;
- delirium, dementia and depression in older adults;
- implementation science, implementation frameworks and resources;
- infection prevention and control (IPAC);
- interprofessional collaboration;
- oral health promotion; and
- person- and family-centred care.

Interpretation of Evidence and Strength of Recommendations

RNAO BPGs are developed using the **Grading of Recommendations, Assessment, Development and Evaluation (GRADE)**[G] method. For more information about the guideline development process, including the use of GRADE methods, refer to **Appendix C**.

Certainty of Evidence

The certainty of evidence (i.e., the level of confidence we have that an estimate of effect is true) for quantitative research is determined using GRADE methods (12). After synthesizing the evidence for each prioritized outcome, the certainty of evidence is assessed. The overall certainty of evidence is determined by considering the certainty of evidence across all prioritized outcomes per recommendation. GRADE categorizes the overall certainty of evidence as *high*, *moderate*, *low* or *very low*. See **Table 1** for definitions of these categories.

Table 1: Certainty of Evidence

CERTAINTY OF EVIDENCE	DEFINITION
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Source: Reprinted from The GRADE Working Group. Quality of evidence. In: Schunemann H, Brozek J, Guyatt G, et al., editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown; publisher unknown]; 2013. Table 5.1, Quality of evidence grades. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.wsfivfhuxv4r. Reprinted with permission.

Note: The assigned certainty of evidence can be found directly below each recommendation statement. For more information on the process of determining the certainty of evidence and the documented decisions made by the RNAO Guideline Development Methodologists, please see **Appendix C**.

Strength of Recommendations

Recommendations are formulated as *strong* or *conditional* by considering the certainty of evidence and the following key criteria:

- balance of benefits and harms,
- values and preferences, and
- health equity.

See **Discussion of Evidence** for the definitions of these criteria.

Strong Recommendation

"A strong recommendation reflects the expert panel's confidence that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation *for* an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation *against* an intervention)" (12). A strong recommendation implies that the majority of persons will be best served by the recommended action (12).

Conditional Recommendation

A conditional recommendation reflects the expert panel's confidence that while some uncertainty exists, the desirable effects probably outweigh the undesirable effects (i.e., conditional recommendation *for* an intervention) or that the undesirable effects probably outweigh the desirable effects (i.e., a conditional recommendation *against* an intervention) (12). A conditional recommendation implies that not all persons will be best served by the recommended action and that "there is a need for more careful consideration of personal circumstances, preferences and values" (12).

Note: The strength of the recommendation statement is detailed directly below each recommendation statement and within the **Summary of Recommendations**. For more information on the process the expert panel used for determining the strength of each recommendation, see **Appendix C**.

Discussion of Evidence

The Discussion of Evidence that follows each recommendation includes the following main sections:

1. **Benefits and Harms:** Identifies the potential desirable and undesirable outcomes reported in the literature when the recommended practice is used. Content in this section includes research from the systematic review.
2. **Values and Preferences:** Denotes the relative importance or worth placed on health outcomes from following a particular clinical action from a person-centred perspective. This section also denotes preferences of health providers in relation to following the recommended practice. Content for this section may include research from the systematic reviews and, when applicable, observations and/or considerations from the RNAO expert panel.
3. **Health Equity:** Identifies the potential impact that the recommended practice could have on health across different populations or settings, and/or the barriers to implementing the recommended practice in particular settings. This section may include research from the systematic reviews and, when applicable, observations and/or considerations from the RNAO expert panel.

4. **Expert Panel Justification of Recommendation:** Provides a rationale for why the expert panel made the decision to rate a recommendation as strong or conditional.
5. **Practice Notes:** Highlights pragmatic information for nurses and the interprofessional team. This section may include supporting evidence from the systematic reviews and/or other sources (e.g., other BPGs or the RNAO expert panel).
6. **Supporting Resources:** Includes a sample list of relevant resources (e.g., websites, books and organizations) that support the recommendations. Content listed in this section was not part of the systematic review and therefore not all content was quality appraised. As such, the list is not exhaustive and the inclusion of a resource in one of these lists does not imply an endorsement from RNAO.

Summary of Recommendations

This BPG replaces the RNAO BPG *Oral Health: Nursing Assessment and Intervention* (2008) (2).

GOOD PRACTICE STATEMENT

Good Practice Statement:

The expert panel recommends that, as part of their admission assessment, health providers obtain and document a person's:

- oral health history;
- current state of oral health; and
- oral hygiene beliefs and practices, including their self-care abilities.

This is a "good practice statement" that does not require application of the GRADE system.

PRACTICE RECOMMENDATIONS

RECOMMENDATIONS	STRENGTH OF THE RECOMMENDATION
Recommendation 1.0: The expert panel suggests that health providers follow a multi-component oral care protocol that includes: ■ an oral health assessment using a standardized approach and/or validated tool appropriate to the person and health setting; ■ an individualized oral care plan; ■ step-by-step instructions for oral care, including tooth and denture brushing; and ■ identification of required oral care tools and supplies.	Conditional
Recommendation 2.0: The expert panel suggests that health providers educate persons and caregivers on the following topics: ■ oral health and the benefits of oral care; ■ oral care techniques and procedures using return demonstration; ■ establishing oral care practices; and ■ how to use oral care tools and/or supplies.	Conditional

RECOMMENDATIONS	STRENGTH OF THE RECOMMENDATION
Recommendation 3.0: The expert panel suggests that health providers use person-centred approaches to provide oral care to persons who are behaviourally complex, including: ■ environmental adaptations; ■ verbal and/or non-verbal communication strategies; and ■ selection and modification of oral care tools and supplies.	Conditional
Recommendation 4.0: The expert panel suggests that health providers document specific successful strategies and techniques in an individualized oral care plan that can be used when providing oral care to persons who are behaviourally complex.	Conditional

EDUCATION RECOMMENDATIONS	
RECOMMENDATIONS	**STRENGTH OF THE RECOMMENDATION**
Recommendation 5.0: The expert panel suggests that academic institutions implement interprofessional oral care education for students entering health professions.	Conditional
Recommendation 6.0: The expert panel suggests that health-service organizations provide education and training on oral care to health providers facilitated by an oral health professional. Education and training includes: ■ theoretical oral health knowledge, including the definition of oral health, the risk factors for oral diseases and the methods of preventing them; and ■ practical oral care skills, including toothbrushing and denture cleaning techniques.	Conditional
Recommendation 7.0: The expert panel suggests that health-service organizations provide education to health providers that includes interactive hands-on training to identify and implement strategies and techniques that can be used when providing oral care to persons who are behaviourally complex.	Conditional

ORGANIZATION RECOMMENDATION	
RECOMMENDATION	**STRENGTH OF THE RECOMMENDATION**
Recommendation 8.0: The expert panel suggests that health-service organizations implement an interprofessional approach for the provision of oral care.	Conditional

Best Practice Guideline Evaluation

As you implement the recommendations in this BPG, we ask that you consider how you will monitor and evaluate its implementation and impact.

The Donabedian model informs the development of indicators for evaluating quality health care. It includes three categories: structure, process and outcome.

- Structure describes the required attributes of the health system, health-service organization or academic institution to ensure quality care. It includes physical resources, human resources, and information and financial resources.
- Process examines the health activities being provided to, for, and with persons or populations as part of the provision of quality care.
- Outcome analyzes the effect of quality care on the health status of persons and populations, health workforce, health-service organizations, or health systems (13).

For additional information, please refer to the second edition of the RNAO *Toolkit: Implementation of Best Practice Guidelines, Second Edition* (1).

Tables 2, **3** and **4** provide potential structure, process and outcome measures to assess BPG success. It is important to evaluate evidence-based practice changes when implementing a BPG. Select the measures most relevant to the practice setting. There are few data repositories or indicator libraries available for oral health in Ontario and Canada. The following measures will support quality improvement and evaluation.

Table 2 provides potential structure measures associated with all recommendation statements to assess attributes related to human resources.

Table 2: Structure Measures for Overall BPG Success

STRUCTURE MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
Percentage of health providers educated and trained on providing oral care for persons ***Numerator:*** Number of health providers educated and trained on providing oral care for persons ***Denominator:*** Total number of health providers	New

Table 3 supports the evaluation of practice changes during implementation. The measures are directly associated with specific recommendation statements and support process improvement.

Table 3: Process Measures for Overall BPG Success

RECOMMENDATION	PROCESS MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
Good Practice Statement	Percentage of newly admitted persons for whom an oral health history was completed on admission or upon initiation of care ***Numerator:*** Number of newly admitted persons for whom an oral health history was completed on admission or upon initiation of care ***Denominator:*** Total number of newly admitted persons	Partial NQuIRE®[1] Partial RAI-MDS[2]
Good Practice Statement **Recommendation 1.0**	Percentage of newly admitted persons for whom an oral health assessment was completed on admission or upon initiation of care ***Numerator:*** Number of newly admitted persons for whom an oral health assessment was completed on admission or upon initiation of care ***Denominator:*** Total number of newly admitted persons	Partial NQuIRE®[1] Partial RAI-MDS[2]
Recommendation 1.0	Percentage of persons who have an individualized oral care plan ***Numerator:*** Number of persons who have an individualized oral care plan ***Denominator:*** Total number of persons with a documented oral health history and assessment	NQuIRE®[1]

Table 4 provides potential outcome measures associated with all recommendation statements to assess overall BPG implementation success.

Table 4: Outcome Measures for Overall BPG Success

OUTCOME MEASURES	MEASURES IN DATA REPOSITORIES/ INSTRUMENTS
Percentage of persons who received oral care at least two times per day ***Numerator:*** Number of persons who received oral care at least two times per day ***Denominator:*** Total number of persons	NQuIRE®[1] Partial RAI-MDS[2]
Percentage of persons whose oral health stayed the same or improved while receiving care in a health-service organization ***Numerator:*** Number of persons whose oral health stayed the same or improved while receiving care in a health-service organization ***Denominator:*** Total number of persons	NQuIRE®[1]

[1] Nursing Quality Indicators for Reporting and Evaluation (NQuIRE®)

[2] Resident Assessment Instrument – Minimum Data Set (RAI-MDS)

Other RNAO resources for the evaluation and monitoring of BPGs:

- Nursing Quality Indicators for Reporting and Evaluation® (NQuIRE®), a unique nursing data system housed in the International Affairs and Best Practice Guidelines Centre, allows Best Practice Spotlight Organizations® (BPSOs®) to measure the impact of BPG implementation by BPSOs® worldwide. The NQuIRE® data system collects, compares and reports data on guideline-based, nursing-sensitive process and outcome indicators. NQuIRE® indicator definitions are aligned with available administrative data and existing performance measures wherever possible, adhering to a "collect once, use many times" principle. By complementing other established and emerging performance measurement systems, NQuIRE® strives to leverage **reliable**[G] and valid measures, minimize reporting burden and align evaluation measures to enable comparative analyses. The international NQuIRE® data system was launched in August 2012 to create and sustain evidence-based practice cultures, optimize patient safety, improve patient outcomes and engage staff in identifying relationships between practice and outcomes to advance quality and advocate for resources and policy that support best practice changes (14). Please visit RNAO.ca/bpg/initiatives/nquire for more information.
- **BPG Order Sets**™[G] embedded within electronic records provide a mechanism for electronic data capture of process and outcome measures. The ability to link structure and process indicators with specific client outcome measures aids in determining the impact of BPG implementation on specific health outcomes. Please visit RNAO.ca/ehealth/bpgordersets for more information.

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Background Context

Significance of Oral Care to Health

Oral care refers to the practice of assessing and caring for a person's oral cavity to prevent and/or eliminate oral disease and/or the progression of existing oral diseases (5). Examples include: brushing of teeth, dentures, tongue and soft tissue; oral decontamination using a mouth rinse; interdental cleaning; and moisturizing tissue. The World Dental Federation defines oral health as "multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex" (6). Good oral care is integral to achieving optimal oral health (5), and it assists with the intake of nutrition, enables clear verbal communication and increases wellness (15).

Inadequate oral care may be associated with oral and systemic diseases. The most common oral diseases worldwide include **dental caries**[G], **periodontal (gum) disease**[G] and oral infectious diseases (e.g., oral herpes, cold sores and fever blisters due to fungal and viral infections) (16). Systemic diseases linked to bacterial colonization of the oral cavity—such as teeth, dentures, tongue and oral mucous membranes—include the following:

- respiratory infections (17);
- cerebrovascular infarction (18);
- coronary artery disease (19); and
- cardiovascular disease risk (20).

Emerging evidence suggests that a number of systemic inflammatory diseases may be associated with the inflammatory burden caused by **periodontitis**[G] in particular (i.e., inflammation of the gums and supporting structures of the teeth). These include:

- Alzheimer's disease and dementia (21);
- type I and type 2 diabetes mellitus (22); and
- rheumatoid arthritis (23).

Oral care needs are often not addressed to the same level as other health needs, and some populations are at greater risk for poor oral health than others (24, 25). Providing good oral care is an essential element for supporting oral and overall health, and well-being.

Populations at Risk for Poor Oral Health

Some populations may be at greater risk for poor oral health, either because of challenges with self-care abilities or because they are not receiving adequate oral care support from health providers or caregivers. These populations include persons who require assistance with oral care, those who require hospitalization and/or ventilation, and those who are behaviourally complex (25–27, 42–47).

Persons Who Require Assistance with Oral Care

Physical limitations due to age, arthritis, poor eyesight or disability leave many individuals unable to perform their own oral care, placing them at greater risk for poor oral health (26, 27). Persons who have suffered a stroke can experience hemiparesis (i.e., weakness or the inability to move on one side of the body) of the upper limb, making it difficult for them to effectively hold a toothbrush and brush their teeth (28). For older adults, functional disability,

decreased hand–eye coordination and loss of autonomy may create limitations for oral care, including an inability to visit an oral health professional (29). For residents in long-term care, there are significant practice gaps between the current provision of oral care by health providers and the recommended need for assistance with daily oral care (30). This places residents at risk for developing poor oral health, including untreated **halitosis**[G], dental caries, **gingivitis**[G] and periodontitis (16, 25, 31). In fact, in a Canadian cross-sectional study published in 2018 and conducted by Yoon et al., 43.2 per cent of residents in long-term care were observed to have inadequate denture hygiene and 79.6 per cent of residents were observed to have moderate-to-severe gingival inflammation (32).

Persons Who are Medically Compromised

Persons who are medically compromised can also be at risk for poor oral health and systemic complications arising from poor oral care. Healthy persons usually have a normal defense mechanism to clear **oropharyngeal**[G] or gastric contents; however, persons who are medically compromised (e.g., those with impaired pulmonary defenses, neurologic disorders, oropharyngeal weakness or an altered level of consciousness, or those using sedatives) may be more likely to aspirate oropharyngeal or gastric contents (33).

Aspiration[G] refers to the process when oropharyngeal or gastric material enters the airway and passes below the vocal cords (34). When these secretions are colonized with bacteria (from the oral cavity, throat or respiratory tract), an infectious response develops in the lungs and increases the risk for **aspiration pneumonia**[G] (33). Good oral care can help minimize the amount of bacteria in the oral cavity, which reduces the bacterial load in orogastric secretions and the subsequent development of aspiration pneumonia (35).

Aspiration pneumonia that occurs in health-service organizations (e.g., hospital or rehabilitation) can be classified in one of two ways: hospital-acquired pneumonia (HAP) or ventilator-associated pneumonia (VAP). HAP refers to inflammation of the lung tissue that is caused by agents not present in an individual when they were admitted to hospital (or within 48 hours of their admission) (33, 36). VAP refers to the occurrence of a lower respiratory tract infection that develops 48 hours (or longer) after initiation of mechanical ventilation by means of an endotracheal tube or tracheostomy (33, 37). The pathogens associated with HAP and VAP are similar; thus, similar preventive strategies can be used (38).

Although limited research has been conducted on HAP, emerging evidence suggests that HAP can drastically increase a person's length of stay in hospital. For instance, Baker and Quinn found that 57.7 per cent of patients who acquired HAP outside of the intensive care unit (ICU) had a hospital stay of more than 15 days, and 37.3 per cent had a hospital stay of more than 20 days (compared to 5 per cent whose length of stay was less than 15 days) (39). Of the patients with HAP who required an ICU admission, 40.8 per cent spent more than 20 days in hospital (39). Importantly, increased lengths of stay in hospital have been associated with high morbidity and mortality rates (33).

VAP occurs in persons who are critically ill and require invasive medical equipment to maintain airway patency and/or respiratory function (40). Medical equipment can include an endotracheal or tracheostomy tube for mechanical ventilation. Pathogenic bacteria can colonize the oropharyngeal space and medical equipment, and subsequently spread to the person's lungs, leading to pneumonia (41). VAP is the leading cause of death associated with a hospital-acquired infection (33). Those who develop VAP have a 46 per cent rate of hospital mortality (compared to 32 per cent for ventilated patients who do not develop VAP). VAP is also associated with 7.6 more days of ventilator support, 8.7 more days in the ICU and 11.5 more days of total hospital stay (33).

Persons Who are Behaviorally Complex

Persons who are behaviourally complex include persons with cognitive, psychological or verbal impairments who may exhibit responsive behaviours, including grabbing, vocal responses to care, general agitation, repetitive statements or questions and screaming (9). Meeting the oral care needs of persons who are behaviourally complex can be challenging. Responsive behaviours in this population are a common barrier to the provision of good oral care, because persons appear to refuse to partake in oral care by clenching their mouth, turning their head away or hitting/kicking (8, 42–44). A lack of training and education on basic oral care—and strategies and techniques for providing oral care for persons who are behaviourally complex—also makes the provision of oral care challenging for regulated and unregulated health providers (25) and caregivers. This puts the oral health status of this population at risk.

Research demonstrates that older adults with a diagnosis of dementia may have worse oral health than individuals without dementia (45), and that they may be three times more likely to suffer from tooth decay (46). People with intellectual or developmental disabilities also face barriers to receiving good oral care. Health providers and caregivers have difficulty meeting the oral health needs of this population when responsive behaviours cannot be managed, and they may only clean the front teeth because they are easier to access than the ones towards the back of the mouth (24).

Barriers to Oral Care Provision

When individuals are hospitalized and unable to tend to their oral health needs, the task frequently becomes the responsibility of health providers, who may not have sufficient education and training in oral care (47). Health providers often report that oral care is not a priority for them, and it therefore becomes a task that is ignored or inconsistently performed (48, 49). Moreover, as Kiyoshi-Teo and Blegen found, adherence to an oral health guideline in ICUs was difficult due to health providers being afraid of hurting patients, a lack of dental supplies and oral health professionals, and an inadequate understanding among health providers of the benefits of oral care (50). Other barriers to the provision of oral care noted by nurses in ICUs include difficulties visualizing the oral cavity and difficulties with the insertion of oral hygiene aids into the mouth for the purpose of providing care (51).

Even though some health providers may have a general understanding of the link between oral health and overall health, they lack detailed knowledge about oral health and confidence in their ability to provide effective oral care (52). Appropriate oral health education for students in academic institutions—and continued professional development for health providers in health-service organizations—can improve attitudes and knowledge about oral health, reinforcing oral health practices and understanding (53, 54).

Conclusion

Persons who require assistance with oral care require support from health providers and caregivers to ensure their health needs are fulfilled. When a person's oral health needs are not met, there can be negative effects on the oral cavity and overall health.

RNAO recognizes the importance of oral health as a vital component to overall health and well-being. This BPG provides evidence-based recommendations to support nurses, the interprofessional team and caregivers to meet and achieve the oral health needs of persons.

Good Practice Statement

GOOD PRACTICE STATEMENT:

The expert panel recommends that, as part of their admission assessment, health providers obtain and document a person's:

- oral health history;
- current state of oral health; and
- oral hygiene beliefs and practices, including their self-care abilities.

This is a "good practice statement" that does not require the application of the GRADE system.

Understanding a person's oral health history, their current state of oral health, their oral health practices and their beliefs about oral hygiene is good clinical practice and a pre-requisite for providing nursing and other clinical interventions.

The National Institute for Health and Care Excellence (NICE) in the United Kingdom recommends that for persons living in a care home (i.e., persons who have 24-hour accommodations with either non-nursing care or nursing care), an assessment of oral care needs should be made upon admission (55). Although this recommendation is specific to residents in a care home, it is reasonable to assume that all persons, regardless of the health-care setting, should receive an assessment of their health-care needs—including their current oral care needs. That assessment should take place on admission to the health-care setting or before the initiation of care, and it should inform the subsequent plan of care.

In addition to the assessment of the person's current state of oral health, an oral health history should be taken that incorporates information about the person's self-perceived oral health, beliefs, preferences and attitudes, and past experiences with respect to oral hygiene (56). This will assist with providing holistic and person-centred care, structuring the care around the person, supporting the establishment of a therapeutic relationship between the health provider and the person, and increasing the person's satisfaction with health-care services (57). It is also crucial to ascertain the person's current oral care practices and self-care abilities, because evidence consistently shows that people with complete dependence have poorer oral hygiene than those with partial dependence (58).

Practice Notes

- See **Appendix G** for two examples of admission oral health history forms that can be implemented within health-service organizations.
- See **Appendix H** for a list of risk factors that can lead to poor oral health.
- See **Appendix I** for sample oral health assessment tools.
- The expert panel noted that health providers should also reflect on their own beliefs and practices with respect to oral care. Personal beliefs and practices can influence oral care provided to persons.
- Health providers need to be aware of aspiration risk before providing oral care (see the caution box on p. 34). "Persons should be screened for risk factors for aspiration or **dysphagia**[G], and evaluated for dysphagia if risk factors are present." (59). This should be performed by a health-care provider with the appropriate knowledge and skill, and within their legislative scope of practice. For more information regarding aspiration risk, preventing aspiration in adults with dyshpagia, and aspiration pneumonia, see the Canadian Patient Safety Institute's Hospital Harm Improvement Resource: Aspiration Pneumonia (59), available from: https://www.patientsafetyinstitute.ca/en/toolsResources/Hospital-Harm-Measure/Documents/Resource-Library/HHIR%20Aspiration%20Pneumonia.pdf.

Practice Recommendations

RECOMMENDATION 1.0:

The expert panel suggests that health providers follow a multi-component oral care protocol that includes:

- an oral health assessment using a standardized approach and/or validated tool appropriate to the person and health setting;
- an individualized oral care plan;
- step-by-step instructions for oral care, including tooth and denture brushing; and
- identification of required oral care tools and supplies.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

An oral care protocol is a multi-component, organization-level approach to standardize oral care for all persons receiving care. Studies examined one or more of the following components of an oral care protocol:

- an oral health assessment using a standardized approach and/or validated tool (37, 61–66);
- an individualized oral care plan (62);
- step-by-step oral care instructions (37, 61–63, 65, 66); and
- a list of the oral care supplies and tools needed to complete the protocol (37, 61–63, 65, 66).

Findings suggest that implementing a multi-component oral care protocol may decrease the rates of both hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP) (37, 61–63, 66). The implementation of a protocol also may improve the ability of health providers to assess changes in the oral health status of persons (64). The certainty in the body of evidence for this recommendation was very low due to: (a) serious limitations in how the studies were conducted; (b) inconsistencies in how the rates of HAP and VAP were measured and/or reported; and (c) because a majority of the studies were limited to persons in critical and/or acute care settings. None of the studies identified any harms related to the use of a multi-component oral care protocol.

An Oral Health Assessment Using a Standardized Approach and/or Validated Tool

An oral health assessment using a standardized approach and/or validated tool is a systematic and comprehensive assessment of the structures in and around a person's oral cavity. It is done to determine their oral health status. This assessment should include all the structures in and around the mouth—such as the lips, tongue, palate (roof of the mouth), gingiva (gums), mucus membrane (insides of lips and cheeks), teeth and condition of dentures (if applicable)—in addition to the odour of the breath (halitosis), cleanliness of the oral cavity (e.g., minimal **plaque**[G] build-up) and presence of dental pain (64).

Studies included in the systematic review occurred in a variety of settings (i.e., community, intensive care and acute care) and thus used different oral health assessment approaches and/or tools, such as:

- a modified version of the Oral Health Assessment Tool (OHAT) (64);
- Beck Oral Assessment Scale (BOAS) (66);
- Barnason's Oral Assessment Guide (1998) (OAG) (37);
- Bedside Oral Exam (BOE) (63); and
- generic nursing assessment of the oral cavity (61, 62, 65).

The evidence suggests that when health providers use a standardized approach and/or a validated oral health assessment tool, they may have a better ability to measure changes in oral health (64). It also may reduce the rates of HAP or VAP (37, 61–63, 65, 66). Please refer to **Appendix I** for a list of oral health assessment tools and **Appendix J** for a sample of the OHAT and The Holistic and Reliable Oral Health Assessment Tool (THROAT).

An Individualized Oral Care Plan

An individualized oral care plan guides health providers on interventions to be completed when providing daily oral care (67). The plan is based on the individual's oral health assessment, and it should be reviewed and updated every time the oral health assessment is completed (68). Evidence suggests that when health providers conduct an oral health assessment in conjunction with a documented oral care plan, there may be a reduction in VAP rates (62). See **Appendix K** for two examples of oral care plans.

Step-by-Step Instructions for Oral Care, including Tooth and Denture Brushing

Most studies outlined interventions in the oral care protocol as step-by-step instructions for health providers to follow (37, 61, 62, 65, 66). Tooth or denture brushing was included in all oral care protocols (37, 61–63, 65, 66). In addition to tooth or denture brushing, all studies except one included the use of oral rinses (37, 61, 62, 65, 66).

Other common oral care interventions included:

- re-positioning the person's head and/or body to accommodate better oral care provision (37, 62);
- tongue scraping/brushing (63–65);
- brushing **oral mucosa**[G] (63, 65);
- moisturizing the lips (61, 63, 66);
- oral suctioning to remove remaining solutions, excess saliva and debris, if necessary (61, 62, 65, 66); and/or
- removal, cleaning and re-insertion of the oropharyngeal airway, if necessary (66).

Although no evidence was identified that outlined specific management strategies for different oral health conditions, the evidence did suggest that when health providers followed step-by-step instructions for oral care, a reduction in the rate of VAP or HAP may occur (37, 61–63, 65, 66). See **Appendix L** for a series of diagrams that depict toothbrushing techniques. See **Appendix M** for a series of diagrams that depict how to care for dentures.

Caution: The expert panel highlighted that persons identified as being at risk for aspiration may require supervision by a health provider when oral care is being performed. This includes when the person is using toothpaste, as it can be aspirated. Oral rinses are not advised for persons at risk for aspiration.

Identification of Required Oral Care Tools and Supplies

A number of studies emphasized that an oral care protocol should clearly specify the oral care supplies and tools required to implement the oral care protocol adequately (61, 63, 65). Prendergast et al. (63) and Robertson and Carter (61) also specified that each patient's oral care supplies need to be kept at the bedside to be easily accessible for health providers and caregivers.

Oral care supplies and tools identified in the literature included:

- pediatric-sized toothbrushes (i.e., "small-headed") for ICU patients at risk for VAP (37, 66);
- an electronic (i.e., powered) toothbrush (63);
- toothpaste (65);
- suctioning equipment (61, 65);
- mouth rinses (e.g., normal saline 0.9% solution or chlorhexidine rinse) (37, 61, 62, 65, 66); and
- lip moisturizer (61, 63, 65, 66).

The evidence suggests that when an oral care protocol specifies the necessary oral care supplies and tools, there may be a reduction in the rate of VAP or HAP (37, 61–63, 65, 66). See **Appendix N** for a list of tools and products that can be used for oral care.

Values and Preferences

Robertson and Carter found that families were more satisfied with the cleaner mouths of persons; nurses also felt the protocol made the provision of oral care easier, because having the patient-specific oral care tools at the bedside increased efficiency and patient comfort (61). Moreover, the SLPs in the study felt the protocol improved the oral health of patients with dysphagia, which allowed for the earlier initiation of an oral diet (61).

Prendergast et al. found that nurses had higher satisfaction in performing oral care when a protocol was implemented (63). This was due to the fact that, as part of the implementation process, the health-service organization was required to provide appropriate oral care supplies and tools, such as powered toothbrushes, effective mouth rinses and toothpaste. In one qualitative study, nurses valued a daily oral health care plan being included in the patient's information system because it improved the oral care provided, and it helped independent patients in their daily self-care practices (52).

Health Equity

Implementation of a multi-component oral care protocol could improve health equity by standardizing the approach to oral care for all persons across all care settings. However, health equity may vary, because the success of implementing a multi-component oral care protocol is limited by several factors: the organization's access to

educators with specific expertise in oral health, variability between educational approaches used by educators, and inconsistent availability of educational refreshers to reinforce the oral care protocol. Moreover, budget constraints may limit the availability of oral care products and supplies purchased by health-service organizations.

Expert Panel Justification of Recommendation

There were no harms reported in the literature. The expert panel agreed that persons would value a multi-component oral care protocol as it may minimize their risk of developing HAP or VAP. However, the certainty of the evidence was very low and therefore, the expert panel determined the strength of the recommendation to be conditional.

Practice Notes

- The expert panel advised that all persons should receive an oral health assessment on admission and on an ongoing basis. There is no consistent agreement in the literature regarding the timing of ongoing assessments; thus, it is the responsibility of the health-service organization to set a time frame for when assessments should be completed and to clearly communicate this decision to health providers as part of the implementation plan. Oral care provided to persons based on their oral health assessment and plan of care should be monitored, evaluated and changed accordingly.
- The expert panel advised that if a change in oral health is noted while providing oral care this should initiate a full oral health assessment.
- It should be noted that not all oral health assessment tools have been validated in all practice settings; some tools are more appropriate for specific clinical populations (e.g., persons who are mechanically ventilated). Therefore, when selecting an assessment tool to use in practice, consideration should be given to the applicability of the tool to the setting and population (55).
- Health professionals with expertise in oral health (e.g., dental professionals or a health provider who specializes in oral health) should provide education for health providers on how to correctly use the selected assessment tool and document findings (64). Qualified educators should also be available for refreshers. Compliance and sustainability of a multi-component intervention is higher if health providers have an understanding of the importance of an oral care protocol (69).
- Persons who require assistance with oral care should be cued, supervised or provided with toothbrushing ideally, at least twice a day. Toothbrushing frequency at least twice a day is referenced by the Ontario Dental Hyienists' Association, the Canadian Dental Association and the American Dental Association (70, 130, 142, 143). Oral care twice a day is also a requirement under the Long-Term Care Homes Act and Regulation in Ontario (188). The quality (technique) of the toothbrushing is also an important consideration. See **Appendix N** for toothbrushing techniques from the Canadian Dental Association.
- When oral medication is crushed and mixed with a sweetened product (e.g., apple sauce or yogurt), health providers should cue or provide oral care afterwards, especially if the medication is administered before bed. This could minimize the rate of dental caries that are caused by sugar settling on teeth. However, it is important to note that oral care should be delayed for 30 to 60 minutes after the ingestion of acidic food and/or beverages (e.g., soft drinks or citrus fruit): evidence suggests that the acid can soften the tooth's surface and that enamel loss is exacerbated by brushing (70, 71).
- For persons with teeth, fluoride toothpastes should be used. Fluoride toothpaste should be used twice a day to brush teeth to prevent dental caries (72).
- When providing oral care it is important to recognize that the oral mucosa is delicate; debris (if present) should be wiped, and then the tongue should be brushed.

- The expert panel advised, in addition to moisturizing the lips, it is also important to moisturize the oral cavity, especially when the person is receiving enteral nutrition. This will avoid the buildup of membranous substances (187).
- When providing oral care to persons who have advanced airways, adjustments may need to be made to the endotracheal or tracheal tube (37, 62, 63, 66). The endotracheal tube should be moved to rest on the opposite side of the mouth in order to prevent device-related pressure injury.
- The expert panel noted that persons should be provided with containers to hold their dentures. Dentures, denture containers and all other oral care supplies (e.g., toothbrushes, toothpaste and lip moisturizer) should be labeled with the person's name to ensure proper infection control practices are followed and that supplies are not inadvertently shared between different persons (see **Appendix B** for infection control resources).

Supporting Resources

RESOURCE	DESCRIPTION
Alberta Health Services (AHS). Mouth care decision tree document [Internet]. Edmonton (AB): AHS; 2016. Available from: http://extcontent.covenanthealth.ca/Policy/VII-C-110%20Mouth%20Care%20Decision%20Tree%20Document.pdf	■ Outlines knowledge, skills and abilities that are required to implement three key elements of an oral health framework: oral assessment and care planning, daily mouth care and referral to dental professionals as required. ■ Includes flow charts and diagrams outlining mouth care planning with RAI-MDS outcome scales and decision trees.
Brushing up on mouth care [Internet]. Halifax (NS): Dalhousie University; 2020. Available from: http://brushingup.ca/	■ An educational website for caregivers who provide oral care to individuals in long-term care and home support agencies, or for anyone in continuing care assistant education programs or with an interest in caring for dependent older adults. ■ Includes examples of tool kits, care cards and assessment forms, and it provides educational videos and an information sheet on a variety of oral health conditions, oral health products and aids.
Dental Hygiene Canada; the Canadian Dental Hygienists Association. Denture care: daily denture and mouth care [Internet]. [place unknown]: Dental Hygiene Canada; 2015. Co-published with Canadian Dental Hygienists Association. Available from: https://www.dentalhygienecanada.ca/pdfs/dhcanada/seniors/DENTURE_CARE_helpful_hints.pdf	■ A one-page document that outlines helpful information about daily denture and mouth care.

RESOURCE	DESCRIPTION
Doshi M. Mouth care matters: a guide for hospital healthcare professionals [Internet]. England: National Health Service (UK); 2017. Available from: https://www.noeccn.org.uk/resources/Documents/Benchmarks%20Guidelines/Mouthcare/Mouth%20Care%20Matters.pdf	■ A comprehensive guide for health professionals that covers topics such as why oral health is important for hospitalized patients, diet and oral health, various oral diseases and how to assist patients with mouth and denture care.
Fraser Health Authority (FHA). Clinical protocol: oral hygiene adult – independent, acute care [Internet]. [place unknown]: FHA; 2017. Available from: https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Student-Practice-Education/201810_clinical_protocol_oral_hygiene_adult_independent_acute_care.pdf	■ Clinical protocol that outlines how to provide oral hygiene to patients in an acute care setting to decrease the risk of non-ventilator-associated HAP.
Fraser Health Authority (FHA). Oral health: adult – integrated standards for residential care facilities and group homes [Internet]. [place unknown]: FHA; 2017. Available from: https://www.fraserhealth.ca/-/media/Project/FraserHealth/FraserHealth/Health-Professionals/Student-Practice-Education/201810_clinical_protocol_oral_health_adult_integrated_standards_for_residential_care.pdf	■ Outlines best practices to guide the care of persons in residential care facilities and group homes. ■ Provides information about the oral care required and the equipment and procedures, as well as any concerns and documentation.
Lewis A, Fricker A. Better oral health in residential care professional portfolio: oral health assessment toolkit for older adults [Internet]. Adelaide (SA): South Australian Dental Services; 2009. Available from: https://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/resources/better+oral+health+in+residential+care+professional+portfolio+oral+health+assessment+toolkit+for+older+people	■ A resource that includes pictures and written information about what health providers should consider when conducting an oral health assessment. ■ A toolkit that provides examples of different common oral diseases and problems, an oral health assessment tool, helpful hints for providing oral care to long-term care residents and medications that may affect a person's oral health.

RESOURCE	DESCRIPTION
National Institute for Health and Care Excellence (NICE), Social Care Institute for Excellence (SCIE). Improving oral health for adults in care homes: A quick guide for care home managers [Internet]. London (UK): NICE, SCIE; c2018. Available from: https://www.nice.org.uk/improving-oral-health-for-adults-in-care-homes	■ Resource to support managers to improve the oral health of adults in care homes. ■ Includes a visual oral health assessment tool.
Oral Health Assistive Devices. In: Ontario Dental Hygienists' Association (ODHA) [Internet]. Burlington (ON): ODHA; c2019. Available from: https://odha.on.ca/your-oral-health/dental-care-aides/	■ Resource on how to use assistive devices, including toothbrushes, toothpaste, dental floss, interdental stimulators, wedge stimulators, interdental brushes and oral irrigators.
Oral Health Topics: Mouthwash (Mouthrinse). In: American Dental Association (ADA) [Internet]. Chicago (IL): ADA; [updated 29 August 2019]. Available from: https://www.ada.org/en/member-center/oral-health-topics/mouthrinse	■ Outlines key points about mouthwashes, including the different types and the clinical considerations and provides information for patients.
Tran K, Butcher R. Chlorhexidine for oral care: a review of clinical effectiveness and guidelines [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2019. Available from: https://cadth.ca/sites/default/files/pdf/htis/2019/RC1064%20Chlorhexidine%20for%20oral%20care%20Final.pdf	■ A rapid response report that reviews and critically appraises the literature on the clinical effectiveness of chlorhexidine for oral care in hospitalized patients.

RECOMMENDATION 2.0:

The expert panel suggests that health providers educate persons and caregivers on the following topics:

- oral health and the benefits of oral care;
- oral care techniques and procedures using return demonstration;
- establishing oral care practices; and
- how to use oral care tools and/or supplies.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Low

Discussion of Evidence

Benefits and Harms

Evidence suggests that educating and training persons and their caregivers may improve both the oral health status of persons and the frequency with which oral care is received (48, 74, 75). The following education and training topics were addressed in the identified studies:

- oral health and the benefits of oral care (48, 75);
- oral care techniques and procedures using a demonstration and **return demonstration**[G] teaching method (48, 74);
- establishing oral care practices (48, 74, 75); and
- how to use oral care tools and/or supplies (74, 75).

The certainty in the body of evidence for this recommendation was low due to limitations in how the studies were conducted, the variability in measurement tools used across the studies to assess oral health status and the small number of study participants included. There were no harms identified in the literature with respect to health providers educating and training persons and their caregivers about oral care.

The key topics included in the education sessions for persons and caregivers and the associated health outcomes are outlined below. Please refer to **Table 5** under **Practice Notes** for more information about how the education was delivered.

Oral Health and the Benefits of Oral Care

Evidence suggests that when persons and/or their caregivers receive education on the nature of oral health and its benefits, this may improve the oral health status of persons (48, 75).

Oral Care Techniques and Procedures Using Return Demonstration

Evidence suggests that when a person and/or their caregiver receives training on how to complete oral care—and when they are given the opportunity to repeat the techniques under the supervision of the trainer (i.e., return demonstration)—the frequency of oral care may increase and the oral health status of persons may improve (48, 74). Return demonstration ensures that the skills and techniques that the person and/or caregiver are taught are effectively implemented. If the demonstration with return demonstration cannot be done in person, videoconferencing may be an effective strategy that health providers can use to provide comprehensive and ongoing education for persons (74).

Establishing Oral Care Practices

Evidence suggests that when a person and/or their caregiver received education on how to incorporate oral care into the person's daily routine, this may increase the frequency of oral care performed and may improve the oral health status of the person (48, 74, 75).

How to Use Oral Care Tools and/or Supplies

Evidence suggests that when a person or their caregiver receives education on how to use oral care tools or supplies, the frequency of oral care and the oral health status of the person may increase (74, 75).

Values and Preferences

Providing oral health education to persons and caregivers requires an assessment of the learning needs and concerns of the person and caregiver prior to the delivery of the education. For example, older adults who have been hospitalized prefer oral health information that is tailored to their requests and oral care needs (76). Tailoring education sets the foundation for the person and caregiver to engage in the process of receiving and understanding the information that is presented.

Access to education and training by videoconference led to improvements in oral care, and this method of communication was preferred over telephone-based communication because it was more personal (74). Participants felt more aware of their own oral health, and they put more effort into their oral care by establishing an oral hygiene routine. However, participants became frustrated with videoconferencing when technical problems arose, such as the video freezing or lagging (74).

Health Equity

Although videoconferencing is an effective means of increasing access to oral care education and training, particularly for those who have limited time and resources to visit a health provider, it does require access to high-speed internet, which can be an economic and geographic barrier (74).

Expert Panel Justification of Recommendation

There were no harms reported in the literature. The expert panel attributed high value to even small improvements in the oral health status of persons and the frequency of oral care they receive. However, the certainty of the evidence was low suggesting that education may increase the oral health status of persons and the frequency of oral care they receive. Therefore, the expert panel determined the strength of the recommendation to be conditional.

Practice Notes

- The expert panel advised that education and training for persons and caregivers should be based on a learning needs assessment, and reinforcing education through ongoing refreshers can ensure that knowledge and skills are sustained. See the **Supporting Resources** for a link to RNAO's BPG on facilitating learning.
- The expert panel noted the importance of persons and caregivers also being educated on the risk factors for oral disease (including medications the person is taking and the potential impact they may have on oral health), how to prevent oral diseases, and how to recognize the signs and symptoms of oral disease. This would help to minimize a person's risk of oral health issues. See **Appendix H** on risk factors for oral disease.
- Health providers who are educating persons and caregivers about oral care should themselves be educated and have experience and expertise in oral health. See **Recommendations 6.0** and **7.0** for more on the education and training of health providers.

Table 5: Details of Key Topics in Oral Health Education for Persons and Their Caregivers

EDUCATIONAL TOPICS	DETAILS FROM THE EVIDENCE
Oral health and the benefits of oral care	■ Definition of key terms (e.g., dental plaque, gingivitis, periodontitis or soft-bristle toothbrush) explained in plain language by a dental hygienist (48) or in a pamphlet (75). ■ Written material about what oral health is, what oral care practices are and what risks exist when oral diseases are not identified and treated (75). ■ Overview of how dental plaque can lead to the development of gingivitis and periodontitis (48).
Oral care techniques and procedures through return demonstration	■ Persons and their caregivers were shown a video of toothbrushing techniques. The caregiver was then asked to practice the techniques on themselves and on the person requiring assistance with oral care, while the dental hygienist provided guidance and corrective feedback until they were satisfied with the caregiver's abilities (48). ■ Caregivers observed the dental hygienist demonstrating oral care and were then required to demonstrate the technique in return (75). ■ Nurses demonstrated toothbrushing and tongue cleaning to caregivers; the caregivers were then required to demonstrate the oral care procedures in return (74). **Note:** Cleaning of the tongue can induce vomiting or a gag reflex. However, educating persons and their caregivers about proper tongue cleaning techniques (e.g., relaxing the tongue and throat muscles and exhaling during cleaning) can prevent this from occurring (75).
Establishing oral care practices	■ Caregivers were informed about brushing the patient's teeth twice a day: once in the morning and once in the evening (48). ■ An education pamphlet was provided to caregivers that addressed the frequency and duration with which oral care should be performed each day (75). ■ An occupational therapist taught various strategies to help patients develop new oral care habits to ensure oral care would be sustained (74).
How to use oral care tools and/or supplies	■ Persons who have experienced a stroke and their caregivers received education from a trained nurse on how to use a dual-action tongue cleaner (i.e., brush and scraper that removes plaque, food debris and dead cells from the surface of the tongue) and a toothbrush (75). ■ To assist persons with **tetraplegia**[G] to conduct their own oral care, an occupational therapist provided education and training on how to use a powered toothbrush, two types of interdental tools and a universal holder (if necessary). These supplies were given to the persons (74).

Supporting Resources

RESOURCE	DESCRIPTION
Adult oral health. In: National Institute of Dental and Craniofacial Research (NIH) [Internet]. [place unknown]: National Institutes of Health (USA); c2018. Available from: https://catalog.nidcr.nih.gov/OrderPublications/#101	■ Provides numerous documents and information sheets for persons and/or caregivers on a range of topics, including brushing, flossing, dry mouth, diabetes and oral health. ■ Some resources are also available in Spanish.
Brushing up on mouth care [Internet]. Halifax (NS): Dalhousie University; 2020. Available from: http://brushingup.ca/	■ An educational website for caregivers who provide oral care to individuals in long-term care or home support agencies, or for anyone in continuing care assistant education programs or with an interest in caring for dependent older adults. ■ Includes examples of tool kits, care cards and assessment forms, and it provides educational videos and an information sheet on a variety of oral health conditions, oral health products and aids.
Canadian Dental Hygienists Association (CDHA). Talking points: whole body health requires oral health [Internet]. [place unknown]: CDHA; 2015. Available from: https://files.cdha.ca/profession/resources/FactSheet_WholeBody_printerFriendly_final2.pdf	■ One-page document that outlines how oral health affects the body, including the respiratory system, reproductive system (pregnancy), endocrine system (diabetes), cardiovascular system, and growth and development. It also covers the side effects of therapies (e.g., radiation and chemotherapy).
Caregivers Nova Scotia for friends & family giving care [Internet]. Nova Scotia: Caregivers Nova Scotia; c2019. Available from: https://caregiversns.org/	■ Provides an extensive array of resources for caregivers.
Dental Care for Seniors. In: Canadian Dental Association (CDA) [Internet]. [place unknown]: CDA; c2019. Available from: https://www.cda-adc.ca/en/oral_health/cfyt/dental_care_seniors/	■ Online resource for older adults and caregivers. ■ Topics covered include the four main types of dentures and how to care for them, what to expect during a dental exam performed by a dental professional, how to brush and floss, and tips for caregivers who care for the mouths of others.

RESOURCE	DESCRIPTION
Dental Hygiene Canada. Denture care [Internet]. [place unknown]: Canadian Dental Hygienists Association; 2015. Available from: https://www.dentalhygienecanada.ca/pdfs/dhcanada/seniors/DENTURE_CARE_caregiver.pdf	■ A one-page resource that provides advice for caregivers on how to care for dentures, including the materials required and the approach to use.
Dental Hygiene Canada; Canadian Dental Hygienists Association. Dry mouth [Internet]. [place unknown]: Canadian Dental Hygienists Association; 2015. Available from: https://www.dentalhygienecanada.ca/pdfs/dhcanada/seniors/dry-mouth.pdf	■ A one-page resource outlining what dry mouth is, what causes it, which medications may contribute to it, and what persons can do to prevent and/or treat it.
How to Spot Trouble. In: Canadian Dental Association (CDA) [Internet]. [place unknown]: CDA; c2019. Available from: https://www.cda-adc.ca/en/oral_health/cfyt/dental_care/spot_trouble.asp	■ Quick guide outlining common dental problems and their warning signs.
Oral Health—Good for LifeTM. In: Canadian Dental Association (CDA) [Internet]. [place unknown]: CDA; c2019. Available from: https://www.cda-adc.ca/en/oral_health/cfyt/good_for_life/	■ Online resource that outlines five steps to a healthy mouth.
Patient Education Materials. In: Ontario Dental Association (ODA) [Internet]. Toronto (ON): ODA; 2019. Available from: https://www.youroralhealth.ca/patient-resources	■ Patient education materials to view and/or download. ■ Topics include general oral health, oral health conditions, oral health and overall health condition and information about personal oral care.
Registered Nurses' Association of Ontario (RNAO). Facilitating client-centred learning. [Internet]. Toronto (ON): RNAO; 2012. Available from: RNAO.ca/bpg/guidelines/facilitating-client-centred-learning	■ A guideline that provides health providers with recommendations to facilitate client-centred learning that promotes and enables persons to take action for their health.

RECOMMENDATION 3.0:

The expert panel suggests that health providers use person-centred approaches to provide oral care to persons who are behaviourally complex, including:

- environmental adaptations;
- verbal and/or non-verbal communication strategies; and
- selection and modification of oral care tools and supplies.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

The following strategies were implemented in the literature when caring for persons who are behaviourally complex: environmental adaptations, verbal and/or non-verbal communication, and appropriate selection and modification of oral care tools and supplies. Evidence suggests that using person-centred strategies when providing oral care to persons who are behaviourally complex may improve their oral health status (8, 24, 77–81). It also may slightly increase the frequency of oral care provided (24, 81, 82) and reduce the rate of responsive behaviours (8).

The certainty in the body of evidence for this recommendation was very low due to limitations in how the studies were conducted, use of different tools or methods to measure outcomes across studies, and the small number of study participants. There were no harms related to the use of person-centred strategies when caring for persons who are behaviourally complex.

Environmental Adaptations

Generally, environmental adaptations consisted of creating a less stimulating atmosphere to reduce patient stress before beginning oral care. Environmental adaptations found in the literature included the following:

- changing the location where oral care was provided to create a calming environment (24, 77, 81);
- performing oral care in a location that was physically accessible to the person (e.g., at a bedside table rather than a sink) (77, 81); and
- utilizing **threat reduction strategies**[G], which reduce a person's perception of threat (8, 81).

Regardless of the specific interventions, environmental adaptations may improve a person's oral health status (8, 24, 77, 81). They also may increase the frequency with which oral care is provided (24, 81). Refer to **Appendix P** for a list of threat reduction strategies that can be used during oral care for persons who are behaviourally complex.

Verbal and/or Non-Verbal Communication Strategies

Verbal **communication strategies**[G] include spoken words to convey information; non-verbal communication strategies rely on the use of body language (e.g., facial expression, posture and gestures) to relay information from one person to another.

Verbal communication strategies found in the literature included:

- **encouraging comments**[G] (8, 24, 81, 82);
- one-step instructions (8);
- verbal repetition of task instruction (82);
- use of the person's name (82); and
- explanation of tasks (81, 82).

Non-verbal communication strategies found in the literature included:

- approaching the person in a calm and consistent manner (8, 81);
- using eye contact (8, 81);
- handing an object to the resident to prompt him or her (82); and
- using gentle touch to cue the person to assist in oral care or gain the attention of the person when they are distracted (8, 81, 82).

Regardless of the specific interventions, using verbal and/or non-verbal communication strategies may improve the frequency of oral care provided (24, 82) and reduce the rate of responsive behaviours for persons who are behaviourally complex (8). Refer to **Appendix O** for a list of communication strategies that can be used when providing oral care to persons who are behaviourally complex.

Individualized Selection and Modification of Oral Care Tools and Supplies

Oral care tools and supplies can include any tool or device that helps a health provider complete oral care to a person who is behaviourally complex. Appropriate selection of oral care tools and supplies found in the literature included magnifying mirrors for patients who could independently perform oral care but had accessibility difficulties and ergonomically designed toothbrushes (77). Some studies also used ultrasonic devices to clean the dentures of long-term care residents, and they found consistent evidence to suggest that ultrasonic devices may improve denture hygiene index scores in persons who are behaviourally complex (78–80). Importantly, selection of the tools and supplies should be based on the oral health goals of the person who is behaviourally complex and/or their caregiver, and on their individual care needs (as determined by their oral health assessment and oral care plan). Regardless of the intervention implemented, the studies found that the utilization of appropriate oral care tools and supplies may improve the oral health status of persons who are behaviourally complex (77-80). Refer to **Appendix N** for a list of oral care tools and products.

Values and Preferences

Implementation of ultrasonic devices to clean dentures was preferred by health providers because they were easy to use in their daily routine and were less time-consuming (compared to brushing dentures by hand) (80).

Patients who participated in a study by Connell et al. reported that when barriers were removed (e.g., when the physical environment was modified to reflect their needs and abilities), they were able to be more independent with their own oral care (with appropriate assistance from health providers), and that their teeth felt cleaner and "slick" (77).

Health Equity

The high cost of some dental supplies, such as ultrasonic devices, may limit access for persons of lower socioeconomic status which perpetuates health inequities.

Expert Panel Justification of Recommendation

There were no harms reported in the literature. The expert panel attributed high value to the use of person-centred approaches which may lead to small improvements in the oral health status and the frequency with which oral care occurs for persons who are behaviourally complex. However, there was very low certainty in the evidence and therefore, the expert panel determined the strength of the recommendation to be conditional.

Practice Notes

- The expert panel noted that health providers need to explore the underlying cause (or causes) of responsive behaviours (see the full definition of responsive behaviours in **Appendix A**) and/or when a person appears to refuse oral care. Persons who are behaviourally complex may respond to unmet needs or threats in their environment in different ways; therefore, strategies need to be tailored to the specific needs of the person (10). Health providers should conduct initial and ongoing assessments to customize care depending on the unique oral care needs and health goals of the person. A refusal to partake in oral care could be an indication of a change in oral health and may require a referral to an oral health professional.
- The expert panel noted that use of the person's name, verbal praise, paraphrased repetition, closed-ended questions and verbatim repetition are frequently used communication strategies when caregivers provide oral care to persons with dementia (186).
- The expert panel also highlighted that person-centred approaches need to be documented in the individual's oral care plan to ensure consistency in care across health providers and caregivers (see **Recommendation 4.0** for more information).

Supporting Resources

RESOURCE	DESCRIPTION
Dental care. In: Alzheimer Society Canada [Internet]. Toronto (ON): Alzheimer Society Canada; 2017. Available from: https://alzheimer.ca/en/Home/Living-with-dementia/Day-to-day-living/Personal-care/Dental-care	■ Provides information on dental care, including tips for oral care, information about medications and oral health and signs of oral disease.
Brushing up on mouth care [Internet]. Halifax (NS): Dalhousie University; 2020. Considerations for Dementia [video file]. Available from: http://brushingup.ca/considerations-for-dementia/	■ Video that focuses on mouth care for older adults. ■ Topics include what is dementia, brushing techniques and responsive behaviours.
Halton Region. Basic oral care: keep it simple [Internet]. [place unknown]: Halton Region Health Department; 2012. Available from: https://ltctoolkit.RNAO.ca/sites/default/files/resources/Basic_Oral_Care_August2012.pdf	■ A PowerPoint presentation about oral care. Topics discussed include: caregiver reluctance to provide oral care, how to time daily oral care, basic supplies needed to provide oral care, positioning and preparing the patient for oral care and how to approach oral care for persons with dementia.
Jablonski R. Providing Mouth Care for Persons with Dementia FULL VIDEO [video file]. In: YouTube [Internet]. 24 August 2016. Available from: https://www.youtube.com/watch?v=UlDL3YQPDNY	■ A video demonstrating techniques that can be helpful when providing care to persons with dementia who refuse or resist mouth care.
MacDonald I. Oral Care Approaches when Residents have Expressive Behaviours [video file]. In: YouTube [Internet]. 15 February 2017. Available from: https://www.youtube.com/watch?v=ntcCpfOZBPE	■ Webinar produced by the RNAO Oral Care Community of Practice. ■ Provides strategies and approaches for oral care for persons who have expressive behaviours.
MacDonald I. Oral Care Best Practices for Residents with Responsive Behaviour: Approaches and Strategies [video file]. In: YouTube [Internet]. 20 May 2016. Available from: https://www.youtube.com/watch?v=oFS1c-qpCeE	■ Webinar sponsored by RNAO that reviews approaches and strategies when providing oral care to persons with responsive behaviours. ■ Video is approximately 34 minutes in length.

RESOURCE	DESCRIPTION
Scott D, van der Horst ML, Bowes D. Approaches for oral care: interventions for residents in long-term care with responsive behaviours, communication or functional impairments [Internet]. Hamilton (ON): Regional Geriatric Program Central (RGPC); 2007. Available from: http://admin.rgpc.ca/uploads/documents/approaches%20for%20oral%20hygiene%20care%20reference%20tool.pdf	■ Interventions for persons in long-term care with responsive behaviours or communication/functional impairments.
Terry Kirkpatrick: Videos [user profile]. In: YouTube. Available from: http://www.youtube.com/user/Terrykirkpatrick1/videos?sort=dd&live_view=500&flow=list&view=0	■ A 13-part video series on oral health that provides information about various oral health topics, such as diabetes, dementia, dry mouth, stroke, palliative care, bad breath, care planning, infection control, dentures, the 2-toothbrush technique, tools and oral assessments (OHAT).
The Pines Education Institute of SW Florida. "How to Help a Person with Dementia Brush their Teeth" with Teepa Snow [video file]. In: YouTube [Internet]. 12 December 2012. Available from: https://www.youtube.com/watch?v=93ixNssks1c	■ A YouTube video demonstrating how to brush the teeth of a person with dementia.

RECOMMENDATION 4.0:

The expert panel suggests that health providers document specific successful strategies and techniques in an individualized oral care plan that can be used when providing oral care to persons who are behaviourally complex.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

Strategies are any plans of action taken by health providers that increase their ability to provide care. Techniques are the way in which health providers carry out a particular task (e.g., handling a toothbrush or selecting a modified tool). An individualized oral care plan is usually developed by the interprofessional team in conjunction with the person and their caregiver; this is done by using pertinent information, such as a person's medical history, individual oral care needs, values and preferences and oral care goals. An individualized oral care plan is an essential person-centred tool used by health providers to coordinate, document and guide care for a specific person. An oral care plan can be included as a component of the person's overall health care plan or as a separate document.

To ensure that health providers have the necessary information to provide oral care successfully to persons who are behaviourally complex, three studies had health providers document oral care strategies and techniques for persons who are behaviourally complex within the person's individualized oral care plan. When an interprofessional team did this, evidence suggests that the knowledge and ability of health providers to provide oral care may improve slightly (24). Similarly, the frequency of oral care provided to persons who are behaviorally complex may increase, and the oral health status of persons who are behaviourally complex may improve (24, 77, 83). The certainty in the body of evidence for this recommendation was determined to be very low due to limitations in how the studies were designed, the differences in how the oral health status of persons were assessed across studies and the small number of study participants.

Examples of how individualized oral care plans were used in the literature are as follows:

- In a long-term care facility, Samson et al. displayed the person's individualized oral care plan using plastic-coated care cards hung on the bathroom wall of each patient's room (83). The individualized oral care plan included details related to how and when oral care should be provided.
- Binkley et al. had health providers document all strategies (i.e., environmental adaptations, verbal and/or non-verbal communication strategies, and the appropriate selection of oral care tools and supplies) in the overall care plan, which was reviewed and updated as necessary (24).
- Connell et al. implemented individualized oral care plans that included any environmental adaptations needed and instructions on how to cue patients during oral care (77). The research team also used reminder notices posted in the resident's room to ensure oral care plans were implemented (77).

Caution: If care cards are used to document the person's individualized care plan, caution should be taken to protect the person's privacy by ensuring that the care cards are not exposed and that jurisdictional privacy legislation is being followed. In Ontario, the P*ersonal Health Information Protection Act,* 2004, is the relevant legislation (84). Care cards can be used as guides for developing oral care plans and/or integrating them into electronic documentation.

See **Appendix O** for a list of communication strategies that can be used when providing oral care to persons who are behaviourally complex. See **Appendix P** for a list of threat reduction strategies that can be used during oral care for persons who are behaviourally complex.

Values and Preferences

Some health providers noted that documenting successful oral care strategies was burdensome (24). Nursing staff appreciated oral care cards, because they provided information on how a resident's care should occur, and managers liked the cards because it provided information that was: (a) readily available to all staff (including those who were new or temporary); and (b) presented the information in picture format (83). In Connell et al., health provider response varied: some staff positively valued the care plan, because it was organized and less time was required to prompt the patient, while others felt they did not have time to read and implement the plan (77). This led to a change in the care plans from text-based to sketches/diagrams of the setup.

No literature was identified that reported on the values and preferences of persons and caregivers with respect to utilizing an individualized oral care plan.

Health Equity

No studies were found within the systematic review that directly assessed the impact that documenting strategies and techniques in an individualized oral care plan had on health equity. However, improving oral care for persons who are behaviourally complex has the potential to reduce health inequities as this population is more likely to have their oral care needs go unmet (8, 42-44).

Expert Panel Justification of Recommendation

The expert panel attributed high value to health providers documenting strategies and techniques in an individualized oral care plan because such an approach may lead to improvements in the oral health status of persons who are behaviourally complex and to the frequency with which they receive oral care. There were no harms identified in the literature. The certainty of the evidence was very low and the expert panel therefore determined the strength of the recommendation to be conditional.

Practice Notes

- Although there were no harms identified in the systematic review as a result of documenting strategies and techniques in an oral care plan, it is important to note that persons who are behaviourally complex can appear to resist oral care and it is possible for health providers to be harmed when providing oral care if the person who is behaviourally complex engages in responsive behavior. This causes persons who are behaviourally complex to be at risk for poor oral health (42, 44).

- The expert panel noted that documenting unsuccessful strategies can also be beneficial to include in the individualized oral care plan, helping health providers know what behaviours to avoid in order to prevent negative oral care experiences.
- See **Appendix K** for two examples of oral care plans that include sections for successful and unsuccessful oral care strategies.

Supporting Resources

RESOURCE	DESCRIPTION
Oral care cards. In: Brushing up on mouth care. [Internet]. Halifax (NS): Dalhousie University; 2020. Available from: http://brushingup.ca/resources-en/	■ Examples of oral care cards that are used to outline the steps for providing oral care to persons with natural teeth or partial/full dentures, as well as those who have difficulty swallowing.
Connell BR, McConnell ES, Francis TG. Tailoring the environment of oral health care to the needs and abilities of nursing home residents with dementia. Alzheimer's Care Today. 2002;3(1):19-25.	■ Provides a diagram depicting a sketch of an oral care setup from a care plan.
Registered Nurses' Association of Ontario (RNAO). Oral care for residents with dementia [video file]. In: YouTube. 14 December 2009. Available from: https://www.youtube.com/watch?v=MP576ht84Fg	■ A six-part video series produced by RNAO that demonstrates strategies and techniques that health providers and caregivers can use when providing oral care.

Education Recommendations

RECOMMENDATION 5.0:

The expert panel suggests that academic institutions implement interprofessional oral care education for students entering health professions.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

Interprofessional education involves health providers and/or students from different health professions "learn[ing] from and about each other to improve collaboration and quality of care" (85). Education broadly includes theory and practical skill, as well as time for students to reflect on their personal oral health beliefs and care practices (94).

Multiple studies were identified within the literature that incorporated interprofessional oral health education into the curriculum for students entering health professions. The educational interventions included students in dentistry or dental hygiene programs working alongside of students from one or more of the following professions: nurse practitioner and midwifery (86), physician assistant (87–89), medicine (90, 91) or physiotherapy (92). In a number of studies, the oral health curriculum was developed through collaboration between different professional faculty members (87–92).

There was a range of educational modalities adopted within the studies, including:

- clinic observation (87);
- didactic lectures (86–90, 92)
- group discussion (90, 92); and/or
- simulation lab practices (86–89, 91, 92).

Although none of the studies directly compared interprofessional oral care education to non-interprofessional oral care education, the evidence suggests that this approach may improve student knowledge and ability with respect to oral health and the provision of oral care (86, 88–92). This evidence was of very low certainty due to serious limitations in how the studies were designed, inconsistencies in how the outcomes were measured and small numbers of study participants. None of the studies identified any harms related to implementing interprofessional oral care education for students entering health professions. See **Practice Notes** for specific details of the educational subjects and how they were covered.

Values and Preferences

The evidence indicates that students enrolled in a health professional program value learning through an interprofessional collaborative approach (88, 91, 93). Some students noted that the most informative components for improving their knowledge included learning how to perform an oral examination in a clinical simulation lab and practicing oral care provision on simulated patients (88).

Health Equity

No studies were found within the systematic review that directly assessed the impact of interprofessional oral care education for students entering health professions on health equity.

Expert Panel Justification of Recommendation

There were no harms reported in the literature. The expert panel attributed high value to the benefits of increasing the oral health knowledge and skills of students. However there was very low certainty in the evidence and therefore, the expert panel determined the strength of the recommendation to be conditional.

Practice Notes

Table 6: Teaching Methods and Subject Details

TEACHING METHOD	SUBJECT DETAILS FROM THE EVIDENCE
Clinical observation	■ Direct exposure to a dental professional's practice in order to understand the roles of other health-care team members (87).
Didactic oral health lectures	■ Introduction to oral health (87–90, 92). ■ How to complete an oral health assessment/examination (86, 88–90). ■ Theoretical oral health concepts (such as the definition of oral health, risk factors and prevention of oral disease) for specific populations (e.g., older adult populations) (86, 88, 90, 92). ■ Oral health anatomy and oral health diseases (87, 89, 90, 92). ■ The link between oral health and systemic diseases (89, 90). ■ How to provide oral health education to persons (88, 92). ■ How to make appropriate referrals to dental professionals (86, 88, 89, 92). ■ Social aspects of oral health (90). **Note:** None of the studies discussed specific details regarding different treatments (e.g., medications) that may impact a person's oral health; however, the expert panel felt it was important to include this topic area in educational sessions.
Group discussion	■ Review of specific oral care cases, such as when a person has tonic bite reflex, and discussion of solutions to overcome barriers to care (90, 92).
Simulation lab sessions	■ How to provide oral care (87, 89–91). ■ Skill development on oral examinations (88–90). ■ Increase awareness with respect to how members on the health-care team work together in a dental practice (87).

Supporting Resources

RESOURCE	DESCRIPTION
Clark MB, Douglass AB, Maier R, et al. Smiles for life: a national oral health curriculum [Internet]. 3rd ed. Society of Teachers of Family Medicine Group on Oral Health; 2010. Available from: https://www.smilesforlifeoralhealth.org	■ An interprofessionally developed oral health curriculum created by the Society of Teachers of Family Medicine Group on Oral Health. ■ Educational resource intended for primary care clinicians (e.g., physicians and nurse practitioners) and students.
Faculty Toolkits: Interprofessional Oral Health Faculty Tool Kit for Primary Care Nurse Practitioner and Midwifery Programs. In: Oral Health Nursing Education and Practice (OHNEP) [Internet]. New York (NY): OHNEP; [date unknown]. Available from: http://ohnep.org/faculty-toolkit	■ The Interprofessional Oral Health Faculty Toolkit is an educational resource that can assist educators to integrate evidence-based oral systemic health information, teaching–learning strategies and clinical experience. ■ Can "serve as a starting point for faculty, clinicians, and organizations as they work to play a leadership role in building interprofessional oral health workforce capacity to improve oral health access, decrease oral health disparities, improve oral health and overall health outcomes, prepare for accreditation, and enhance the health of the communities they serve" (182).

RECOMMENDATION 6.0:

The expert panel suggests that health-service organizations provide education and training on oral care to health providers facilitated by an oral health professional. Education and training includes:

- theoretical oral health knowledge, including the definition of oral health, the risk factors for oral diseases and the methods of preventing them; and
- practical oral care skills, including toothbrushing and denture cleaning techniques.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Low

Discussion of Evidence

Benefits and Harms

Studies examined the effect that the education of health providers—including theoretical oral health knowledge and oral care skills—had on the oral health status of persons. Education and training was provided by a dentist (31, 80), dental hygienist (31, 99), a researcher specializing in dental health (100), or dental students and dental professors (29). Findings suggest that providing theoretical education and practical training to health providers on oral health and oral care may increase health provider knowledge about oral health, the prevention of oral and systemic diseases, and methods of providing effective oral care, subsequently leading to the improved oral health of persons (29, 31, 80, 99, 100).

The certainty in the body of evidence for this recommendation was low due to limitations in how the studies were conducted, the use of different tools to measure oral health status across studies and the small number of study participants. There were no harms related to the implementation of health provider education and training.

Theoretical Oral Health Knowledge

The majority of the studies included the following content within their educational program for health providers:

- definitions of oral health and the benefits of oral care;
- risk factors for oral diseases; and
- how to prevent oral diseases and other problems, such as pneumonia (29, 80, 99, 100).

Other topics included assessing for signs and symptoms of poor oral health and oral pain (29, 99, 100) and when to refer to an oral health professional (99, 100).

Education for health providers was mainly delivered via lectures (80, 99, 100) or video and written materials (29, 100).

Practical Oral Care Skills

The majority of studies included training on how to properly brush teeth and/or clean dentures (29, 31, 80, 99). Other topics incorporated in the training included how to use floss or other interdental tools (e.g., brushes and water irrigators), how and when to use mouth rinses, and how to moisturize the lips for lip care (31, 80).

Training was mainly delivered to health providers through educator-supervised practice on patients (31, 80, 99) or simulation models (i.e., practice on mannequins) (29).

Values and Preferences

Nursing staff valued the increased contact with dental services that arose through weekly education and the hands-on support with the oral care of long-term care residents provided by dental hygienists. They also felt more capable of providing oral care to residents who were initially reluctant to receive it (101).

Health Equity

The expert panel acknowledged that there may be inequitable access across health-service organizations to the resources required to provide educational sessions from an oral health professional or to ensure consistent and timely educational refreshers. In rural and remote areas, access to certain health provider groups is limited due to the lower number of health providers employed in those areas (102). Furthermore, the tools, products and/or simulation equipment required to provide practical training to health providers may be limited across health-service organizations.

Expert Panel Justification of Recommendation

There were no harms identified in the literature. The expert panel attributed high value to the benefits of health-service organizations implementing education and training interventions to improve a person's oral health status. However, there was low certainty in the evidence and therefore, the expert panel determined the strength of the recommendation to be conditional.

Practice Notes

- The expert panel noted that reinforcing education through ongoing refreshers can ensure that knowledge and skill are sustained. Education is also one component of a multifaceted approach to improving oral care which also includes an organization exploring their culture and priorities placed around oral health.
- The expert panel also emphasized that aside from being educated about theoretical oral health knowledge and practical oral care skills, health providers should also be aware of the preferences that persons have with respect to their own oral care.
- Public health offices can be contacted for further oral health information and oral hygiene education and instructions. For public health offices in Ontario, please see the **Supporting Resources.**
- See **Appendix L** for instructions on toothbrushing techniques.
- See **Appendix M** for instructions on denture care techniques.
- See **Appendix N** for a list of oral care tools and products.

Supporting Resources

RESOURCE	DESCRIPTION
British Society of Gerodontology (BSG); British Society for Disability and Oral Health (BSDH). Looking after the mouth – a training guide for carers [Internet]. [place unknown]: BSG; [updated 14 May 2014]. Co-published with BSDH. Available from: http://www.1000livesplus.wales.nhs.uk/looking-after-the-mouth	■ A series of three videos that provide practical information for health providers who perform mouth care on persons who require assistance.
British Society of Gerodontology (BSG). Guidelines for the oral healthcare of stroke survivors [Internet]. [place unknown]: BSG; June 2010. Available from: https://www.gerodontology.com/content/uploads/2014/10/stroke_guidelines.pdf	■ This guideline discusses recommendations and supporting evidence to guide health providers and caregivers in the provision of oral care to persons who have experienced a stroke.
Canadian Dental Hygienists Association (CDHA). Talking points: whole body health requires oral health [Internet]. [place unknown]: CDHA; 2015. Available from: https://files.cdha.ca/profession/resources/FactSheet_WholeBody_final2.pdf	■ A one-page document that outlines how oral health affects the body, including the respiratory system, reproductive system (pregnancy), endocrine system (diabetes), cardiovascular system, and growth and development, as well as the side effects of therapies (e.g., radiation and chemotherapy).
FDI World Dental Federation. Selected associations between oral conditions and general health [Internet]. In: The challenge of oral disease – a call for global action. [place unknown]: Myriad Editions; 2015. Available from: https://www.fdiworlddental.org/sites/default/files/media/15_oral_health_2.pdf	■ A diagram that depicts the associations between oral conditions and general health, including edentulousness, saliva, pneumonia, stomach ulcers, diabetes, organ infections, noma, cardiovascular disease, preterm and low birth weight babies, and gastrointestinal and pancreatic cancers.
Health Services in Your Community: Public Health Units. In: Ontario Ministry of Health and Long-Term Care (MOHLTC) [Internet]. Toronto (ON): MOHLTC; 2019. Available from: http://www.health.gov.on.ca/en/common/system/services/phu/locations.aspx	■ A list of all public health units found in Ontario, including links to their home pages.

RESOURCE	DESCRIPTION
National Institute for Health and Care Excellence (NICE). Oral health for adults in care homes [Internet]. London (UK): NICE; 2016. Available from: https://www.nice.org.uk/guidance/ng48/resources	■ An oral health guideline for adults in care homes. ■ The guideline provides recommendations for care home managers, residential and nursing care home staff, local authorities and organizations, and persons who live in care homes. ■ There also is a list of tools and resources that can be downloaded to help put the recommendations and guideline into practice.
Ontario Dental Association (ODA). Seniors' oral care: providing oral hygiene care to residents of Ontario long-term care homes. A guide for personal support workers. Toronto (ON): ODA; 2019. Available from: https://www.youroralhealth.ca/patient-resources	■ A guide for personal support workers on how to provide oral hygiene care to residents in long-term care. ■ Select "Seniors' Oral Health" and click on the image of the report to download it.
Registered Nurses' Association of Ontario (RNAO). Long-term care best practices toolkit. 2nd ed. Toronto (ON): RNAO; [date unknown]. Available from: http://ltctoolkit.RNAO.ca/resources/oral-health?page=1	■ A resource to assist with the implementation of oral health recommendations. ■ Provides documents and resources that long-term care homes can use with respect to implementing oral health care activities, such as assessment guides, individualized care plans, and fact sheets and videos with useful oral health and oral care education and training.
TCC ADN RN Program: Nursing Skills. Performing Oropharyngeal Suctioning [video file]. In: YouTube [Internet]. 31 December 2014. Available from: https://www.youtube.com/watch?v=SwoLb3z25fc	■ Video demonstrating how to perform oropharyngeal suctioning on a patient.
Terry Kirkpatrick: Videos [user profile]. In: YouTube. Available from: http://www.youtube.com/user/Terrykirkpatrick1/videos?sort=dd&live_view=500&flow=list&view=0	■ A 13-part video series that provides information about various oral health topics, including diabetes, dementia, dry mouth, stroke, palliative care, bad breath, care planning, infection control, dentures, the 2-toothbrush technique, tools and oral assessments (OHAT).

RECOMMENDATION 7.0:

The expert panel suggests that health-service organizations provide education to health providers that includes interactive hands-on training to identify and implement strategies and techniques that can be used when providing oral care to persons who are behaviourally complex.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

Two studies highlighted the importance of implementing hands-on training into oral health education in order to help health providers overcome barriers when providing oral care to persons who are behaviourally complex. The hands-on training was provided by a dentist (103) or a dental hygienist (104).

After a presentation on oral health, oral disease and the prevention of oral disease, Mac Giolla Phadraig et al. divided care staff into small groups where they participated in practical situations to learn how to brush the teeth and care for the dentures of people with intellectual disabilities (103). They also engaged in role play to practice problem-solving common challenging behaviours (e.g., limited mouth opening, exaggerated bite and gag reflex, or tongue thrusting). In Gonzalez et al., support staff caring for persons with disabilities received a 90-minute lecture that focused on the oral health of people with developmental disabilities, the progression of periodontal disease, and the link between oral and systemic health (104). Following the lecture, staff participated in a hands-on training session to reinforce and practice what was taught in the lecture. Skills learned in the hands-on training included positions and techniques for brushing teeth and removing plaque for people with developmental disabilities, and methods for approaching patients who display challenging behaviours (104).

In both studies, improvements in oral health knowledge and comprehension were observed after the interactive hands-on training (103, 104). Although Mac Giolla Phadraig et al. did not directly compare education that featured interactive hands-on training with education that did not have such training, Gonzalez et al. did compare the oral health knowledge of staff who attended a lecture and hands-on training to staff who only attended a lecture (103, 104). They found an increase in the oral health knowledge of staff in the first group after the lecture and training, compared to the oral health knowledge in the group that did not receive the hands on training (104).
This body of evidence was of very low certainty due to limitations in how studies were conducted, the use of different tools to measure the knowledge and ability of health providers to provide oral care across studies and the small number of study participants. There were no harms related to these interventions.

Values and Preferences

With respect to the use of interactive hands-on training as a means of learning strategies and techniques for providing oral care to persons who are behaviourally complex, there was no literature identified that reported on the values and preferences of either persons who are behaviourally complex or health providers who care for this population.

Health Equity

Improving health provider knowledge and ability to provide oral care to persons who are behaviourally complex has the potential to reduce health inequities as this population is more likely to have their oral care needs go unmet (8, 42-44). The expert panel identified that using practical training as a learning method, particularly if such training is completed on an ongoing basis, may be resource-intensive for some health-service organizations.

Expert Panel Justification of Recommendation

There was very low certainty evidence for improvements in oral health knowledge acquisition among health providers or in their ability to provide oral care to persons who are behaviourally complex. No harms were reported in the literature. The expert panel attributed high value to the benefits, however due to the very low certainty evidence they determined the strength of the recommendation to be conditional.

Practice Notes

- The expert panel emphasized that oral health education should be provided on an ongoing basis for both new and existing health providers in order to reinforce learning.
- Education strategies often require multiple delivery modes. Health-service organizations should utilize lectures, information cards and group discussion and include hands-on training to practice providing oral care in challenging situations.
- See **Appendix O** for a list of communication strategies that can be used when providing oral care to persons who are behaviourally complex.
- See **Appendix P** for a list of threat reduction strategies that can be used during the provision of oral care for persons who are behaviourally complex.

Supporting Resources

RESOURCE	DESCRIPTION
Atherley G. Gentle persuasive approaches program for professional caregivers – family caregiver perspectives [audio recording]. In: VoiceAmerica.com [Internet]. 8 May 2012. [place unknown]: VoiceAmerica Internet Talk Radio; c1997–2019. Available from: https://www.voiceamerica.com/episode/61519/gentle-persuasive-approaches-program-for-professional-caregivers-family-caregiver-perspectives	■ An audio recording on approaches for helping health providers when providing care for persons with mental health conditions.
Behavioural Supports of Ontario. Behavioural education and training support inventory (BETSI) [Internet]. [place unknown]: Behavioural Supports of Ontario; 2019. Available from: https://www.behaviouralsupportsontario.ca/47/Behavioural_Education_Training_Support_Inventory_BETSI/	■ A tool for staff education and training to support individuals who care for persons with responsive behaviours.
Brushing up on mouth care [Internet]. Halifax (NS): Dalhousie University; 2020. Considerations for Dementia [video file]. Available from: http://brushingup.ca/considerations-for-dementia/	■ A video that focuses on mouth care for older adults. Topics include what is dementia, brushing techniques and responsive behaviours.
Mouth Care Without a Battle. In: Mouth Care Without a Battle [Internet]. Chapel Hill (NC): University of North Carolina; [date unknown]. Available from: http://www.mouthcarewithoutabattle.org/	■ Educational tool for educational institutions, long-term care homes, assisted living communities and home health agencies. ■ Demonstrates an evidence-based, person-centred approach to overcoming resistance to daily mouth care for persons with cognitive and physical impairment. ■ Includes three DVD versions that must be purchased.
Scott D, van der Horst ML, Bowes D. Approaches for oral care: interventions for residents in long-term care with responsive behaviours, communication or functional impairments [Internet]. Hamilton (ON): Regional Geriatric Program Central (RGPC); 2007. Available from: http://admin.rgpc.ca/uploads/documents/approaches%20for%20oral%20hygiene%20care%20reference%20tool.pdf	■ Interventions for persons in long-term care with responsive behaviours or with communication or functional impairment.

Organization Recommendation

RECOMMENDATION 8.0:

The expert panel suggests that health-service organizations implement an interprofessional approach for the provision of oral care.

Strength of the recommendation: Conditional

Certainty of the evidence of effects: Very low

Discussion of Evidence

Benefits and Harms

An **interprofessional approach to care**[G] is the delivery of quality care within and across health-care settings by multiple health providers working collaboratively (85). With respect to oral health, interprofessional care is the promotion of oral health and the provision of oral care by multiple interprofessional team members. None of the studies directly compared an interprofessional approach to the provision of oral care to a non-interprofessional approach, nor did they compare interprofessional strategies. Despite this, the evidence suggests that when health providers from different health professions work collaboratively and contribute their professional expertise and experience about oral health, it may improve the oral health status of persons receiving care and increase the frequency of toothbrushing by a health provider (at least twice a day) (105–107).

Some examples of interprofessional approaches to the delivery of oral care that were found across studies included the following:

- A dental hygienist gave other health providers, persons and/or caregivers tailored oral and written instructions for oral, denture and/or oral mucosal care (105). Refer to **Recommendations 2.0**, **5.0** and **6.0** for more information about teaching strategies that can be used when educating students, health providers, persons and caregivers about oral health.
- Nursing staff in long-term care used the OHAT to assess admitted patients. This assessment led to the development of an oral care treatment plan and increased access to oral care supplies. When necessary, nursing staff communicated with (and provided referrals to) oral health professionals (106). Resident's overall OHAT mean scores improved 10 to 14 days after the intervention was initiated (106).
- In three in-patient stroke units, the oral health of persons with and without dysphagia was assessed by a SLP using the OHAT. The SLPs then communicated this assessment to the nurses and, based on the assessment, nurses provided oral care to persons, including brushing twice daily and mouth rinsing (107). One week later, both groups of patients demonstrated improvements in their OHAT scores (107).

Regardless of the intervention, the findings suggest that an interprofessional approach to the provision of oral care may improve the oral health status of all persons receiving care and increase the frequency of toothbrushing by a health provider (at least twice a day) (105–107). This evidence was of very low certainty due to limitations in how studies were conducted, the use of different tools to measure outcomes across studies and the small number of study participants. There were no harms identified in the literature after the implementation of an interprofessional approach to the provision of oral care.

Values and Preferences

Nursing staff employed in residential aged care facilities that implemented an integrated oral health program with oral health therapists (regulated oral health professional in Australia) and teledentistry valued the ability to access specialist skills provided by oral health therapists, particularly the individualized care plans developed to guide oral care for residents with high-care needs. Nursing staff also valued the frequent hands-on training, and they felt more confident in their practice and ability to manage oral health concerns (108). Both nursing staff and oral health therapists felt that communication about oral care services became more streamlined, including when treatment and intervention needs required referral to a dentist (108).

Health Equity

The expert panel acknowledged that there may be inequitable access across health-service organizations to the resources required to implement an effective interprofessional approach to oral care. For example, access to certain health providers in rural and remote communities is limited due to the lower number of health providers employed in those areas (102). More research is required to improve understanding of the effect that resources have on access to an interprofessional approach to quality oral care.

Expert Panel Justification of Recommendation

There was very low certainty in the evidence for: (a) improvements in the oral health status of all persons receiving care, and (b) increases in the frequency of toothbrushing when an interprofessional approach for the provision of oral care was implemented. There also were no harms reported in the literature. The expert panel attributed high value to the benefits, however due to the very low certainty they determined the strength of the recommendation to be conditional.

Practice Notes

- Other examples of interprofessional approaches to the delivery of oral care provided by the expert panel include the following:
  - Oral care plans can be developed with involvement and cooperation from members of the interprofessional team.
  - Based on the individualized needs of persons, referrals can be made to in-house dental professionals or dental professionals within the community in order to diagnose and provide required treatment.
  - Occupational therapists can assess the self-care abilities of a person and inform nursing staff. This may avoid incorrectly assuming that the person is able to perform adequate oral care independently.
  - Pharmacists can conduct a review for medications that cause dry mouth. They can also educate health providers about these drugs and provide information about products to relieve dry mouth.
  - SLPs, dietitians and respiratory therapists can contribute their knowledge about aspiration risk.
  - Dietitians can provide their knowledge about the impact of nutrition and diet on oral health.

Supporting Resources

RESOURCE	DESCRIPTION
Centre for Interprofessional Education; Toronto Academic Health Science Network (TAHSN). Interprofessional care competency framework and team assessment toolkit [Internet]. Toronto (ON): Centre for Interprofessional Education; 2017. Co-published with TAHSN. Available from: https://odha.on.ca/wp-content/uploads/2017/05/IPC-Framework-and-Toolkit-Web.pdf	■ Includes an Interprofessional Care (IPC) framework and Team Assessment Toolkit to support education and coaching for the development of interprofessional practice within hospitals. ■ The document begins by outlining different competency domains that facilitate interprofessional collaboration; it then goes on to provide tools and resources based on the competencies.
Registered Nurses' Association of Ontario (RNAO). Developing and sustaining interprofessional health care: optimizing patients/clients, organizational, and system outcomes [Internet]. Toronto (ON): RNAO; 2013. Available from: RNAO.ca/sites/RNAO-ca/files/DevelopingAndSustainingBPG.pdf	■ This BPG provides evidence-based recommendations to enable, enhance and sustain teamwork and interprofessional collaboration, and to achieve positive outcomes for persons, systems and organizations.
Registered Nurses' Association of Ontario (RNAO). Managing and mitigating conflict in health-care teams [Internet]. Toronto (ON): RNAO; 2012. Available from: RNAO.ca/sites/RNAO-ca/files/Managing-conflict-healthcare-teams_hwe_bpg.pdf	■ This BPG focuses on how to manage and mitigate interpersonal conflict among interprofessional teams, including identifying the knowledge, competencies and behaviours required for effective conflict management, and the organizational- and system-level policy changes that are required to support and sustain effective interprofessional team collaboration.

Research Gaps and Future Implications

In reviewing the evidence for this BPG, the RNAO Best Practice Guideline Development and Research Team and the expert panel identified priority areas for future research (outlined in **Table 7**). Studies conducted in these areas would provide further evidence to support high-quality and equitable support for adults who require assistance with oral care. The list is not exhaustive; other areas of research may be required.

Table 7: Priority Research Areas for Each Recommendation Question

RECOMMENDATION QUESTION	PRIORITY RESEARCH AREA
RECOMMENDATION QUESTION 1: **Should an interprofessional approach to oral care be recommended to improve outcomes for persons, health providers and students?** **Outcomes: Person's oral health status, frequency of oral care, knowledge and ability of health providers and students to provide oral care.**	■ How an interprofessional approach to oral care impacts oral health outcomes. ■ Processes or models that an interprofessional team can follow in providing oral care. ■ Effect of integrating interprofessional oral health education into the curricula of unregulated health provider educational programs (such as those for personal support workers). ■ Validation of a standardized oral health knowledge, skill, attitudes and competency assessment/questionnaire. ■ Effect of different modes of education (e.g., online webinars) for increasing access to interprofessional education. ■ Research on the experiences of persons when an interprofessional approach to oral care is used. ■ Use of controlled trials to compare interprofessional and profession-specific approaches to oral care and their respective effects on the oral health of persons.
RECOMMENDATION QUESTION 2: **Should an oral care protocol be recommended to improve outcomes for persons and health providers?** **Outcomes: VAP, HAP, knowledge and confidence of health providers in ability to assess changes in oral health status.**	■ Impact of using a validated assessment tool on oral health outcomes. ■ Frequency and timing of oral health assessments. ■ Validation of a standardized oral health protocol. ■ The effect of oral care on the prevention of pneumonia. ■ Use of controlled trials to compare the use of an oral care protocol to the use of a single oral care intervention.

RECOMMENDATION QUESTION	PRIORITY RESEARCH AREA
RECOMMENDATION QUESTION 3: **What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons?** **Outcomes: Person's oral health status, frequency of oral care.**	■ More research on the effectiveness of oral care interventions for persons who require assistance with oral care. ■ Use of a controlled trial to compare different oral care strategies or techniques specifically for persons who require assistance with oral care.
RECOMMENDATION QUESTION 4: **What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons who are behaviourally complex and health providers?** **Outcomes: Person's oral health status, person's responsive behaviours, frequency of oral care, knowledge and ability of health providers to provide oral care.**	■ More research on the effectiveness of oral care interventions for persons who are behaviorally complex. ■ More research on the impact of role play as a teaching methodology for educating health providers on the provision of oral care.
Evaluation (see Table 2, 3 and 4)	■ Development of public data repositories and indicators for provincial, national and international data collection of outcomes relevant to oral health. ■ Standardized definitions and measurements for oral health outcomes for persons who require assistance with oral care. ■ Further research on the validity of RAI-MDS 2.0 for monitoring quality of oral care in long-term care.

Implementation Strategies

Implementing guidelines at the point-of-care is multi-faceted and challenging. It takes more than awareness and distribution of BPGs for practice to change: BPGs must be adapted for each practice setting in a systematic and participatory way to ensure that recommendations fit the local context. The 2012 RNAO *Toolkit: Implementation of Best Practice Guidelines* (2nd ed.) provides an evidence-informed process for doing this (1). It can be downloaded at RNAO.ca/bpg/resources/toolkit-implementation-best-practice-guidelines-second-edition.

The *Toolkit* is based on emerging evidence that successful uptake of best practices in health care is more likely when the following occur:

- leaders at all levels are committed to supporting guideline implementation;
- BPGs are selected for implementation through a systematic, participatory process;
- stakeholders for whom the BPGs are relevant are identified and engaged in the implementation;
- environmental readiness for implementing BPGs is assessed;
- the BPG is tailored to the local context;
- barriers and facilitators to using the BPG are assessed and addressed;
- interventions to promote use of the BPG are selected;
- use of the BPG is systematically monitored and sustained;
- evaluation of the BPG's impact is embedded in the process; and
- there are adequate resources to complete all aspects of the implementation.

The *Toolkit* uses the Knowledge-to-Action framework to demonstrate the process steps required for knowledge inquiry and synthesis (111) (see **Figure 1**). It also guides the adaptation of the new knowledge to the local context and implementation. This framework suggests identifying and using knowledge tools (such as BPGs) to identify gaps and begin the process of tailoring the new knowledge to local settings.

RNAO is committed to widespread deployment and implementation of our BPGs. We use a coordinated approach to dissemination, incorporating a variety of strategies, including the following:

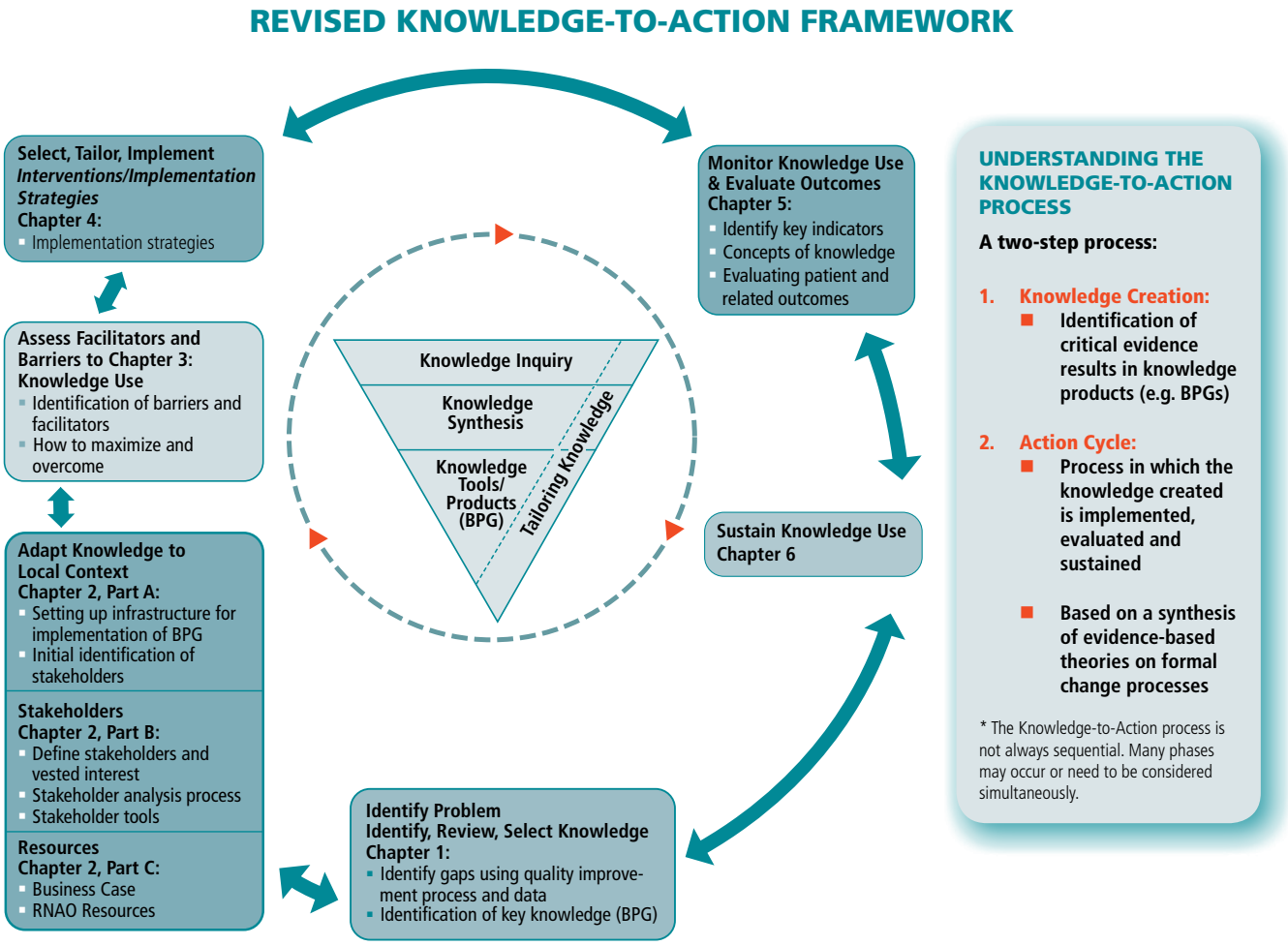
1. The Nursing Best Practice Champions Network®, which develops the capacity of individual nurses to foster awareness, engagement and adoption of BPGs.
2. BPG Order Sets™ provide clear, concise and actionable intervention statements derived from a practice recommendation. BPG Order Sets™ can be readily embedded within electronic records, but they also may be used in paper-based or hybrid environments.
3. The BPSO® designation, which supports implementation at the organization and system levels. BPSOs® focus on developing evidence-based cultures with the specific mandate to implement, evaluate and sustain multiple RNAO BPGs.

In addition, we offer annual capacity-building learning institutes on specific BPGs and their implementation.

Information about our implementation strategies can be found at the following locations:

- RNAO Nursing Best Practice Champions Network®: RNAO.ca/bpg/get-involved/champions
- RNAO BPG Order Sets™: RNAO.ca/ehealth/bpgordersets
- RNAO BPSOs®: RNAO.ca/bpg/bpso
- RNAO capacity-building learning institutes and other professional development opportunities: RNAO.ca/events

Figure 1: Knowledge-to-Action Framework



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Appendix A: Glossary of Terms

Aspiration: Occurs when oropharyngeal or gastric material enters the airway and passes below the vocal cords (34). When these secretions are colonized with bacteria (from the oral cavity, pharynx or respiratory tract), an infectious response develops in the lungs and leads to aspiration pneumonia (33).

See *aspiration pneumonia*

Aspiration pneumonia: Occurs when oropharyngeal or gastric contents move into the trachea and lungs (instead of the stomach), resulting in infection of the lung tissue (33).

See *aspiration*

Best practice guidelines: Best practice guidelines are systematically developed, evidence-based documents that include recommendations for nurses and the interprofessional team, educators, leaders and policy-makers, persons and their families on specific clinical, system and healthy work environment topics. BPGs promote consistency and excellence in clinical care, health policies, and health education, ultimately leading to optimal health outcomes for people and communities and the health system" (112).

BPG Order Set™: Provides clear, concise and actionable intervention statements that are derived from a practice recommendation. BPG Order Sets™ can be readily embedded within electronic records, but they may also be used in paper-based or hybrid environments.

Caregiver: "Any relative, partner, friend or neighbour who has a significant personal relationship with, and provides a broad range of assistance for, an older person or an adult with a chronic or disabling condition. These individuals may be primary or secondary caregivers and live with, or separately from, the person receiving care" (7).

Care-resistant behaviour: "Actions invoked by a caregiver encounter . . . defined as the repertoire of behaviours with which persons with dementia withstand or oppose the efforts of a caregiver" (113). These behaviours can range from mild (e.g., clenching of the mouth or turning the head away) to extreme (e.g., hitting or kicking) (8).

See *responsive behaviours*

Communication strategies: A variety of verbal and non-verbal techniques that can be adopted to reduce and/or prevent risk to the caregiver during the provision of oral care (114). Examples of communication strategies include: non-verbal cues, verbal cues, body language, mirroring, group dynamics, open and closed questions, empathy and the expression of positive and negative feelings (5, 115).

Consensus: A process used to reach agreement among a group or panel during a Delphi or modified Delphi technique (116). A consensus of 70 per cent agreement from all voting panel members was required for the strength of recommendations within this BPG.

Dental caries: Cavities that occur when plaque forms on the surface of the teeth and converts free sugars into acids. These acids in turn dissolve tooth enamel and teeth over time if there is a high intake of free sugars, inadequate use of fluoride and irregular removal of plaque (117). Pain can be associated with dental caries.

Downgrade: Under the GRADE approach, when limitations in the individual studies potentially bias the results, the quality of evidence will decrease (118). For example, a body of quantitative evidence for one priority outcome may begin with high certainty, but due to serious limitations in one or more of the five GRADE criteria, it will be rated down by one or two levels (12).

See *Grading of Recommendations Assessment, Development and Evaluation (GRADE)*

Dysphagia: Refers to difficulty swallowing.

Education recommendation: Directed at those who are responsible for the education of nurses and other health providers (e.g., educators, quality improvement teams, managers, administrators, and academic and professional institutions). These recommendations outline content and training strategies for entry-level health programs, ongoing education and professional development.

Encouraging comments: "Verbal praise, reassurance [and] optimism directed towards [the] resident while participating in the task" (82).

Evidence-based nursing practice: The integration of the methodologically strongest research evidence with clinical expertise and patient values; unifies research evidence with clinical expertise and encourages the inclusion of patient preferences (119).

Evidence-to-Decision (EtD) framework: Table that facilitates expert panels to make decisions when moving from evidence to recommendations. The purpose of the ETD framework is to summarize the research evidence, outline important factors that can determine the recommendation, inform panel members about the benefits and harms of each intervention considered, and increase transparency about the decision-making process in the development of recommendations (12).

Family: "A term used to refer to individuals who are related (biologically, emotionally, or legally) to and/or have close bonds (friendships, commitments, shared households and child rearing responsibilities, and romantic attachments) with the person receiving health care. A person's family may include all those whom the person identifies as significant in his or her life. . . . The person receiving care determines the importance and level of involvement of any of these individuals in their care based on his or her capacity" (57).

Frequency of oral care: The number of times a person received oral care from a health provider or caregiver, or independently practiced oral care on themselves.

Full physical assistance: When the health provider or caregiver completes all actions involved in the care task (e.g., set-up of oral care supplies, use of oral care tools and clean-up).

Gingivitis: Gingivitis is a term used to describe inflammation of the gums. Gingivitis begins with plaque. Plaque contains bacteria that can cause gingivitis and tooth decay (184).

Good practice statement: A good practice statement is directed primarily to the nurses and interprofessional teams who provide care to persons and support for their families across the spectrum of care, including (but not limited to) primary care, acute care, home care and long-term care. It refers to a practice that is already accepted as beneficial or practical.

In the case of this Guideline, the good practice statement is believed to be so beneficial that conducting a systematic review to prove its efficacy would be unreasonable. The resulting statement is not based on a systematic review and it does not receive a rating of the certainty or confidence in the evidence or strength (i.e., a rating of conditional or strong) (11).

GRADE criteria for randomized controlled trials: When using GRADE to assess the body of evidence for randomized controlled trials, five components contribute to the assessment of confidence in the evidence for each outcome:

1. Risk of bias, which focuses on the flaws in the design of a study or problems in its execution.
2. Inconsistency, which looks at a body of evidence and assesses whether the results point in the same direction or are different.
3. Imprecision, which refers to the accuracy of results based on the number of participants and/or events included and the width of the confidence intervals across a body of evidence.
4. Indirectness, whereby each primary study that supports an outcome is assessed and a decision is made regarding the applicability of the findings to the population, intervention and outcome outlined in the research question.
5. Publication bias, where a decision is made about whether the body of published literature for an outcome potentially includes only positive or statistically significant results (12).

GRADE criteria for observational studies: In addition to the five criteria mentioned above (under "GRADE criteria for randomized controlled trials"), the following three criteria are assessed when applying GRADE to the body of evidence for observational studies:

1. Magnitude of effect, where the magnitude of effect of an intervention on the outcome is assessed.
2. Dose–response gradient, where consideration is made regarding the effect of the intervention on the outcome.
3. Effect of plausible confounding, where consideration is made regarding residual confounders that cause an underestimation of treatment effect (12).

Grading of Recommendations Assessment, Development and Evaluation (GRADE): GRADE is a methodological approach to assess the quality of a body of evidence in a consistent and transparent way, and to develop recommendations systematically. The body of evidence for an important and/or critical outcome is evaluated based on: risk of bias, consistency of results, relevance of the studies, precision of the estimates and publication bias (12).

Halitosis: Also known as bad breath.

Health provider: Refers to both regulated (e.g., nurses, physicians, dietitians and social workers) and unregulated (e.g., personal support workers) health providers who are part of the interprofessional team.

Regulated health provider: In Ontario, the *Regulated Health Professional Act, 1991* (RHPA), provides a framework for regulating health professions, outlining the scope of practice and the profession-specific controlled or authorized acts that each regulated professional is authorized to perform when providing health care and services (120).

Unregulated health provider: These providers fulfill a variety of roles in areas that are not subject to the RHPA. They are accountable to their employers but not to an external regulating professional body (e.g., the College of Nurses of Ontario). Unregulated health providers fulfill a variety of roles and perform tasks that are determined by their employer and employment setting. Unregulated health providers only have the authority to perform a controlled act as set out in the RHPA if the procedure falls under one of the exemptions set out in the Act (121).

Hospital-acquired pneumonia (HAP): Refers to inflammation of the lung tissue caused by agents that were neither present in an individual when they were admitted to hospital nor within 48 hours of their admission (33, 36).

Interprofessional approach to care: The delivery of quality care within and across health-care settings by multiple health providers working collaboratively (3). With respect to oral health, it is the promotion of oral health and the provision of oral care by multiple interprofessional team members, including (but not limited to): nurses, personal support workers, physicians, dentists, dental assistants, dental therapists, dental hygienists, denturists, dietitians, respiratory therapists, occupational therapists, occupational therapy assistants, SLPs, pharmacists, physiotherapists and physiotherapy assistants.

See *interprofessional team*

Interprofessional team: "A team comprised of multiple health providers (regulated and unregulated) who work collaboratively to deliver comprehensive and quality health care and services to people within, between, and across health-care settings" (4). Key interprofessional team members supporting persons who require assistance with oral care can include: nurses, personal support workers, physicians, dentists, dental assistants, dental therapists, dental hygienists, denturists, dietitians, respiratory therapists, occupational therapists, occupational therapy assistants, SLPs, pharmacists, physiotherapists and physiotherapy assistants.

See *interprofessional approach to care*

Knowledge and confidence of health providers in ability to assess changes in oral health status: A health provider and/or caregiver's knowledge and confidence to conduct an oral health assessment in order to recognize improvements or deteriorations in oral health related to the structures in and around the oral cavity.

Meta-analysis: A systematic review of randomized controlled trials that uses statistical methods to analyze and summarize the results of the included studies (122).

See *systematic review*

Nurse: "Refers to registered nurses, licensed practical nurses (referred to as 'registered practical nurses' in Ontario), registered psychiatric nurses, and nurses in advanced practice roles, such as nurse practitioners and clinical nurse specialists" (57, 120).

Oral care: Refers to the practice of assessing, cleaning and/or treating a person's oral cavity to prevent oral disease and/or managing existing oral diseases. Examples include: brushing of teeth, dentures, tongue and soft tissue; oral decontamination using a mouth rinse; and flossing.

Oral care plan: A written plan of care, informed by an oral assessment, that specifies a person's individualized oral care needs, including goals and preferences for oral care routines.

Oral care protocol: Multi-component, organization-level approach to standardize oral care for all persons receiving care. It includes a standardized oral health assessment, an oral care plan guided by the individual's oral health assessment, step-by-step instructions to be followed when providing oral care to persons and a list of the tools required to provide effective oral care. The oral care protocol is implemented by nurses and the interprofessional team (as appropriate to the knowledge and skill of the health providers), and it can be tailored based on the needs and preferences of the person.

Oral health: "[Oral health] is multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow and convey a range of emotions through facial expressions with confidence and without pain, discomfort and disease of the craniofacial complex" (6).

Oral health professional: Refers to regulated health providers who have received formal education and training specific to dental and oral health (e.g., dentists, dental hygienists, dental technologists, and denturists).

Oral health status: In the literature, the term "oral health status" reflects the oral health of the patient. It was determined using different oral health measures, such as gingival index, plaque index and denture plaque index.

Oral mucosa: A protective mucous membrane that lines the inside of the mouth, including the gums (123).

Organization recommendation: These recommendations apply to managers, administrators and policy-makers who are responsible for developing policy or securing supports required within health-service organizations to enable the implementation of best practices.

Oropharyngeal: Refers to the mouth and the pharynx. The pharynx is a muscular tube lined by mucous membrane and extends from the mouth and nasal cavities to the larynx where it becomes continuous with the esophagus (185).

Outcome: A dependent variable, or the clinical and/or functional status of a person or population, used to assess if an intervention is successful. In GRADE, outcomes are prioritized based on if they are: (a) critical for decision making; (b) important, but not critical for decision making; or (c) not important. This makes the literature search and systematic reviews more focused (12).

Periodontal (gum) disease: When the tissue surrounding and supporting the teeth begins bleeding and swelling (gingivitis). If left untreated, the gum can disconnect from the tooth and bone, creating pockets and loose teeth (periodontitis) or even tooth loss (124).

Periodontitis: When gums separate from the teeth, forming pockets (spaces between the teeth and gums) that become infected (124).

Person: In the context of this BPG, a "person" is an individual who requires assistance with completing some or all of their oral care. This could range from support with the set-up of oral care supplies, to cueing/prompting/reminding to complete oral care, or even to providing full physical assistance with oral care. Exceptions to the use of this term occur when discussions in the literature (e.g., studies or reports) use alternative terms (e.g., patient, client or resident).

Person- and family-centred care: An "approach to care [demonstrating] certain practices that put the person and their family members at the centre of health care and services. Person- and family-centred care respects and empowers individuals to be genuine partners with health-care providers for their health" (57).

Persons who are behaviourally complex: Persons with cognitive or mental impairments who may be exhibiting responsive behaviours.

See *responsive behaviours*

PICO research question: A framework to outline a focused question. It specifies four components: (a) the *patient* or *population* that is being studied, (b) the *intervention* to be investigated, (c) the alternative or *comparison intervention*, and (d) the *outcome* that is of interest (12).

Plaque: A "sticky, colourless film of bacteria and sugars that constantly forms on [the] teeth. It is the main source of cavities and gum disease, and can harden into tartar if not removed daily" (125).

Plaque disclosing solution: Plaque disclosing solutions contain a dye that reacts with the plaque on teeth and/or dentures. Seeing the dyed areas can help individuals identify areas of the mouth that need further brushing or flossing.

Practice recommendation: Recommendations directed primarily at nurses and the interprofessional team who provide direct care to persons and support for their family across the spectrum of care. This includes (but is not limited to): primary care, acute care, home-care and long-term care.

Quasi-experimental study: A study that estimates causal effects by observing the exposure of interest, but in which the experiments are not directly controlled by the researcher and lack randomization (e.g., before-and-after designs) (126).

Randomized controlled trial (RCT): An experiment in which the investigator assigns one or more interventions to participants who are randomly allocated to either the experimental group (receives intervention) and the comparison (conventional treatment) or control group (no intervention or placebo) (122).

Recommendation: A course of action(s) that directly answers a recommendation question. A recommendation is based on a systematic review of the literature and is made in consideration of its: (a) potential benefits and harms, (b) values and preferences from a person-centred perspective, and (c) impact on health equity. All recommendations are given a strength—either **strong** or **conditional**—through expert panel consensus.

It is important to note that recommendations should not be viewed as prescriptive, because they cannot take into account all of the unique features of individual, organizational and clinical circumstances (12).

A **strong recommendation** "reflects the expert panel's confidence that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation *for* an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation *against* an intervention)" (12). A strong recommendation implies that the majority of persons will be best serviced by the recommended action (12).

A **conditional recommendation** reflects the expert panel's confidence that while some uncertainty exists, the desirable effects probably outweigh the undesirable ones (i.e., conditional recommendation *for* an intervention) or that the undesirable effects probably outweigh the desirable ones (i.e., a conditional recommendation *against* an intervention) (12). A conditional recommendation implies that not all persons will be best served by the recommended action, and that there is a need for more careful consideration of personal circumstances, preferences and values (12).

Recommendation question: Priority areas of care identified by the expert panel that require a synthesis of the evidence to answer. These recommendation questions inform the PICO research questions that guide the systematic reviews and subsequently inform practice, education or organizational recommendations.

Reliability (reliable): The degree to which results from a measurement procedure can be reproduced with minimal measurement error (122). For example, two users could use a tool at different times but reach the same result.

Responsive behaviour: Responsive behaviours can include: grabbing someone, vocal responses to care, general agitation, repetitive statements or questions, and screaming (9). It is important to note that responsive behaviours often indicate: (a) an unmet need in a person, whether cognitive, physical, emotional, social, environmental or other; or (b) a response to circumstances within the social or physical environment that may be frustrating, frightening or confusing to a person (10). Health providers need to explore the underlying cause(s) of responsive behaviours, and use strategies and techniques that "demonstrate compassion, validate emotions, support dignity, and promote comprehension" (10).

See *care-resistant behaviours*

Return demonstration: An educational method used when teaching a new skill to a person. It consists of demonstrating a task to a person and having the person repeat the task to the person providing the teaching. This allows the teacher to evaluate whether the learner understands and can complete the task.

Stakeholder: An individual, group or organization that has a vested interest in the decisions and actions of organizations, and that may attempt to influence decisions and actions (128). Stakeholders include all of the individuals and groups who will be directly or indirectly affected by the change or solution to the problem.

Strategy: The use of an intervention that enables a health provider to improve their ability to provide care.

Student: Individuals currently enrolled in any health education program who are receiving education and training in an academic institution and/or a skills lab setting.

Surrogate outcome: A surrogate outcome is a substitute measure to the one that was originally voted on. Surrogate outcomes are considered when evidence about the desired outcomes is lacking or unexplored (12).

Systematic review: A comprehensive review of the literature that uses clearly formulated questions and systematic and explicit methods to identify, select and critically appraise relevant research. A systematic review collects and analyzes data from the included studies and presents them, sometimes using statistical methods (122).

See *meta-analysis*

Technique: A health provider's way of carrying out a particular task (e.g., toothbrush handling or the selection of a modified tool).

Tetraplegia: The "loss of motor or sensory function in the cervical segments of the spinal cord, impairing upper and lower limbs, the trunk, and function of the abdominal and pelvic organs" (129).

Threat reduction strategy: Interventions or behavioural techniques that are designed to minimize a person's fight or flight response to fear and/or stress. The goal is to reduce the person's perception of threat, thereby preventing or de-escalating responsive behaviours (8).

Validity (valid): The degree to which a measurement is likely to be true and free of bias (122). For example, a tool would be considered valid if it accurately measures the construct that it aims to measure.

Ventilator-associated pneumonia (VAP): The occurrence of an airway infection within 48 hours of endotracheal intubation (33, 37).

Xerostomia: A dry mouth, often associated with a decrease in salivary flow, that can create problems with tasting, chewing, swallowing and speaking. Other problems associated with having a dry mouth include dental decay, demineralization of the teeth, tooth sensitivity and oral infections (130).

Appendix B: RNAO Best Practice Guidelines and Resources that Align with this Guideline

The following are topics and some suggested RNAO BPGs and resources from other organizations that align with this BPG.

TOPIC	RESOURCE(S)
Client-centred learning	■ Registered Nurses' Association of Ontario (RNAO). Facilitating client centred learning [Internet]. Toronto (ON): RNAO; 2012. Available from: RNAO.ca/bpg/guidelines/facilitating-client-centred-learning
Delirium, dementia and depression in older adults	■ Registered Nurses' Association of Ontario (RNAO). Delirium, dementia, and depression in older adults: assessment and care. 2nd ed. [Internet]. Toronto (ON): RNAO; 2016. Available from: RNAO.ca/bpg/guidelines/assessment-and-care-older-adults-delirium-dementia-and-depression
Implementation science, implementation frameworks and resources	■ Registered Nurses' Association of Ontario (RNAO). Toolkit: implementation of best practice guidelines. 2nd ed. [Internet]. Toronto (ON): RNAO; 2012. Available from: RNAO.ca/bpg/resources/toolkit-implementation-best-practice-guidelines-second-edition ■ Oral Health. In: Long-Term Care Best Practices Toolkit, 2nd edition [Internet]. Toronto (ON): Registered Nurses' Association of Ontario; c2018. Available from: http://ltctoolkit.RNAO.ca/resources/oral-health?page=1 ■ Active Implementation Hub. I: The National Implementation Research Network [Internet]. [place unknown: publisher unknown]; 2013–2017. Available from: http://implementation.fpg.unc.edu/ ■ Improvement frameworks getting started kit. In: Canadian Patient Safety Institute [Internet]. [place unknown]: Safer Healthcare Now!; c2015. Available from: http://www.patientsafetyinstitute.ca/en/toolsResources/ImprovementFramework/Pages/default.aspx ■ Seminal Publications. In: Dissemination & Implementation Models in Health Research & Practice [Internet]. [place unknown]: The Center for Research in Implementation Science and Prevention; [date unknown]. Available from: http://dissemination-implementation.org/content/resources.aspx
Interprofessional collaboration	■ Registered Nurses' Association of Ontario (RNAO). Developing and sustaining interprofessional health care: optimizing patients/clients, organizational, and system outcomes [Internet]. Toronto (ON): RNAO; 2013. Available from: RNAO.ca/bpg/guidelines/interprofessional-team-work-healthcare

TOPIC	RESOURCE(S)
Other evidence-based oral health guidelines	■ National Institute for Health and Care Excellence (NICE). Oral health for adults in care homes [Internet]. London (UK): NICE; 2018. Available from: https://www.nice.org.uk/guidance/ng48 ■ National Institute for Health and Care Excellence (NICE). Oral health: local authorities and partners [Internet]. London (UK): NICE; 2015. Available from: https://www.nice.org.uk/guidance/ph55
Oral care infection prevention and control	■ College of Dental Hygienists of Ontario. Infection prevention and control (IPAC) guidelines [Internet]. [place unknown]: The College; 2018. Available from: http://www.cdho.org/docs/default-source/pdfs/reference/guidelines/cdho-ipac-guidelines.pdf
Oral health promotion	■ National Institute for Health and Care Excellence (NICE). Oral health promotion: general dental practice [Internet]. London (UK): NICE; 2015. Available from: https://www.nice.org.uk/guidance/ng30
Person- and family-centred care	■ Registered Nurses' Association of Ontario (RNAO). Person- and family-centred care [Internet]. Toronto (ON): RNAO; 2015. Available from: RNAO.ca/bpg/guidelines/person-and-family-centred-care
Safe and effective staffing	■ Registered Nurses' Association of Ontario (RNAO). Developing and sustaining safe, effective staffing and workload practices [Internet]. Toronto (ON): RNAO; 2017. Available from: RNAO.ca/bpg/guidelines/developing-and-sustaining-effective-staffing-and-workload-practices

Appendix C: Best Practice Guideline Development Methods

This appendix presents an overview of the RNAO guideline development process and methods. RNAO is unwavering in its commitment that every BPG be based on the best available evidence. To meet international standards, the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) method has been implemented.

Scoping the Guideline

The scope sets out what an RNAO BPG will and will not cover (see **Purpose and Scope**). To determine the scope of this Guideline, the RNAO Best Practice Guideline Development and Research Team conducted the following steps:

1. Reviewed the previous RNAO BPG *Oral Health: Nursing Assessment and Intervention* to understand its purpose, scope, and recommendations (2).
2. A guideline search and gap analysis was undertaken. Two Guideline Development Methodologists (one of them being the Guideline Development Lead) searched an established list of websites for guidelines and other relevant content published between January 2012 and August 2018. The purpose of the guideline search and gap analysis was to gain an understanding of existing guidelines about oral health in order to identify opportunities to develop the purpose and scope of this BPG. The resulting list was compiled based on knowledge of evidence-based practice websites and recommendations from the literature. RNAO expert panel members were asked to suggest additional guidelines (see **Figure 2**). Detailed information about the search strategy for existing guidelines, including the list of websites searched and the inclusion criteria used, is available from RNAO.ca/bpg/guidelines/oral-health-supporting-adults-who-require-assistance-second-edition.

   The guidelines were reviewed for content, applicability to nursing scope of practice, accessibility and quality. The two Guideline Development Methodologists appraised three international guidelines using the AGREE II tool (131). Guidelines with an overall score of 6 or 7 (on a 7-point Likert scale) were considered to be of high quality. Systematic reviews that answered research questions in high-quality guidelines were considered to be beyond the scope of this BPG. The following guidelines were appraised as indicated:

   - National Institute for Health and Care Excellence (NICE). Oral health for adults in care homes [Internet]. London (UK): NICE; 2016. Available from: https://www.nice.org.uk/guidance/ng48 (Score: 7 out of 7. This guideline was used as a supporting resource in this BPG).
   - National Institute for Health and Care Excellence (NICE). Oral health: local authorities and partners [Internet]. London (UK): NICE; 2014. Available from: https://www.nice.org.uk/guidance/ph55 (Score: 6 out of 7. This guideline was used as a supporting resource in this BPG).
   - National Institute for Health and Care Excellence (NICE). Oral health promotion: general dental practice [Internet]. London (UK): NICE; 2015. Available from: https://www.nice.org.uk/guidance/ng30 (Score: 6 out of 7. This guideline was used as a supporting resource in this BPG).

3. A literature review was undertaken to determine the available interventions related to oral care in the adult population.
4. Six telephone key informant interviews took place with experts in the field including direct care health providers, researchers and individuals with lived experience, to understand the needs of nurses, members of the interprofessional health team and persons with lived experience.

5. Two telephone discussion groups were convened to understand the needs of nurses, members of the interprofessional health team and persons with lived experience.

Assembly of the Expert Panel

RNAO aims for diversity in membership of an expert panel; this is in alignment with its Organizational Statement on Diversity and Inclusivity, which is part of the RNAO Mission and Values (134). RNAO also aims for persons impacted by BPG recommendations, especially caregivers and persons with lived experience, to be included as expert panel members.

There are numerous ways in which RNAO finds and selects members of an expert panel. This includes:

- searching the literature for researchers in the topic area;
- soliciting recommendations from key informant interviews;
- drawing from established professional networks, such as RNAO Interest Groups, the Nursing Best Practice Champions Network® and Best Practice Spotlight Organizations® (BPSOs®); and
- other nursing and health provider associations, topic-relevant technical associations or organizations, and advocacy bodies.

For this BPG, the RNAO Best Practice Guideline Development and Research Team assembled a panel of experts from nursing practice, administration, research, education and policy, as well as other members of the interprofessional team, persons with lived experience and caregivers representing a range of sectors and practice areas (see the **RNAO Best Practice Guideline Expert Panel**).

The expert panel engaged in the following activities:

- approved the scope of the BPG;
- determined the recommendation questions and outcomes to be addressed in this BPG;
- participated in a consensus development process to finalize recommendation statements;
- provided feedback on the draft of this BPG;
- participated in the development of evaluation indicators; and
- identified appropriate stakeholders to review the draft guideline prior to publication.

In addition to the above, the expert panel co-chairs engaged in the following activities:

- participated in monthly meetings with the Guideline Development Methodologists and Guideline Development Project Coordinator;
- facilitated expert panel meetings;
- provided in-depth guidance on clinical and/or research issues; and
- moderated and acted as tiebreakers in voting processes, if required.

Conflict of Interest

In the context of RNAO BPG development, the term "conflict of interest" (COI) refers to situations in which an expert panel member's or RNAO staff's financial, professional, intellectual, personal, organizational or other relationships may compromise their ability to conduct panel work independently. Declarations of COI that might be construed as constituting a perceived and/or actual conflict were made by all members of the expert panel prior to their participation in guideline development work using a standard form. Expert panel members also updated their COI at the beginning of each in-person guideline meeting and prior to guideline publication. Any COI declared by an expert panel member was reviewed by both the RNAO Best Practice Guideline Development and Research Team and by expert panel co-chairs. No limiting conflicts were identified. See Declarations of Conflicts of Interest Summary at RNAO.ca/bpg/guidelines/oral-health-supporting-adults-who-require-assistance-second-edition.

Identifying Priority Recommendation Questions and Outcomes

RNAO systematic review questions are developed in accordance with the PICO format (population, intervention, comparison, outcome).

In November 2017, the RNAO Best Practice Guideline Development and Research Team and the expert panel convened in-person to determine the priority recommendation questions and outcomes for this BPG. A comprehensive list of recommendation questions that the BPG could potentially address was developed at the meeting. This was informed by:

- the guideline gap analysis,
- the review of the literature,
- key informant interviews and discussion groups, and
- expert panel discussion at the in-person meeting.

This comprehensive list of potential recommendation questions was presented to the expert panel for a vote. Each expert panel member was allowed four votes for preferred recommendation questions. The four recommendation questions with the most votes were deemed to be the final recommendation questions. Expert panel co-chairs did not participate in the vote because they functioned as tiebreakers, if necessary.

Following this initial vote—and in alignment with GRADE standards for assessing and presenting evidence—outcomes were identified and prioritized per recommendation question. A comprehensive list of outcomes per recommendation question was developed at the in-person meeting, informed by the following:

- the review of the literature,
- key informant interviews and discussion groups, and
- expert panel discussion at the in-person meeting.

Based on the comprehensive list of outcomes, the expert panel was asked to rank order the relative importance of each outcome per recommendation question. Each expert panel member participated in a confidential online rank order vote. It was deemed feasible to have a total of 12 prioritized outcomes across the four recommendation questions. Expert panel co-chairs did not participate in the vote as they functioned as co-facilitators. Voting results were presented to the expert panel and through a facilitated discussion, priority outcomes were determined per

recommendation question. Each recommendation question informed a PICO research question that guided the systematic reviews. The four recommendation questions—and their respective PICO research questions—are presented below.

Recommendation Question 1: Should an interprofessional approach to oral care be recommended to improve outcomes for persons, health providers and students?

PICO Research Question 1

Population: Adults 18 years of age and older who require assistance with oral health, and health providers and students.

Intervention: Interprofessional approach to oral care.

Comparison: No interprofessional approach to oral care (usual care).

Outcomes: Person's oral health status, frequency of oral care, knowledge and ability of health providers and students to provide oral care, person's experience with oral health.*

Recommendation Question 2: Should an oral care protocol be recommended to improve outcomes for persons and health providers?**

PICO Research Question 2

Population: Adults 18 years of age and older who require assistance with oral health and health providers.

Intervention: Oral care protocol.

Comparison: No oral care protocol.

Outcomes: Aspiration,*** ventilator-associated pneumonia (VAP), hospital-acquired pneumonia (HAP), knowledge and confidence of health providers in ability to assess changes in oral health status.

Recommendation Question 3: What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons?

PICO Research Question 3

Population: Adults 18 years of age and older who require assistance with oral health.

Intervention: Care strategies or techniques for oral care (i.e., skills).

Comparison: No care strategies or techniques (i.e., skills) for oral care or usual care.

Outcomes: Person's oral health status, frequency of oral care.

Recommendation Question 4: What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons who are behaviourally complex and for health providers?

PICO Research Question 4

Population: Adults 18 years of age and older who are behaviorally complex (i.e., responsive and challenging) and health providers.

Intervention: Care strategies or techniques (i.e., skills) for oral care.

Comparison: No care strategies or techniques (i.e., skills) for oral care or usual oral care.

Outcomes: Person's oral health status, person's responsive behaviours, frequency of oral care, knowledge and ability of health providers to provide oral care.

* The person's experience with oral health outcome was not found in the literature. A **surrogate outcome**[G] was not chosen in replacement, as there was deemed to be a sufficient number of outcomes for Recommendation Question 1. This outcome was identified as a gap that future research may explore.

** The panel voted for Recommendation Question 2 to be: "Should an oral health assessment tool that is reliable, valid and predictable be used to improve outcomes for persons?" However, after completing a test search, no literature was identified that could answer the recommendation question. In consultation with the expert panel co-chairs, the research question was revised to the following: "Should an oral care protocol be recommended to improve outcomes for persons and health providers?" The intervention needed to address a multi-component protocol which included an oral health assessment tool as one component of the protocol.

*** The panel voted on "aspiration" as a priority outcome for Recommendation Question 2. Although aspiration is a potential outcome from ineffective and/or infrequent oral care, it was not identified in the systematic review as an outcome. Upon reflection—and in consultation with a GRADE consultant—it was noted that aspiration may be difficult to measure and/or directly link to ineffective and/or infrequent oral care. Alternatively, outcomes that were prominent in the literature (possibly due to ease and clarity of measurement) included HAP and VAP. These two outcomes replaced aspiration.

Systematic Retrieval of the Evidence

RNAO BPGs are based on a comprehensive and systematic review of the literature.

For this BPG, a search strategy was developed by RNAO's Best Practice Guideline Development and Research Team and a health sciences librarian for each of the aforementioned research questions. A search for relevant research studies published in English between January 2012 and April 2018 was applied to the following databases: Cumulative Index to Nursing and Allied Health (CINAHL), Medline, Medline in Process, Cochrane Central, Cochrane Database of Systematic Reviews and Embase.

Systematic review search dates were limited to the last five years in order to capture the most up-to-date evidence. All study designs were included. Expert panel members were asked to review their personal libraries for key studies not found through the above search strategies (see **Appendix D**). Detailed information on the search strategy for the systematic reviews, including the inclusion and exclusion criteria and search terms, is available from https://RNAO.ca.

All studies were independently assessed for relevance and eligibility by two Guideline Development Methodologists based on the inclusion and exclusion criteria. Any disagreements were resolved through **consensus**[G].

All included articles were independently assessed for risk of bias by study design using validated and reliable tools. **Randomized controlled trials**[G] were assessed using the Risk of Bias 2.0 tool (135), **quasi-experimental studies**[G] were assessed using the ROBINS-I tool (136), and systematic reviews were assessed using the AMSTAR 2 tool (137). Two reviewers reached consensus on all scores through discussion.

Data extraction was performed simultaneously and completed by both reviewers for all included studies. In total, 37 studies were included across all four systematic reviews.

In September 2019, a literature search was completed with a health sciences librarian to search for updated literature to inform the content within the **Values and Preferences**, **Health Equity** and **Practice Notes** sections of the **Discussion of Evidence** for each recommendation statement. Two databases were searched (CINAHL and Medline) for literature and guidelines published in English between April 2018 and September 2019. Findings from three studies were incorporated within the discussion of evidence (values and preferences section) for **Recommendation 2.0**, **Recommendation 5.0** and **Recommendation 6.0**.

Determining Certainty of Evidence

Certainty of Evidence

The certainty of quantitative evidence (i.e., the extent to which one can be confident that an estimate of the effect is true) is determined using GRADE methods (12). First, the certainty of the evidence is rated for each prioritized outcome across studies (i.e., for a body of evidence) per research question (12). This process begins with the study design and then requires an examination of five domains—risk of bias, inconsistency, imprecision, indirectness and publication bias—to potentially **downgrade**[G] the certainty of evidence for each outcome. See Table 8 for a definition of each of these certainty criteria.

Table 8: GRADE Certainty Criteria

CERTAINTY CRITERIA	DEFINITION
Risk of bias	Limitations in the study design and execution that may bias study results. Valid and reliable quality appraisal tools are used to assess the risk of bias. First, risk of bias is examined for each individual study and then examined across all studies per defined outcome.
Inconsistency	Unexplained differences (heterogeneity) of results across studies. Inconsistency is assessed by exploring the magnitude of difference and possible explanations in the direction and size of effects reported across studies for a defined outcome.
Indirectness	Variability between the research and review question and context within which the recommendations would be applied (applicability). There are four sources of indirectness which are assessed: ■ differences in population, ■ differences in interventions, ■ differences in outcomes measured, [and] ■ differences in comparators.
Imprecision	The degree of uncertainty around the estimate of effect. This is usually related to sample size and number of events. Studies are examined for sample size, number of events and confidence intervals.
Publication bias	Selective publication of studies based on study results. If publication bias is strongly suspected, downgrading is considered.

Source: Schunemann H, Brozek J, Guyatt G, et al., editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown: publisher unknown]; 2013. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.svwngs6pm0f2.

Following the initial consideration for rating down the certainty of quantitative evidence, three factors are assessed that can potentially enable rating up the certainty of evidence for observational studies:

- **Large magnitude of effect:** If the body of evidence has not been rated down for any of the five criteria and a large estimate of the magnitude of intervention effect is present, there is consideration for rating up.
- **Dose–response gradient:** If the body of evidence has not been rated down for any of the five criteria and a dose–response gradient is present, there is consideration for rating up.
- **Effect of plausible confounding:** If the body of evidence has not been rated down for any of the five criteria and all residual confounders would result in an underestimation of treatment effect, there is consideration for rating up (12).

GRADE categorizes the overall certainty of evidence as high, moderate, low or very low. See **Table 9** for the definitions of these categories.

For this BPG, the five GRADE quality criteria for potentially downgrading quantitative evidence and the three GRADE quality criteria for potentially rating up quantitative evidence were independently assessed by the two Guideline Development Methodologists. Any discrepancies were resolved through consensus. An overall certainty of evidence per recommendation was assigned based on these assessments. The certainty of evidence assigned to each recommendation was based on the certainty of evidence of prioritized outcomes in the studies that informed the recommendation.

Table 9: Certainty of Evidence

OVERALL CERTAINTY OF EVIDENCE	DEFINITION
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: the true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Source: Reprinted from: Schunemann H, Brozek J, Guyatt G, et al., editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown: publisher unknown]; 2013. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.svwngs6pm0f2. Reprinted with permission.

Summarizing the Evidence

GRADE evidence profiles are used to present decisions on determining the certainty of evidence, and to provide general information about the body of research evidence, including key statistical or narrative results (138). Evidence profiles summarize the body of evidence for each systematic review per outcome and are developed by the two Guideline Development Methodologists.

One GRADE evidence profile table was created for every recommendation question in this BPG. The evidence profiles for the body of quantitative studies presented the decisions made by the two Guideline Development Methodologists on the five key GRADE certainty criteria for rating down, the population included in the studies, the countries where the studies were conducted, the key results and the transparent judgments about the certainty underlying the evidence for each outcome (12). For this BPG, meta-analyses were not performed; therefore, results were synthesized using narrative.

The GRADE evidence profiles for each systematic review, organized per outcome, can be accessed online at RNAO.ca/bpg/guidelines/oral-health-supporting-adults-who-require-assistance-second-edition.

Formulating Recommendations

Evidence-to-Decision Frameworks

Evidence-to-Decision (EtD) frameworks[G] outline proposed recommendations and summarize all necessary factors and considerations based on available evidence and expert panel judgement for formulating the recommendation statements. EtD frameworks are used to help ensure that all important factors (i.e., certainty of the evidence, benefits/harms, values and preferences, and health equity) required to formulate recommendation statements are considered by an expert panel (12). The Guideline Development Methodologists draft the EtD frameworks with available evidence from the systematic reviews.

For this BPG, the EtD frameworks included the following areas of consideration for each drafted recommendation statement (see **Table 10**):

- Background information on the magnitude of the problem.
  - This includes the PICO question and general context related to the research question.
- The balance of benefits and harms of an intervention.
- Certainty of the evidence.
- Values and preferences.
- Health equity.

Decision Making: Determining the Direction and Strength of Recommendations

Expert panel members are provided with the EtD frameworks to review prior to a scheduled two-day in-person meeting to determine the direction (i.e., a recommendation for or against an intervention) and strength (i.e., strong or conditional) of a guideline's recommendations. Expert panel members are also given access to the complete evidence profiles and full-text articles.

Using the EtD frameworks as guidance, the expert panel members participated in an online vote from July 12–27, 2018. The following questions were posed to all expert panel members for each draft recommendation:

- Is there important uncertainty about or variability in how much people value the main outcomes?
- Does the balance between desirable and undesirable effects favor the intervention or the comparison?
- What would be the impact on health equity?

The Likert scales were used for voting on each factor (139). There was also the opportunity for expert panel members to provide written comments related to each of the judgement criteria.

The results of the online vote were calculated and presented to the expert panel at the two-day in-person meeting held on August 14 and 15, 2018. The online vote results were used to help guide discussion to determine the required direction and strength of each recommendation. The expert panel co-chairs and Guideline Development Methodologists facilitated the meeting to allow for adequate discussion for each proposed recommendation.

The decision on the direction and strength of each recommendation statement was determined by discussion and a consensus vote of 70 per cent of voting panel members. The voting process was moderated by the expert panel co-chairs and Guideline Development Methodologists. In determining the strength of a recommendation statement, the expert panel was asked to consider the following (see **Table 10**):

- the balance of benefits and harms of an intervention,
- certainty of the evidence,
- values and preferences, and
- health equity.

Following the in-person meeting, a good practice statement was developed by the RNAO Best Practice Guideline and Development and Research Team to capture the importance of assessing a person's oral health history, current state of oral health, and oral hygiene beliefs and practices, including self-care abilities. The panel was sent a survey asking them to respond to five questions pertaining to the statement:

1. Is the statement clear and actionable?
2. Is the message really necessary in regards to actual health practice?
3. After consideration of all relevant health outcomes and potential downstream consequences, will implementing the Good Practice Statement result in large net positive consequences?
4. Is collecting and summarizing the evidence a poor use of a guideline panel's limited time and energy?
5. Is there a well-documented clear and explicit rationale connecting the indirect evidence?

Twelve out of 16 panel members completed the survey. Their results are as follows:

- For the first question, 11 of 12 respondents responded yes.
- For the second question, all 12 respondents responded yes.
- For the third, fourth and fifth questions, 11 of the 12 respondents answered yes.

Due to the above agreement in responses among the expert panel co-chairs and expert panel, the statement was included as a good practice statement.

Table 10. Key Considerations for Determining the Strength of Recommendations

FACTOR	DEFINITION	SOURCES
Benefits and harms	Potential desirable and undesirable outcomes reported in the literature when the recommended practice or intervention is used. "The larger the difference between the desirable and undesirable effects, the higher the likelihood that a strong recommendation is warranted. The narrower the gradient, the higher the likelihood that a conditional recommendation is warranted" (140).	Includes research exclusively from the systematic review.
Certainty of evidence	"Recommendations are made with different levels of certainty; the higher the certainty, the higher the likelihood that a strong recommendation is warranted" (140).	Includes research exclusively from the systematic review.
Values and preferences	The relative importance or worth of the health outcomes or consequences following a particular clinical action. "The more values and preferences vary or the greater the uncertainty in values and preferences the higher the likelihood that a conditional recommendation is warranted" (140).	Includes evidence from the systematic review (when available), and other sources (e.g., insights from the expert panel).
Health equity	Represents the potential impact of the recommended practice or intervention on health outcomes or health quality across different populations (141).	Includes evidence from the systematic review (when available) and other sources (e.g., insights from the expert panel).

Source: Adapted by the RNAO expert panel from Schunemann H, Brozek J, Guyatt G, et al., editors. Handbook for grading the quality of evidence and the strength of recommendations using the GRADE approach [Internet]. [place unknown: publisher unknown]; 2013. Available from: https://gdt.gradepro.org/app/handbook/handbook.html#h.svwngs6pm0f2

Drafting the Guideline

The Guideline Development Methodologists wrote the draft of this BPG. The expert panel reviewed the draft and provided written feedback. The BPG then proceeded to external stakeholder review.

Stakeholder Review

As part of the guideline development process, RNAO is committed to obtaining feedback from: (a) nurses and other health professionals from a wide range of practice settings and roles, (b) knowledgeable administrators and funders of health services, and (c) stakeholder associations.

Stakeholder reviewers for RNAO BPGs are identified in two ways. First, stakeholders are recruited through a public call issued on the RNAO website (RNAO.ca/bpg/get-involved/stakeholder). Second, individuals and organizations with expertise in the guideline topic area are identified by the RNAO Best Practice Guideline Development and Research Team and the expert panel, and they are directly invited to participate in the review.

Stakeholder reviewers are individuals with subject matter expertise in the guideline topic or those who may be affected by its implementation. Reviewers may be nurses, members of the interprofessional team, nurse executives, administrators, research experts, educators, nursing students, persons with lived experience or family members.

Reviewers are asked to read a full draft of the BPG and participate in the review prior to its publication. Stakeholder feedback is submitted online by completing a survey questionnaire. Stakeholders are asked the following questions about each recommendation:

- Is this recommendation clear?
- Do you agree with this recommendation?
- Is the discussion of evidence for this recommendation thorough and clear, and does the evidence support the recommendation?

In addition, stakeholders are asked:

- Do you have any additional comments/suggestions about the background section of this Guideline?
- Do you agree with the wording of the key concepts and accompanying definitions?
- Are the supporting resources and appendices included in this BPG appropriate?

With respect to the evaluation indicators, stakeholders are asked:

- Are these indicators relevant to your practice setting?
- Do you have suggestions for other indicators and/or measures?

Survey submissions are compiled and feedback is summarized by the RNAO Best Practice Guideline Development and Research Team. Together with the expert panel, they review and consider the survey results, modifying BPG content and recommendations prior to publication to reflect the feedback received as required.

For this particular BPG, the stakeholder review process was completed between July 29, 2019 and August 28, 2019. Diverse perspectives provided feedback (see **Stakeholder Acknowledgement**).

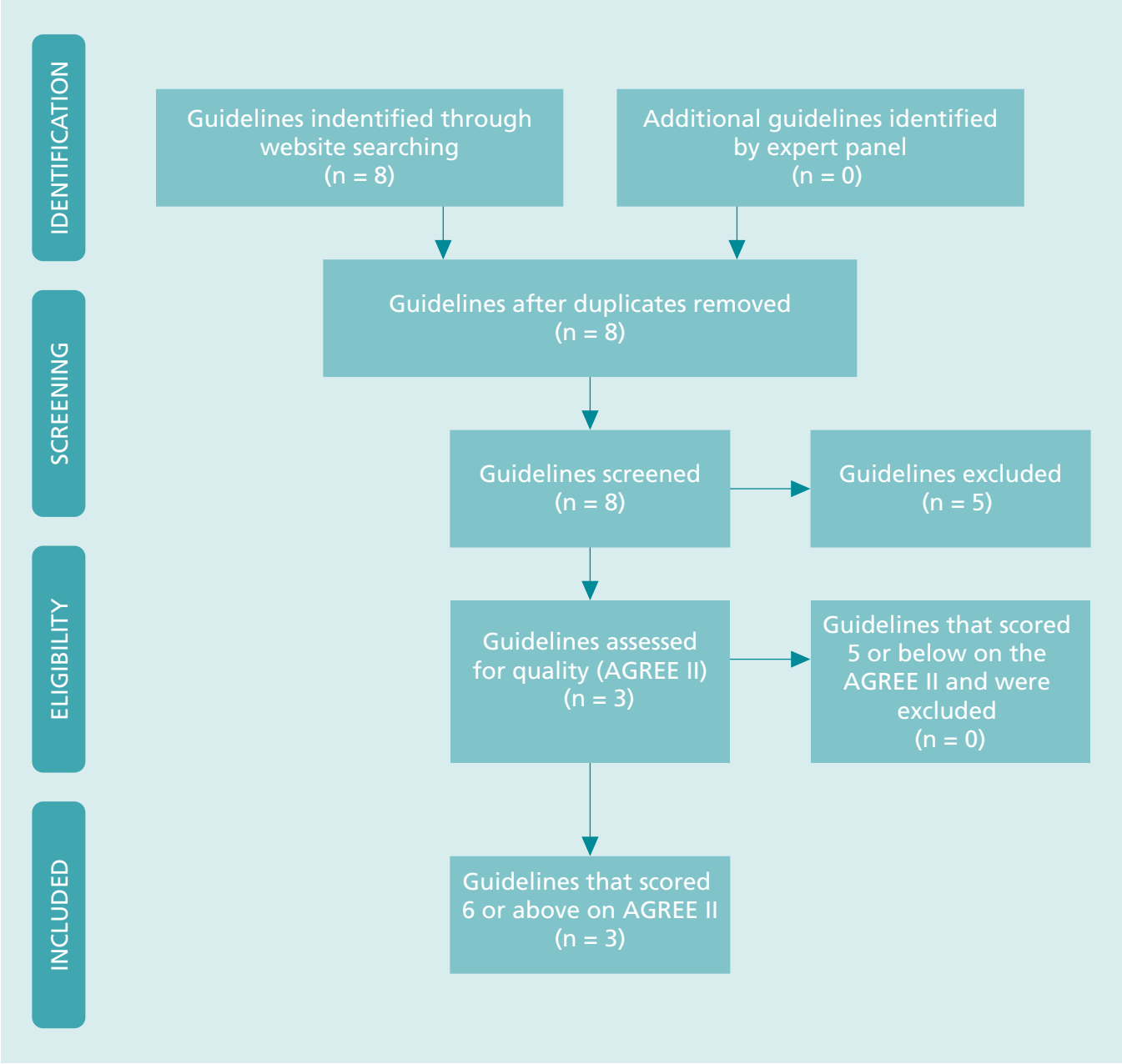
Procedure for Updating This Guideline

The RNAO commits to updating all BPGs as follows:

1. Each BPG will be reviewed by a team of specialists in the topic area every five years following publication of the previous edition.
2. RNAO International Affairs and Best Practice Guideline Centre staff regularly monitor for new systematic reviews, randomized controlled trials and other relevant literature in the field.
3. Based on that monitoring, staff may recommend an earlier revision period for a particular BPG. Appropriate consultation with members of the original expert panel and other specialists and experts in the field will help inform the decision to review and revise the BPG earlier than planned.
4. Three months prior to the review milestone, staff commence planning the review by doing the following:
    a. Compiling feedback received and questions encountered during the implementation, including comments and experiences of BPSOs® and other implementation sites regarding their experiences.
    b. Compiling a list of new clinical practice guidelines in the field and refining the purpose and scope.
    c. Developing a detailed work plan with target dates and deliverables for developing a new edition of the BPG.
    d. Identifying, with RNAO's CEO, the potential BPG expert panel co-chairs.
    e. Compiling a list of specialists and experts in the field for potential participation on the expert panel. The expert panel will be comprised of members from the original expert panel and new ones.
5. New editions of BPGs will be disseminated based on established structures and processes.

Appendix D: PRISMA Diagrams for Guideline Search and Systematic Reviews

Figure 2: Guideline Review Process Flow Diagram



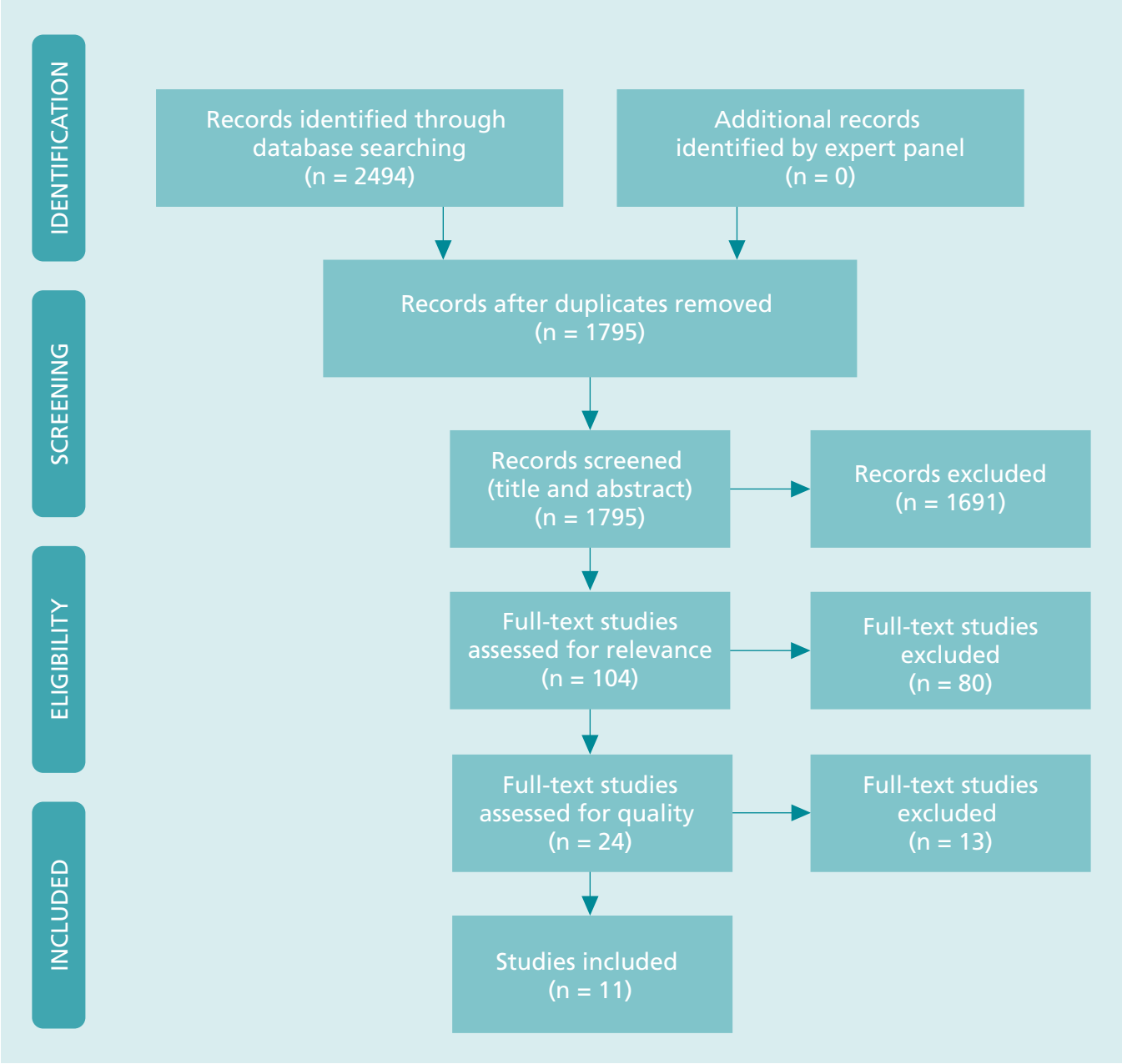
The systematic reviews that answered research questions in existing high-quality guidelines (i.e., those that scored 6 and above on AGREE II) were considered to be beyond the scope of this BPG. In this case, three guidelines scored 6 or above on AGREE II.

Flow diagram adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ. 2009;339:b2535. doi: 10.1136/bmj.b2535.

Figure 3: Article Review Process Flow Diagram for Recommendation Question #1

Should an interprofessional approach to oral care be recommended to improve outcomes for persons, health providers and students?

Outcomes: Person's oral health status, frequency of oral care, knowledge and ability of health providers and students to provide oral care.

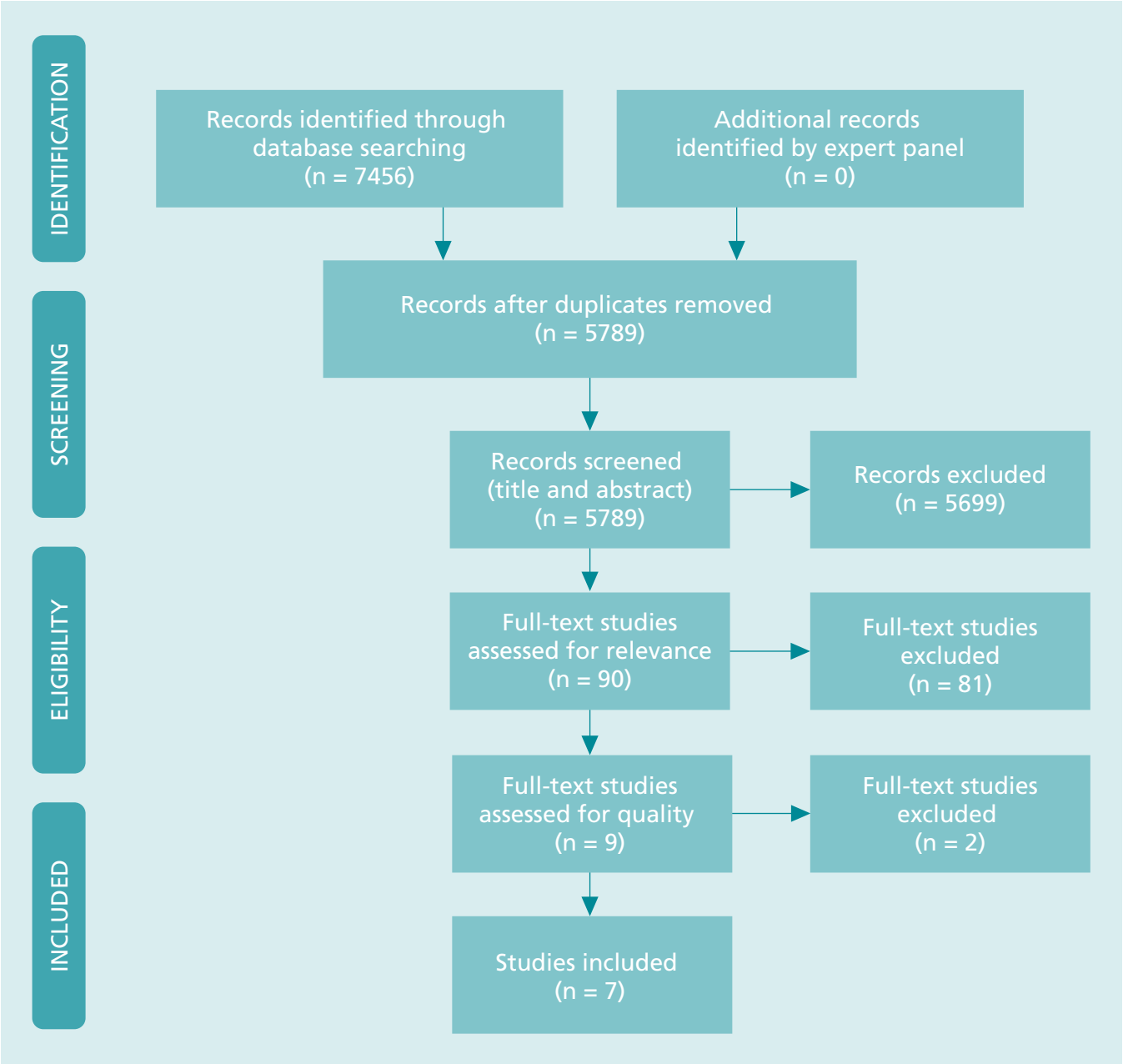


Flow diagram adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ. 2009;339:b2535. doi: 10.1136/bmj.b2535.

Figure 4: Article Review Process Flow Diagram for Recommendation Question #2

Should an oral care protocol be recommended to improve outcomes for persons and health providers?

Outcomes: Ventilator-associated pneumonia (VAP), hospital-acquired pneumonia (HAP), knowledge and confidence of health providers in ability to assess changes in oral health status.



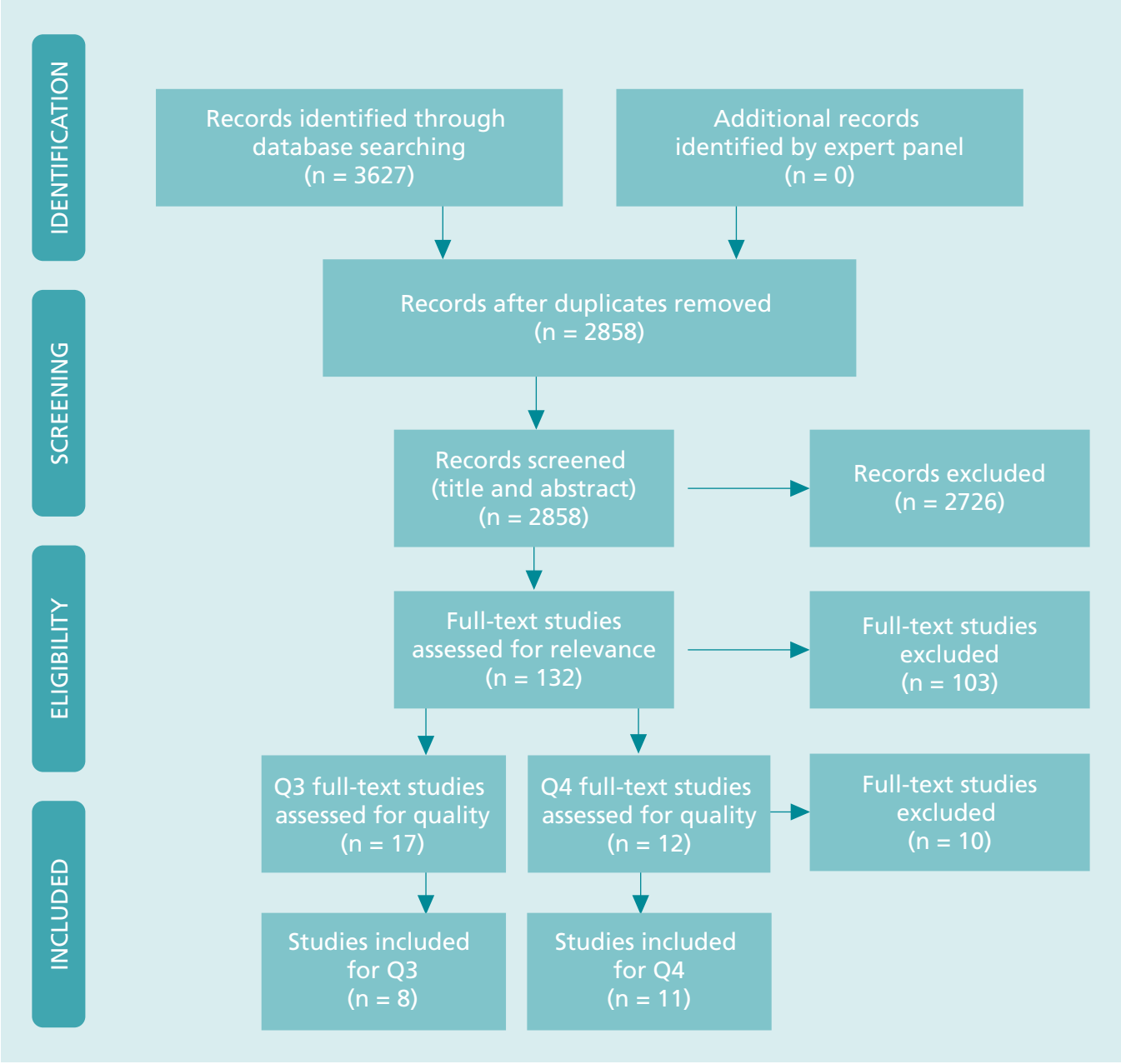
Flow diagram adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ. 2009;339:b2535. doi: 10.1136/bmj.b2535.

Figure 5: Article Review Process Flow Diagram for Recommendation Questions #3 and #4

What specific strategies or techniques should be recommended for the provision of oral care to improve outcomes for persons who are behaviourally complex and for health providers?

Recommendation Question #3 Outcomes: Person's oral health status, frequency of oral care

Recommendation Question #4 Outcomes: Person's oral health status, person's responsive behaviours, frequency of oral care, knowledge and ability of health providers to provide oral care.



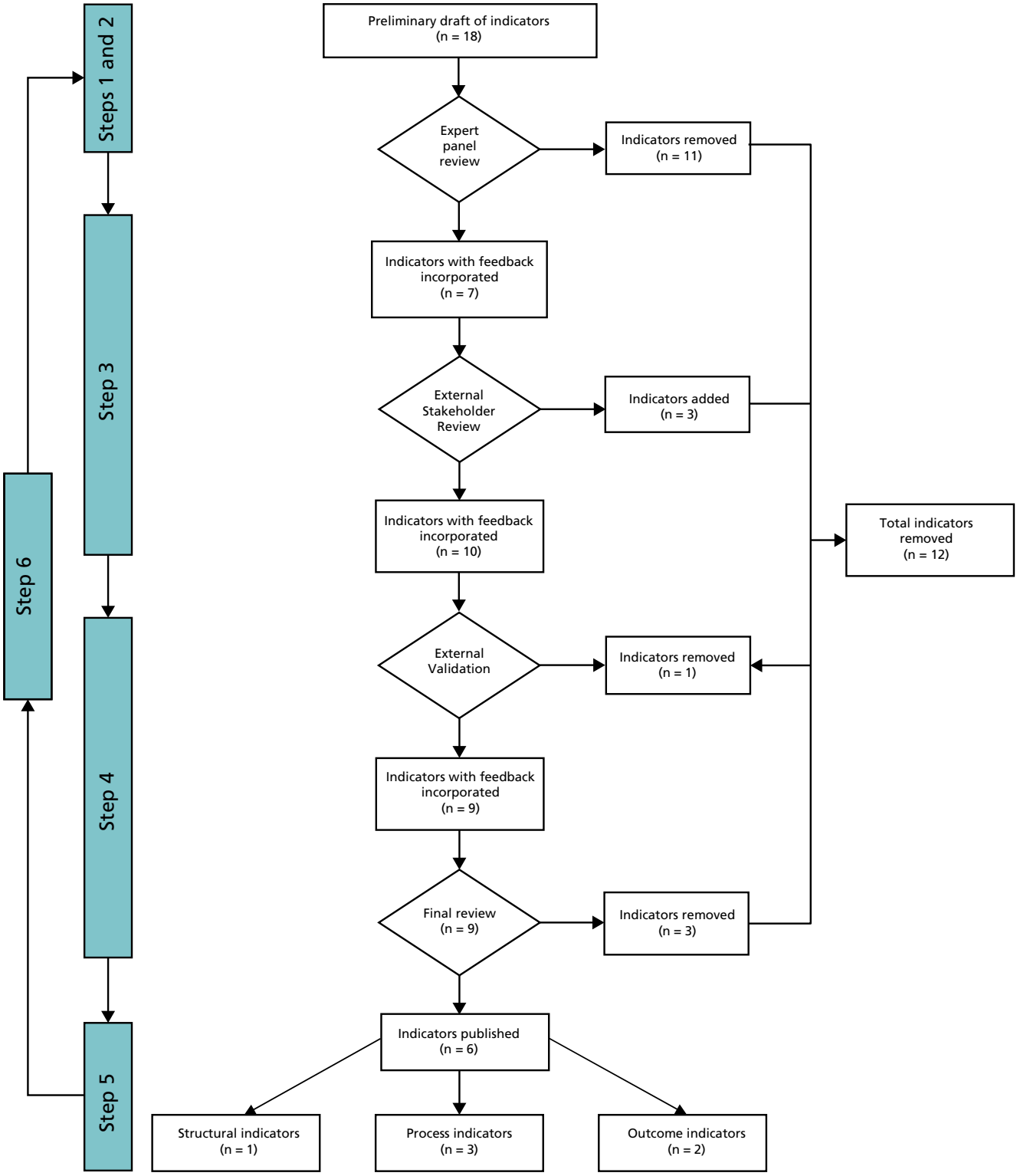
Flow diagram adapted from: Moher D, Liberati A, Tetzlaff J, et al. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. BMJ. 2009;339:b2535. doi: 10.1136/bmj.b2535.

Appendix E: Indicator Development Process

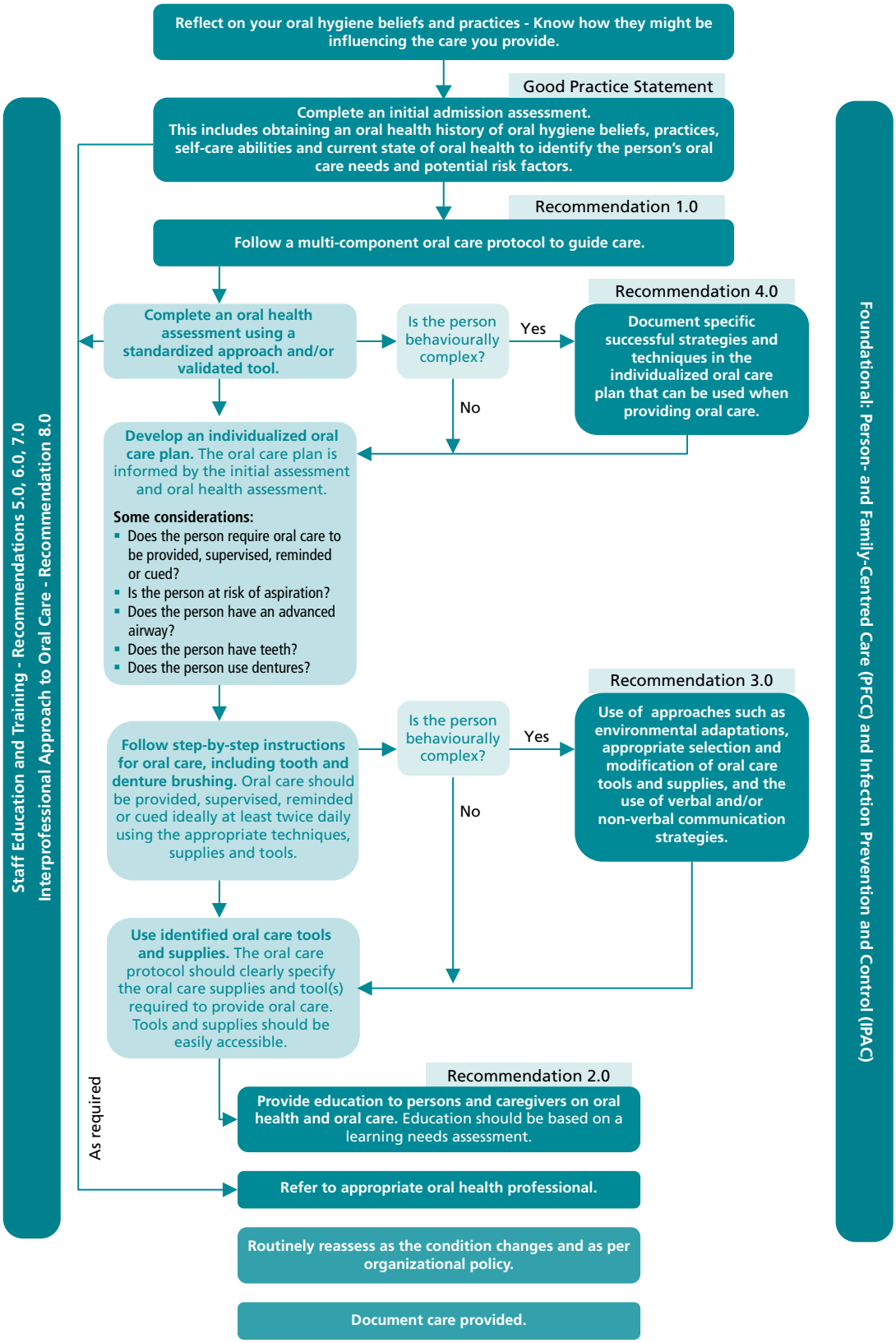
The RNAO indicator development process steps are summarized below (see **Figure 6**).

1. BPG selection. Indicators are developed for BPGs focused on health system priorities, with an emphasis on filling gaps in measurement while reducing the reporting burden.
2. Extraction of recommendations - Practice recommendations, overall BPG outcomes and BPG Order Sets™ (if applicable) are reviewed to extract potential measures for indicator development.
3. Indicator selection and development - Indicators are selected and developed through established methodology, including alignment with external data repositories, health information data libraries and expert consultation.
4. Practice test and validation - Proposed indicators are internally validated through face and content **validity**[G], and externally validated by national and international organization representatives.
5. Implementation - Indicators are published in the Guideline Evaluation tables (**Tables 2**, **3** and **4**), and data dictionaries are developed to be published on the NQuIRE® website.
6. Data quality assessment and evaluation - Data quality assessment and evaluation, as well as ongoing feedback from Best Practice Spotlight Organizations® (BPSOs®), ensure purposeful evolution of NQuIRE® indicators.

Figure 6: Indicator Development Flow Diagram



Appendix F: Algorithm for Oral Care



Appendix G: Oral Health History — Sample Questions

Please note: These are suggested questions to assist in taking an oral health history. This is not a validated tool for the assessment of a person's oral health history.

Admission Oral Health History Sample Questions

Oral Health Beliefs

Which statement best describes your beliefs regarding your teeth?

a. I expect that with proper care, my teeth will last me a lifetime.

b. It is no big deal if I lose my teeth; most people do when they get older.

c. If I lose my teeth, I can always get dentures.

On a scale of 1 to 5, where would you place the importance of your oral health?

1	3	5
Not important	Somewhat important	Very important

Personal Practices

1. Are your teeth your natural teeth? Do you have dentures? Do you have crowns?

   If the client has dentures:

   - Do you have partial or full dentures?
   - Do they fit properly?
   - How long have you had the dentures that you are currently using?

2. Are you having any difficulty doing your oral care?
3. How often do you brush your teeth in a day?
4. What type of toothbrush do you use?
5. What type of toothpaste do you use?
6. How often do you replace your toothbrush?
7. Do you use mouthwash or any rinses?
8. Do you floss regularly?
9. Have you used tobacco products (e.g., cigarettes, cigars, pipes or chewing tobacco) within the previous six months? If so, how often are you *currently* using these products each day?
10. Do you drink caffeinated beverages?
11. How often do you visit the dentist?
12. When was your last visit to the dentist?
13. Does going to the dentist upset you?
14. Do you have difficulty chewing or swallowing?
15. Is there anything else that you do to keep your mouth healthy?

Current State of Oral Health

1. Are you currently experiencing any problems in your mouth?
2. Are your teeth sensitive to hot or cold?
3. Are you currently taking any medications?

Source: Adapted and updated in 2019 by the RNAO expert panel from: Registered Nurses' Association of Ontario (RNAO). Oral health: nursing assessment and intervention. Toronto (ON): RNAO; 2008.

Admission Oral Health History (for Residents in Long-Term Care)

Resident name: _____

Date: _____

A. Resident Dental History Details

QUESTIONS	YES	NO
Have you visited the dentist in the last year?		
Would you like to continue to visit your dentist?		
If yes, who is your dentist? Name:		
Address:		
Phone:		
Resident/Power of Attorney (POA) will schedule appointments:		
If no, home's external dental service provider information given to resident/POA:		
Resident/POA signed consent for home's external dental services provider:		
DENTURES		
How old are your dentures?		
Have your dentures been assessed in the last year?		
Denture(s) labelled		
Indicate type(s)	☐ upper full denture ☐ lower full denture ☐ upper partial denture ☐ lower partial denture	
Any other restorative dental appliances?	☐ crowns ☐ implants ☐ bridge ☐ other	

B. Preferred Level of Oral Care (check one)

- ☐ **Minimal Oral Care** – oral care is a low priority, may not want daily oral care. Will see dental professionals only as needed
- ☐ **Comfort Oral Care** – maintain current oral status – daily oral care measures provided. Visit dental professionals as needed
- ☐ **Maximum Oral Care** – oral care is a priority - provide good oral care at least two times a day and visit dental professionals regularly

C. Resident Oral Health Preferences

How often would you like oral care?	
What oral care products do you like to use?	☐ toothbrush ☐ electric toothbrush ☐ mouth rinse ☐ Other: _____
When do you prefer to have your oral care completed?	**Morning:** ☐ Upon waking/with morning care ☐ After breakfast ☐ After morning snack ☐ Other: _____ **Evening:** ☐ After supper ☐ Before getting into bed ☐ Other: _____

D. Resident Oral Health Assessment

Use your home's standard oral health assessment tool to complete an oral health status exam (Example: Oral Health Assessment Tool (OHAT))

Source: Reprinted from: MacDonald I, Woodbeck H, Peachman-Faust T, et al. Oral health history and preferences tool. Toronto (ON): Registered Nurses' Association of Ontario Oral Care Community of Practice; 2016 – updated 2019. Retrieved from https://ltctoolkit.rnao.ca/node/2136. Reprinted with permission.

Appendix H: Risk Factors for Oral Disease and Poor Oral Health

The following table is not an exhaustive list of risk factors for oral disease and poor oral health; rather, it is a selection of those identified within the literature.

Table 11: Risk Factors

RISK FACTOR TYPE	SPECIFIC RISK FACTORS	SUPPORTING REFERENCE
Biological	■ aging ■ diseases such as diabetes, Parkinson's disease and osteoporosis ■ heredity ■ hormone changes ■ frailty ■ medical history ■ reduced production of saliva	Ordre des Hygienists Dentaires du Québec (OHDQ). Oral health: an investment in your quality of life [Internet]. Montreal (QC): OHDQ; 2010. Available from: http://www.ohdq.com/docs/default-source/mois-sante/msbd2010brochoralhealthinvestmentqualitylife.pdf?sfvrsn=0
Behavioural	■ alcohol and illicit drug consumption ■ clenching or grinding teeth ■ diets high in free sugars ■ eating soft foods that adhere to the teeth and are rich in sugar and carbohydrates ■ inadequate oral hygiene ■ infrequent visits to the dental clinic ■ low water consumption ■ mouth breathing ■ tobacco use	Oral health. In: World Health Organization (WHO) [Internet]. 24 September 2018. Geneva (CH): WHO; c2018. Available from: https://www.who.int/news-room/fact-sheets/detail/oral-health

RISK FACTOR TYPE	SPECIFIC RISK FACTORS	SUPPORTING REFERENCE
Environmental or situational	■ chemotherapy ■ lack of education and/or knowledge about the importance of oral care and the impact of poor oral hygiene ■ lack of integration with medical care ■ non-fluoridated community water ■ radiation therapy ■ reduced manual dexterity ■ side effects of certain medications ■ stress and/or anxiety	Ordre des Hygienists Dentaires du Québec (OHDQ). Oral health: an investment in your quality of life [Internet]. Montreal (QC): OHDQ; 2010. Available from: http://www.ohdq.com/docs/default-source/mois-sante/msbd2010brochoralhealthinvestmentqualitylife.pdf?sfvrsn=0 College of Dental Hygienists of Ontario (CDHO). Review of oral health services in Ontario: final report [Internet]. Toronto (ON): CDHO; 2014. Available from: https://www.cdho.org/docs/default-source/pdfs/oral-health-rpt/review-of-oral-health-services-in-ontario-(full-report).pdf?sfvrsn=eb8b85a0_6
Social determinants	■ cost of dental treatment ■ education ■ lack of access to dental and/or medical care (e.g., unable to travel or drive, or dental clinics are far away) ■ low socioeconomic status (income, occupation and education level)	Oral health. In: World Health Organization (WHO) [Internet]. 24 September 2018. Geneva (CH): WHO; c2018. Available from: https://www.who.int/news-room/fact-sheets/detail/oral-health Canadian Dental Association (CDA). The state of oral health in Canada [Internet]. Ottawa (ON): CDA; 2017. Available from: https://www.cda-adc.ca/stateoforalhealth/_files/TheStateofOralHealthinCanada.pdf College of Dental Hygienists of Ontario (CDHO). Review of oral health services in Ontario: final report [Internet]. Toronto (ON): CDHO; 2014. Available from: https://www.cdho.org/docs/default-source/pdfs/oral-health-rpt/review-of-oral-health-services-in-ontario-(full-report).pdf?sfvrsn=eb8b85a0_6

Appendix I: Oral Health Assessment Tools

The following is not an exhaustive list of assessment tools. Instead, it presents tools that were identified within the systematic review and AGREE II appraised guidelines, or by the expert panel and through external stakeholder feedback. Inclusion of a tool in this list does not constitute an endorsement by RNAO. Please refer to **Recommendation 1.0** and the related discussion of evidence for considerations when selecting and using tools. It is important to select a tool that is both appropriate for use in the setting in which you practice. Some tools may be validated only in specific settings. A check mark is provided in the far right column when validation studies could be located.

Table 12: Oral Health Assessment Tools

TOOL	DESCRIPTION	SOURCE/WEBSITE	VALIDATION STUDIES LOCATED
Beck Oral Assessment Scale (BOAS)	Not validated	Ames NJ, Sulima P, Yates JM, et al. Effects of systematic oral care in critically ill patients: a multicenter study. Am J Crit Care. 2011;20(5):e103-14.	
Beside Oral Exam (BOE)	Not validated	Prendergast V, Kleiman C, King M. The Bedside Oral Exam and the Barrow Oral Care Protocol: translating evidence-based oral care into practice. Intensive Crit Care Nurs. 2013;29(5):282-90.	
Brief Oral Health Status (BOHSE)	Validated and designed to be used in long-term care, with and without cognitive impairment	Kayser-Jones J, Bird WF, Paul SM, et al. An instrument to assess the oral health status of nursing home residents. Gerontologist. 1995;35(6):814-24.	✓
Geriatric Oral Health Assessment Index (GOHAI)	Validated in older adults living in long-term care	Ergül S, Akar GC. Reliability and validity of the Geriatric Oral Health Assessment Index in Turkey. J Gerontol Nurs. 2008;34(9):33-9.	✓

TOOL	DESCRIPTION	SOURCE/WEBSITE	VALIDATION STUDIES LOCATED
Mucosal-Plaque Index (MPS)	Validated in an institution for older persons with mental disabilities	Henriksen BM, Ambjørnsen E, Axéll TE. Evaluation of a mucosal-plaque index (MPS) designed to assess oral care in groups of older adults. Spec Care Dentist.1999;19(4):154-7.	✓
Oral Assessment Guide (OAG)	Validated in patients receiving radiotherapy to the head and neck region	Knöös M, Ostman, M. Oral Assessment Guide—test of reliability and validity for patients receiving radiotherapy to the head and neck region. Eur J Cancer Care (Engl). 2010;19(1):53-60.	✓
Oral Health Assessment Tool (OHAT)	Validated in 21 residential care facilities	Chalmers JM, King PL, Spencer AJ, et al. The Oral Health Assessment Tool—validity and reliability. Aust Dent J. 2005;50(3):191-9.	✓
Revised Oral Assessment Guide (ROAG)	Validated to be used by trained community health providers	Ribeiro MT, Ferreira RC, Vargas AM, et al. Validity and reproducibility of the Revised Oral Assessment Guide applied by community health workers. Gerodontology. 2014;31(2):101-10.	✓
The Holistic and Reliable Oral Assessment Tool (THROAT)	Validated in older medically ill hospitalized patients	Dickinson H, Watkins C, Leathley M. The development of the THROAT: The Holistic and Reliable Oral Assessment Tool. Clinical Effectiveness in Nursing. 2001;5(3):104-10.	✓

Appendix J: Sample Oral Health Assessment Tools

The following are two examples of validated oral health assessment tools that can be used in practice. The first is the Oral Health Assessment Tool (OHAT), and the second is the Holistic and Reliable Oral Assessment Tool (THROAT).

Sample 1: Oral Health Assessment Tool (OHAT)

Resident: _____ Completed by:_____			Date: ___/___/___	
Scores – You can circle individual words as well as giving a score in each category (* if 1 or 2 scored for any category please organize for a dentist to examine the resident)				
Category	**0 = healthy**	**1 = changes***	**2 = unhealthy***	**Category scores**
Lips	smooth, pink, moist	dry, chapped, or red at corners	swelling or lump, white/red/ ulcerated patch; bleeding/ ulcerated at corners	
Tongue	normal, moist, roughness, pink	patchy, fissured, red, coated	patch that is red and/or white, ulcerated, swollen	
Gums and tissues	pink, moist, smooth, no bleeding	dry, shiny, rough, red, swollen, one ulcer/sore spot under dentures	swollen, bleeding, ulcers, white/red patches, generalized redness under dentures	
Saliva	moist tissues, watery and free flowing saliva	dry, sticky tissues, little saliva present; resident thinks they have a dry mouth	tissues parched and red, very little/no saliva present, saliva is thick, resident thinks they have a dry mouth	
Natural teeth Yes/No	no decayed or broken teeth/roots	1-3 decayed or broken teeth/ roots or very worn down teeth	4 + decayed or broken teeth/ roots, or very worn down teeth, or less than 4 teeth	
Dentures Yes/No	no broken areas or teeth, dentures regularly worn, and named	1 broken area/tooth or dentures only worn for 1-2 hrs daily, or dentures not named, or loose	more than 1 broken area/ tooth, denture missing or not worn, loose and needs denture adhesive, or not named	
Oral cleanliness	clean and no food particles or tartar in mouth or dentures	food particles/tartar/plaque in 1-2 areas of the mouth or on small area of dentures or halitosis (bad breath)	food particles/tartar/plaque in most areas of the mouth or on most of dentures or severe halitosis (bad breath)	
Dental pain	no behavioural, verbal, or physical signs of dental pain	verbal and/or behavioural signs of pain such as pulling at face, chewing lips, not eating, aggression	physical pain signs (swelling of cheek or gum, broken teeth, ulcers), as well as verbal and/ or behavioural signs (pulling at face, not eating, aggression)	
☐ Organize for resident to have a dental examination by a dentist ☐ Resident and/or family/guardian refuses dental treatment ☐ Complete Oral Hygiene Care Plan and start oral hygiene care interventions for resident ☐ Review this resident's oral health again on Date: ___/___/___				**TOTAL SCORE:** 16

Source: Chalmers, J., King, P., Spencer, A., Wright, F., & Carter, K. (2005). The oral health assessment tool – validity and reliability. Australian Dental Journal, 50(3). 191-199. Reprinted with the permission.

Sample 2: The Holistic and Reliable Oral Assessment Tool (THROAT)

		Abnormal				
Category	**Normal: score 0**	**Mild: score 1**	**Moderate: score 2**	**Severe: score 3**	**Total score**	**Comments**
Lips	Smooth/pink	Dry/not cracked	Dry/cracked	Ulcerated/sores/ bleeding		
Teeth	Clean	Film localised plaque over teeth	Film of plaque over teeth most areas	Heavy visible deposits of plaque on and between teeth		
Dentures	Clean	Film localised plaque over teeth	Film of plaque over teeth most areas	Heavy visible deposits of plaque on and between teeth		
Gums/ gingival	Coral pink/moist	Mild inflammation/ slight redness/ slight swelling	Moderate inflammation/ redness/swelling/ glazing	Severe inflammation/ marked redness/ swelling/ ulceration/ bleeding		
Mucous membranes	Coral pink/moist	Mild inflammation/ slight redness/ slight swelling	Moderate inflammation/ redness/swelling/ glazing	Severe inflammation/ marked redness/ swelling/ ulceration/ bleeding		
Palate	Coral pink/moist	Mild inflammation/ slight redness/ slight swelling	Moderate inflammation/ redness/swelling/ glazing	Severe inflammation/ marked redness/ swelling/ ulceration/ bleeding		
Tongue	Pink/moist/no coating	Slight coating	Coating/cracks/small ulcers	Thick coating/ discoloured/ blistered/ ulcerations/cracks/ bleeding		
Saliva	Watery consistency	Slight thickening	Thick and ropy	No saliva		

Source: Dickinson, H., Watkins, C., & Leathley, M. (2001). The development of the THROAT: the holistic and reliable oral assessment tool. Clinical Effectiveness in Nursing, 5(3). 104-110. Reprinted with permissions.

Appendix K: Sample Oral Care Plans

The following are examples of care plans that were developed to facilitate communication regarding the oral care needs of persons.

Sample 1: Oral Hygiene Care Plan for Long-Term Care

ORAL HYGIENE CARE PLAN for LONG-TERM CARE

Resident:

Date:

Level of Assistance Required ☐ Independent ☐ Some assistance ☐ Fully dependent

Assessment of Natural Teeth & Tisues: *(please circle)*	***Upper***	Yes No Root tips present	**Interventions for oral hygiene care:** *(check all that apply and indicate frequency as needed)*
	Lower	Yes No Root tips present	☐ Regular large handled toothbrush ☐ a.m. ☐ p.m. ☐ Use 2 toothbrush technique ☐ a.m. ☐ p.m. ☐ Suction toothbrush ☐ a.m. ☐ p.m. ☐ Regular fluoridated toothpaste ☐ a.m. ☐ p.m. ☐ Do not use toothpaste ☐ Interproximal brush/ floss/ end tuft ☐ a.m. ☐ p.m. ☐ Dry mouth products _____ ☐ Other:
	General	*Indicate any other findings on chart below:* 	
Assessment of Dentures: *(please circle)*	**Upper**	Full Partial Not worn No denture Name on denture: Yes No	☐ Brush mouth tissues & tongue ☐ a.m. ☐ p.m. ☐ Scrub denture(s) with denture brush ☐ a.m. ☐ p.m. ☐ Soak denture(s) over night in **1** part water/**1** part vinegar solution ☐ Scrub denture cup & lid weekly with detergent & water ☐ Dry mouth products as needed ☐ Identify denture(s) ☐ Other:
	Lower	Full Partial Not worn No denture Name on denture: Yes No	

Regular Barriers to Oral Care or Dental Treatment *(check all that apply)*	☐ Forgets to do oral hygiene care ☐ Can't remember how to do oral care ☐ Refuses oral hygiene care ☐ Won't open mouth ☐ Bites toothbrush ☐ Can't or doesn't follow directions ☐ Can't swallow properly (dysphagia) ☐ Can't rinse or spit ☐ Swallows all toothpastes or liquids	☐ Responsive behaviours: ☐ Pushes away ☐ Hits ☐ Turns head away ☐ Bites ☐ Spits ☐ Swears ☐ Other _____ ☐ Constantly grinding / chewing ☐ Won't take dentures out at night ☐ Difficulty getting dentures in or out	☐ Head faces downwards ☐ Head is constantly moving ☐ Dexterity or hand problems / arthritis ☐ Can do some oral care but not all ☐ Tired, sleepy or poor attention ☐ Requires financial assistance for dental treatment ☐ Other: **Completed by:**

Source: Based on: Central South Best Practice Coordinators in Long-Term Care Initiative. Oral hygiene care plan for long term care [Internet]. Oakville (ON): Halton Region's Health Department; 2007. Modified from Chalmers 2004. Reprinted with permission.

Sample 2: Oral Health Care Plan

Oral Health Care Plan

Oral Health Assessment (OHA) Date: _____ (OHA) Review Date: _____

Oral Health Care Considerations

Problems: ☐ difficulty swallowing ☐ difficulty moving head ☐ difficulty opening mouth ☐ fear of being touched

Interventions: ☐ bridging ☐ chaining ☐ hand over hand ☐ distraction (activity board/toy) ☐ rescue

☐ other _____

Daily Activities of Oral Hygiene

	Morning	After Lunch	Night
Natural Teeth ☐ Yes ☐ No **Cleaned by:** ☐ Self ☐ Supervise ☐ Assist **Replace toothbrush** (3 monthly) Date:	☐ clean teeth, gums, tongue	☐ rinse mouth with water ☐ antibacterial product (teeth & gums)	☐ clean teeth, gums, tongue
Denture ☐ Full ☐ Partial ☐ Upper ☐ Lower **Inserted / removed by:** ☐ Self ☐ Staff **Cleaned by:** ☐ Self ☐ Supervise ☐ Assist	☐ clean teeth, gums, tongue ☐ brush denture	☐ rinse mouth with water ☐ rinse denture ☐ antibacterial product (gums)	☐ clean teeth, gums, tongue ☐ brush denture with mild soap ☐ leave dentures out overnight ☐ soak denture in cold water **Disinfect dentures** (weekly) Specify day:

Oral Hygiene Aids

☐ soft toothbrush ☐ modified toothbrush ☐ toothbrush grip ☐ denture brush ☐ spray bottle (labelled)

Oral Health Care Products

☐ mild soap (denture) _____ ☐ antibacterial product _____ ☐ saliva substitute _____

☐ lip moisturiser _____ ☐ high fluoride (5000 ppm) toothpaste _____

Additional Oral Care Instruction

☐ antifungal gel _____ ☐ denture adhesive _____

☐ interproximal brush ☐ tongue scraper ☐ normal saline mouth toilet

Comments

_____

_____

Check daily, document and report to RN if:

- bad breath
- bleeding gums
- lip blisters/sores/cracks
- tongue for any coating/change in colour
- sore mouth or gums
- mouth ulcer
- swelling of face/mouth
- broken / lost denture
- difficulty eating
- refusal of oral care
- denture not named
- excessive food left in mouth
- broken teeth

Signed RN: _____ Date: _____

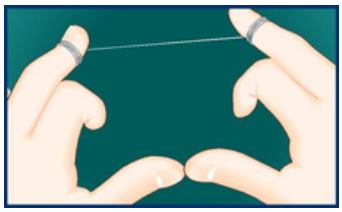
Source: Reprinted from: Lewis A, Fricker A. Better oral health in residential care. Professional portfolio: oral health care planning guidelines. Adelaide (AU): South Australian Dental Service; [date unknown]. Available from: https://www.sahealth.sa.gov.au/wps/wcm/connect/fa2b610047d74c29a03da5fc651ee2b2/BOHRC_Professional_Portfolio_OHC_Planning_Guidelines%5B1%5D.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-fa2b610047d74c29a03da5fc651ee2b2-lDQMZBE. Reprinted with permission.

Appendix L: Toothbrushing Techniques

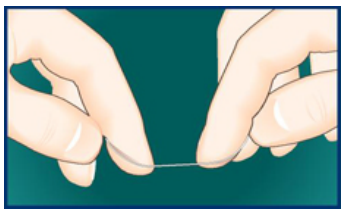
The following are a series of diagrams outlining how to floss and brush teeth.

How to floss your teeth

STEP 1
Take a length of floss equal to the distance from your hand to your shoulder



Wrap it around your index and middle fingers, leaving about two inches between your hands.



STEP 2
Slide the floss between your teeth and wrap it into a "C" shape around the base of the tooth and gently under the gumline. Wipe the tooth from base to tip two or three times.

STEP 3
Be sure to floss both sides of every tooth. Don't for get the backs of your last molars. Go to a new section of the floss as it wears and picks up particles. After flossing, roll it up in a tiny ball and put it in the garbage. Never flush floss down the toilet.

STEP 4
Brush your teeth after you floss - it is a more effective method of preventing tooth decay and gum disease.

Source: Reprinted from: Flossing & Brushing. In: The Canadian Dental Association (CDA) [Internet]. Ottawa (ON): CDA; c2019. Available from: http://www.cda-adc.ca/en/oral_health/cfyt/dental_care/flossing_brushing.asp. Reprinted with permission.

How to brush your teeth

STEP 1
Brush at a 45 degree angle to your teeth. Direct the bristles to where your gums and teeth meet. Use a gentle, circular, massaging motion, up and down. Don't scrub. Gums that recede visibly are often a result of years of brushing too hard.

STEP 2
Clean every surface of every tooth. The chewing surface, the cheek side, and the tongue side.

STEP 3
Don't rush your brush. A thorough brushing should take at least two to three minutes. Try timing yourself.

Step 4
Change your usual brushing pattern. Most people brush their teeth the same way all the time. That means they miss the same spots all the time. Try reversing your usual pattern.

Step 5
Use a soft brush with rounded bristles. The right toothbrush cleans better. Choose a size and shape that allow you to reach all the way to your back teeth. There are many different types of brushes, so ask your dentist to suggest the best one for you. CDA recommends you replace your toothbrush every three months.

Appendix M: Denture Care

According to the Ontario Dental Hygienists' Association (ODHA) and the Denturist Association of Ontario (DAO), the life span of dentures is between five to seven years—as long as proper care is taken (142).

According to ODHA, denture care should involve the following steps:

- Use a soft-bristled denture brush and denture paste or warm water and mild soap to brush dentures after meals to remove debris, stains and plaque.
- Place a towel or dish of water over the sink or counter surface when removing, cleaning or inserting dentures to prevent breakage if dentures are accidentally dropped.
- Avoid the use of toothpaste or other abrasive cleansers to prevent scratches or damage to the dentures.
- Avoid gargling or swallowing denture cleansers as they are toxic.
- Brush the gums, tongue and roof of mouth daily before inserting dentures.
- Avoid wearing dentures while sleeping so that the gums can rest.
- Leave the dentures to soak in water or denture cleaning solution when dentures are not being worn.
- Use warm water to rinse the dentures once removed from the soaking solution. Avoid hot water.
- Have only a dental professional attempt to adjust or repair dentures; failing to do so could result in more damage to the dentures and/or cause injuries to the mouth.
- Keep dentures away from children and pets to prevent damage.
- Do not wrap dentures in a paper product (e.g., tissue paper or paper towel) because they can accidentally be thrown out.
- Consult a dental professional if dentures become loose, chipped, cracked, or broken, or if they cause irritation in the mouth (142).

Figures 7-13 (below) visually demonstrate how to care for dentures.

Figure 7: Removing Denture

Removing denture

Before you start, ask the client to take a sip of water to moisten the mouth.

Encourage the client to remove their own dentures.

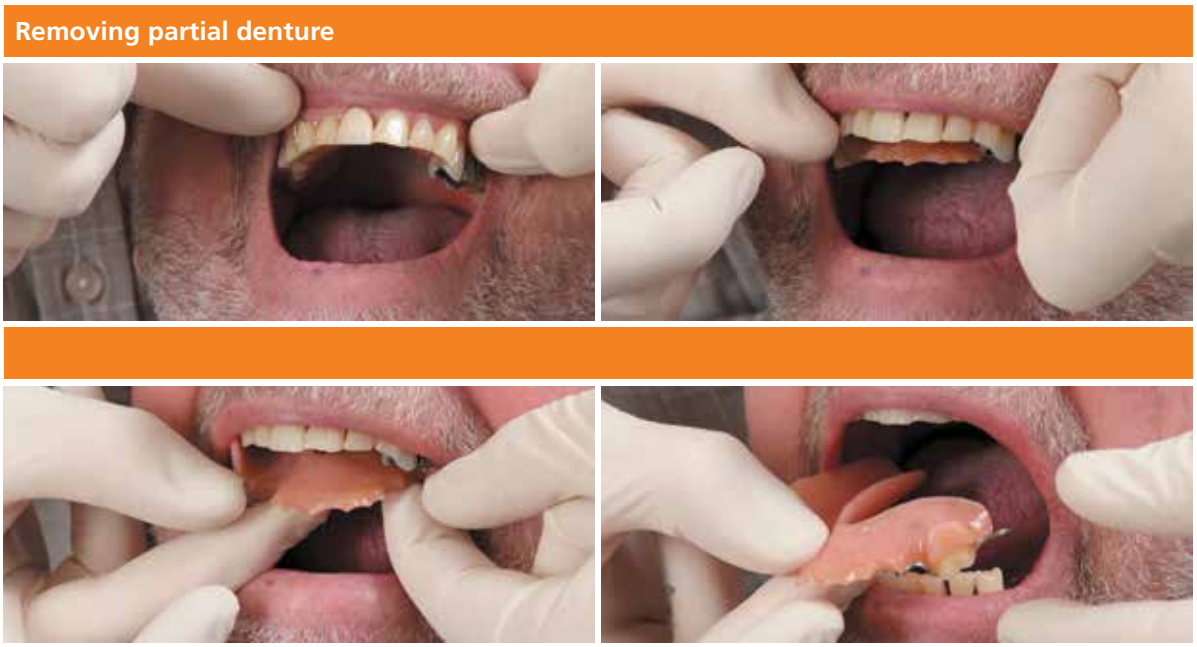
If the client requires assistance, it is easier to take out the lower denture first by holding the lower front teeth with the thumb and index finger and lifting out.

To remove upper denture, break the seal by holding front teeth with the thumb and index finger and rocking the denture up and down until the back is dislodged.

Remove the denture at a sideways angle.

If you are unable to break the seal, use a toothbrush to carefully push down on the side of the denture towards the back of the mouth until the denture is loosened and can be easily removed.

Figure 8: Removing Partial Denture



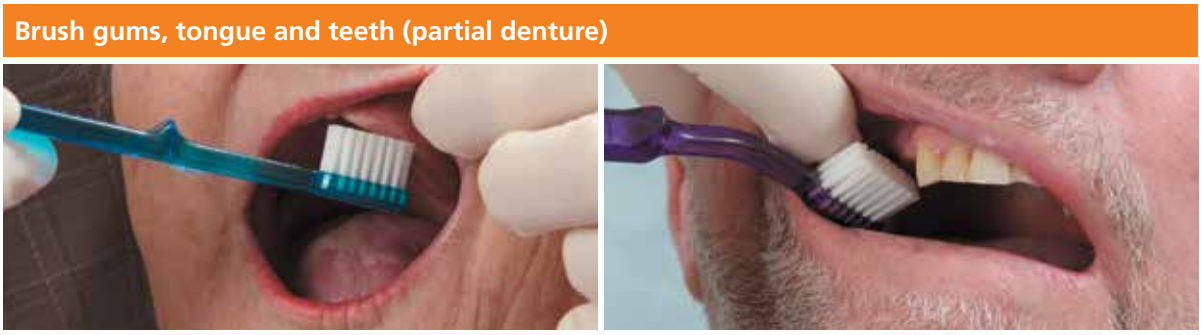
Before you start, ask the client to take a sip of water to moisten the mouth.

Encourage the client to remove their own partial denture.

If the client requires assistance, place your finger tips under the clasps that cling onto the natural teeth and push carefully.

Gently grasp the plastic part of the denture and lift it out of the client's mouth, taking care not to bend the wire clasps.

Figure 9: How to Brush Gums, Tongue and Teeth with a Partial Denture



Use a soft toothbrush to brush the gums morning and night. This will remove dental plaque, any food particles and stimulate the gums.

Ask the client to stick out their tongue and brush it carefully from the back to the front.

Do not go too far back as it will cause the client to gag.

For clients who wear a partial denture, give particular attention to the teeth that support the denture clasps. Make sure all surfaces of single teeth are cleaned (outside, biting side and inside) with fluoride toothpaste.

Figure 10: Cleaning Dentures

Cleaning dentures

Cleaning technique

Clean the denture over a sink with a bowl filled with water or place a wash cloth in the base of the sink to protect the denture from breakage if dropped.

Use a denture brush and mild liquid soap or denture paste to clean all surfaces of the denture.

Do not use normal toothpaste as it may be abrasive and over time will scratch the denture. A scratched denture can be a source of irritation and increase the risk of fungal infections.

Support the denture while cleaning as it can break very easily if dropped.

Holding a lower denture from end to end may apply force and cause the denture to break.

Figure 11: Cleaning Lower Denture

Cleaning lower denture

Cradle the lower denture between the thumb and the base of the index finger for a stable hold.

Brush all surfaces to remove dental plaque and any denture adhesive.

If the denture has been relined with a soft cushion liner, use a soft toothbrush to clean it gently.

Figure 12: Cleaning Upper Denture

Support the upper denture between the thumb and fingers for a stable hold.

Brush all surfaces to remove dental plaque and any denture adhesive.

If the denture has been relined with a soft cushion liner, use a soft toothbrush to clean it gently.

Figure 13: Cleaning Partial Denture

Use a soft toothbrush to clean metal clasps.

Gently brush around the metal clasps, taking care not to bend or move them as this will affect the denture fit.

Source: Reprinted from: Lewis A, Manuel E. Better oral health in home care: care of dentures. Adelaide (AU): South Australia Dental Services; 2014. Co-published by the Central Adelaide Local Health Network. Reprinted with permission.

Appendix N: Products and Tools for Oral Care

The following table is not an exhaustive list of products and tools; rather, it is a selection of those identified within the literature. Inclusion in this list does not constitute an endorsement by RNAO.

Table 13: Products and Tools for Oral Care

PRODUCT OR TOOL		USE AND EVIDENCE	COMMENTS
Foam swabs	Regular	■ One randomized control trial found that toothbrushing was not more effective than a foam swab at preventing VAP in ventilated ICU patients (166). ■ One non-randomized study of ventilated patients found that the effectiveness of a toothbrush and foam swab was equal in terms of their ability to remove plaque and decrease gingival inflammation (167). However, a non- randomized control trial conducted with a long-term care population found that toothbrushes were more effective than foam swabs for overall oral health (168). ■ Although weak, evidence indicates that a saline mouth rinse may be more effective than a saline swab in reducing VAP in patients who are critically ill (150).	■ Foam swabs may be useful for moisturizing tissues and removing pocketed food residue. ■ An ultra soft toothbrush may be used on sensitive gums instead of a foam swab. ■ CAUTION: Foam swabs have been banned in some areas. Two critical incidents occurred where the stick and the sponge end separated and became lodged in the patient's throat, presenting a choking hazard risk (169).
	Lemon glycerin	■ DO NOT use lemon glycerin swabs. ■ One literature review found three studies that recommended against using lemon glycerin due to acidic properties that can erode tooth enamel and irritate oral mucosa, which can eventually cause dry mouth (i.e., **xerostomia**[G]) (170).	
Interproximal cleaning	Interdental brushes/proxy brush	■ Have a small head, are either cone or cylindrical in shape, and come in a variety of widths to correspond with the space between the teeth (178). ■ Easier to use than floss because they requires less dexterity and motivation (178). ■ Compared to toothbrushing alone, interdental plus toothbrushing resulted in a decrease in gingivitis and plaque scores after one month (178). The quality of evidence was assessed to be very low. ■ Compared with toothbrushing and flossing, interdental and toothbrushing was found to reduce gingivitis at one month based on low quality evidence (but not at three months) (178). ■ There was insufficient evidence to suggest a benefit for interdental brushing or flossing in decreasing plaque scores at three months (178).	

PRODUCT OR TOOL		USE AND EVIDENCE	COMMENTS
Interproximal cleaning	Floss	■ Flossing removes dental plaque and bacteria in areas of the oral cavity that toothbrushes are unable to reach. ■ The CDA recommends flossing at least once a day and brushing teeth after flossing to prevent tooth decay and gum disease (143). ■ A reduction in gingivitis was seen at one, three and six months when participants flossed and brushed their teeth, compared to those who only brushed their teeth (179). ■ In addition to toothbrushing, flossing may be associated with a small decrease in plaque scores at one and three months; however, the evidence is unreliable (179).	
Oral rinses	Baking soda and salt water	■ Used for mucositis, mouth sores and/or sore throats caused by chemotherapy and radiation (153). ■ Soothes sores and prevents infection.	
	Cetylpyridinium chloride (e.g., Crest® Pro-HealthTM)	■ Contains broad-spectrum antimicrobial agents to improve gingival health. ■ Effective against plaque and gingivitis; however, it is not as effective as chlorohexidrine or essential oils at reducing biofilm and gingival inflammation (154). ■ In one double-blind randomized controlled trial, participants who rinsed with a rinse containing cetylpyridinium chloride were found to have a slower progression of gingival inflammation than those who used water (155). ■ Compared to baseline, an alcohol-free oral rinse containing cetylpyridinium chloride was found to decrease plaque and gingivitis after three and six months, and it was more efficacious at controlling established plaque and gingivitis than the control oral rinse that contained only sodium fluoride (156).	■ Can be purchased over the counter.
	Chlorhexidine (CHX)	■ A broad-spectrum antiseptic found in mouth rinses, gels, sprays and varnishes, used to kill gram-positive and gram-negative bacteria, fungi and yeasts. ■ As part of oral hygiene care, CHX typically follows mechanical tooth cleaning. ■ In liquid form, the optimal dose tends to be 10mL of the 0.2% solution or 15 mL of the 0.12% solution, twice daily. Effective and accepted rinse times are 30 seconds. ■ There was a large reduction in plaque build-up and a moderate decrease in gingivitis with toothbrushing and CHX mouth rinses at four to six weeks and six months (157). ■ There was no evidence that one concentration of CHX mouth rinse (i.e., 0.1%, 0.12% or 0.2%) is better than another (157). ■ However, preliminary results from an ongoing clinical trial in 13 intensive care units (ICUs) in Europe suggest that 2% CHX rinses may be associated with the eruption of painful oral lesions (158). ■ Side effects include staining of teeth, tartar build-up, temporary taste disturbance and temporary damage to the mouth lining (157). ■ Use of CHX (gel or mouth rinse) may decrease the risk of lower respiratory tract infections in critically ill cardiovascular surgery patients (159).	■ Requires a prescription. ■ CHX and mortality: in a **meta-analysis**[G] conducted by Klompas et al., there was a non-significant increase in mortality for non-cardiac surgery patients who received CHX oral care (159). ■ In a retrospective study, Klompas et al. found that CHX oral care appeared to be associated with ventilator mortality (160). ■ A meta-analysis by Price et al. found that among patients admitted to the general ICU, there was an increased mortality rate in patients who received oral care with CHX (161).

PRODUCT OR TOOL		USE AND EVIDENCE	COMMENTS
Oral rinses	Essential oil compounds (e.g., Listerine®) with or without alcohol	■ Can reduce biofilm, gingival inflammation and plaque regrowth. ■ Essential oil mouth rinses with or without alcohol are associated with significant reductions in gingivitis and plaque compared to mechanical oral hygiene alone (162). ■ Essential oil mouth rinses that are alcohol-free demonstrate the same inhibitory effect on plaque regrowth as an essential oil with alcohol (163).	■ Can be purchased over the counter.
	Fluoride mouth rinses	■ Reduce cavities and help repair early tooth decay by making tooth enamel stronger (72). ■ Are intended for persons with a high tooth decay rate or high risk of decay (72)	■ Available over the counter or as a prescription. ■ Most common rinse is made up of sodium fluoride.
	Povidone-iodine	■ An antiseptic mouthwash or gargle used in the prevention and management of general dental conditions. ■ Can be used as part of routine oral hygiene care by gargling for 30 seconds with 10–15 mL of diluted or undiluted mouthwash, followed by rinsing the mouth (164). ■ Povidone-iodine mouth rinse may be more effective than a saline mouth rinse in reducing the incidence of VAP, although the quality of the evidence is weak (150).	
	Salt water	■ Can be used for soreness of the mouth, gums or throat, or for those who underwent a dental procedure. ■ Non-irritating, gentle healing aid due to the fact that it is isotonic (i.e., it has the same concentration of salts and water as the body) (165).	■ To make: add ½ teaspoon of salt to a cup of warm water.
Oral suctions (e.g., Yankauer)		■ A rigid and plastic suction catheter that has a large hole that can be covered by the thumb to begin suction, and smaller holes at the tip where mucous and foreign matter enter. ■ The device removes mucous secretions and foreign material to maintain an airway and improve oxygenation (181).	
Nystatin		■ A topical antifungal that is normally recommended as a first-line agent for oral candidiasis that is uncomplicated. Also a prophylaxis of oral and systemic candidiasis for patients who are immunocompromised (180). ■ Available in oral suspension, topical cream or oral pastille. ■ Common recommended dose for topical nystatin is 200 000 to 600 000 IU four times daily, with treatment varying from one to two weeks to four weeks. ■ Meta-analysis demonstrated that nystatin pastilles were significantly more effective than placebo for patients with denture stomatitis (180).	

PRODUCT OR TOOL		USE AND EVIDENCE	COMMENTS
Saliva substitutes and moisturizers		■ Oral lubricants to alleviate discomfort, moisten the oral mucosa and lubricate oral tissue (171). ■ Antimicrobial substitutes that simulate human saliva and its protective properties (171). ■ Saliva stimulants to promote saliva production in patients who have minimal salivary gland function (e.g., sugar free chewing gum, lozenges or medications) (171). ■ In a randomized control trial, it was found that moisturizing gels effectively increase moisture levels in the mouth (172). An increase in the moisture levels of the tongue may have inhibited the adherence of bacteria to the tongue; it therefore may decrease a person's risk of developing pneumonia due to aspiration of bacteria (172). ■ The authors of a Cochrane systematic review found insufficient evidence to determine that the use of saliva stimulants (i.e., pilocarpine lozenges or physostigmine gel) or saliva substitutes were effective in managing symptoms of dry mouth (i.e., xerostomia) (173).	■ Examples of moisturizing products include Biotène rinse and oral balance gel
Tongue cleaners		■ A tool to clean the tongue, starting from the back and moving forward to the tip of the tongue (174). ■ There is no evidence to suggest that using a tongue scraper to clean your tongue prevents bad breath (174).	
Toothbrush	Manual	■ Removal of dental plaque through mechanical means. ■ Soft, rounded bristles and gentle pressure are recommended to decrease gingival abrasion (143). ■ Multi-level toothbrushes or those with angled bristles are more effective in removing plaque than flat-trimmed bristles (144).	■ Replace the toothbrush every three to four months, or more frequently if matting or fraying of bristles occurs (145). ■ One study demonstrated that toothbrush wear varies widely between individuals; therefore, age of the toothbrush may not be a good indication of when it should be replaced. Instead, a better measure is bristle splaying (146). ■ Toothbrushes also should be replaced after respiratory and/or gastric illness. ■ After using, rinse brush and air dry.
	Powered	■ The manual motion of toothbrushing is simulated by the lateral and rotary movements of the brush head, including: oscillation, counter oscillation, circular, ultrasonic and ionic (147). ■ This method of brushing may be easier to use for people with dexterity issues or those who have a dental appliance (148). ■ No relationship between tissue trauma and powered versus manual toothbrushes was found (147). ■ A statistically significant reduction of plaque and gingivitis in both the short-term (one to three months) and long-term (greater than three months) is seen with the use of powered toothbrushing compared to manual toothbrushing (147). ■ There was no evidence to suggest that one type of powered toothbrush is better than another for reducing plaque and gingivitis (149). ■ There was insufficient evidence to suggest that a powered toothbrush has a greater effect than a manual toothbrush in reducing incidence of ventilator-acquired pneumonia (VAP) in critically ill patients (150).	■ In one study, powered toothbrushes were reported by caregivers to be less time-consuming than manual toothbrushes, and that they were either easier to use or no different to use than manual toothbrushes (151). ■ Some caregivers also reported that residents found the powered toothbrush to be too loud, and that they complained about the vibration (151).

PRODUCT OR TOOL		USE AND EVIDENCE	COMMENTS
Toothbrush	Suction	■ Suction toothbrushes are devices with a special reusable brush head. They are used in conjunction with a suction machine. This allows for simultaneous brushing and suction of debris, plaque and fluids in the oral cavity. ■ These brushes may be easier to use for people with swallowing problems (i.e., dysphagia) and/or for those who have trouble spitting. ■ In a randomized control trial conducted by Yakiwchuk et al., there were non-significant improvements in the incidence of pneumonia when a suction toothbrush was used in comparison to a manual toothbrush (152).	
Toothpastes	Fluoride-containing toothpaste	■ The main, non-professional intervention to prevent tooth decay is regularly brushing teeth with fluoride toothpaste (175). ■ Although many different strengths of fluoride toothpaste are available, the typical strength is 1000–1500 ppm (175). ■ There is a high certainty of evidence that toothpaste containing 1000–1250 ppm of fluoride is more beneficial at preventing tooth decay than toothpaste without fluoride (175). ■ There is uncertainty about the effects of different concentrations of fluoride (175). ■ Toothpaste that contains fluoride plus triclosan (an antibacterial agent) and copolymer (an agent added to decrease the amount of triclosan that is removed by saliva or rinsing) is shown to be more effective in reducing plaque, gingivitis, bleeding gums and tooth decay than toothpaste with only fluoride added (176).	■ A few studies assessed the adverse effects of fluoridated toothpaste; they found minimal damage of tissues and tooth staining (175). ■ It is important to note that oral health professionals may recommend higher concentrations of fluoride for those who are at high risk of developing dental decay. ■ The Canadian Dental Association (CDA) has a position statement regarding fluoride, fluoride toothpaste, and fluoride mouthwashes. It can be found at: https://www.cda-adc.ca/en/about/position_statements/fluoride/ (72).
	Non-foaming toothpastes (e.g., Sensodyne, BioXtra and Biotene)	■ Particularly recommended for individuals who have difficultly swallowing or those unable to spit as they may find the foam from other toothpastes difficult to tolerate (177). ■ Rinsing of the mouth is not necessary after brushing; debris can be removed using a damp cloth (177).	

Appendix O: Communication Strategies

Table 14 outlines communication strategies that can be used during the provision of oral care for persons who are behaviourally complex.

Table 14: Communication Strategies

STRATEGY	DEFINITION	EXAMPLE
COMMUNICATION STRATEGIES USED TO APPROACH PERSON		
Greet person	Greets person upon initial contact	"Hello, Ms. X, how are you today?"
Compliment person	Compliments resident, building rapport or validating person	"You look nice today"
VERBAL STRATEGIES USED DURING ORAL CARE		
Proposition	Direction, request, or instructions	"Please turn on the water"
Repetition	Exact repeat of part or entire previous instruction.	"Turn the tap on, turn the tap"
Introduce task	At beginning of oral care, indicate to the resident that they are going to brush their teeth	"We are going to brush your teeth now"
Explanation of actions	Explain what they are going to do with the person during steps of the task	"I am going to help you turn the water on now"
Use of person's name	Address person by their first or last name during steps of oral care to gain their attention	"Ms. X, here is the toothbrush"
Negotiation	Dialogue between the health provider or caregiver and the person to reach an agreement or understanding focused on oral care	"Okay, after we finish brushing, I will get you a cup of tea"

STRATEGY	DEFINITION	EXAMPLE
Encouraging comments	Verbal praise, reassurance, optimism directed towards person while participating in the task	"You're doing a good job!"
NON-VERBAL STRATEGIES USED DURING ORAL CARE		
Hand object to the person	Provide object to resident as a tactile prompt for the person	Hand towel to the person
Guided touch	Use physical touch to guide resident through a step of the task	Guide person's hand to the toothbrush
Comfort touch	Use touch to indicate support or reassurance during a step of the task	Touch the person's shoulder
Attention touch	Use touch to gain or re-gain the attention of the resident when the person becomes distracted	Touch the person's hand to indicate that it is time to begin brushing
Demonstration	Illustrate, with action, how to perform a step of the task	Demonstrate how to brush teeth
Pointing	Visually indicate direction of an object necessary for the step of the task	Points to the location of the toothpaste

Source: Reprinted from: Wilson R, Rochon E, Mihailidis A, et al. Quantitative analysis of formal caregivers' use of communication strategies while assisting individuals with moderate and severe Alzheimer's disease during oral care. J Commun Disord. 2013;46(3):249-63. Reprinted with permission.

Appendix P: Threat Reduction Strategies

The following list includes threat reduction strategies that can be used during the provision of oral care for persons who are behaviourally complex. Threat reduction strategies are behavioural techniques that are designed to minimize a person's fight or flight response to fear and/or distress (8). The following list is not exhaustive; rather, it provides suggestions of strategies identified in the literature.

Threat Reduction Strategies:

- Engage in social conversation with the person before asking them to engage in mouth care.
- Approach the person at or below eye level to establish rapport. Have a calm and pleasant demeanor.
- Approach the person in a non-rushed manner and smile throughout the interaction.
- Provide mouth care in a quiet environment with few ambient or distracting noises.
- Start mouth care, and then have the person complete the task.
- Use gestures to cue the steps in mouth care.
- Use short, one-step requests. These can be done in conjunction with gestures.
- Encourage the person to engage in self-care by having them complete mouth care in their own manner.
- Use gentle touch to reassure the person.
- Use a hand-over-hand method, such that person places their hand on the provider's hand (or the provider places their hand on the person's hand) to guide mouth care.
- If the person begins to engage in care-resistant behaviours, use distraction techniques (e.g., singing, talking or asking them to hold an object).
- If the care-resistant behaviour escalates and threat reduction strategies do not appear to be working, another provider should intervene to replace the first provider (8, 42, 183).

Appendix Q: Description of the *Toolkit*

BPGs can only be successfully implemented if planning, resources, and organizational and administrative supports are adequate, and if there is appropriate facilitation. To encourage successful implementation of BPGs, an RNAO expert panel of nurses, researchers and administrators has developed the *Toolkit: Implementation of Best Practice Guidelines, Second Edition* (1). The *Toolkit* is based on available evidence, theoretical perspectives and consensus. We recommend the *Toolkit* for guiding the implementation of any clinical or healthy work environment BPG in a health organization.

The *Toolkit* provides step-by-step directions for the individuals and groups involved in planning, coordinating and facilitating BPG implementation. These steps reflect a process that is dynamic and iterative rather than linear. Therefore, at each phase, preparation for the next phases and reflection on the previous phases is essential.

Specifically, the *Toolkit* addresses the following key steps, as illustrated in the Knowledge-to-Action framework (111):

1. Identify the problem: identify, review and select knowledge (e.g., BPG).
2. Adapt knowledge to the local context:
   - assess barriers and facilitators to knowledge use; and
   - identify resources.
3. Select, tailor and implement interventions.
4. Monitor knowledge use.
5. Evaluate outcomes.
6. Sustain knowledge use.

Implementing BPGs to effect successful practice changes and positive clinical impact is a complex undertaking. The *Toolkit* is one key resource for managing this process. It can be downloaded at RNAO.ca/bpg/resources/toolkit-implementation-best-practice-guidelines-second-edition

Endorsements

CDHA
ACHD

September 13, 2019

Dr. Doris Grinspun, RN, MSN, PhD, LLD (hon), Dr (hc), FAAN, O.NT.
Chief Executive Officer
Registered Nurses' Association of Ontario (RNAO)
158 Pearl Street, Toronto, Ontario M5H 1L3

Dear Dr. Grinspun,

The Canadian Dental Hygienists Association (CDHA) is pleased to offer our support for the second edition of RNAO's best practice guideline – *Oral health: Supporting adults who require assistance*.

The need for good oral health continues as a person ages, becomes chronically ill or moves to a long-term care residence. Many adults who rely on others for care have poor oral hygiene and high rates of untreated oral disease. These preventable oral diseases frequently result in costly emergency procedures and are associated with more serious health complications.

CDHA appreciates the interprofessional approach to providing oral care, identification of education on oral care for health providers and caregivers, strategies and tools to assist with implementation, and the identification of future research opportunities. We are confident that the Guideline will help nurses and other members of the interprofessional team improve the oral health of adults who rely on others for care.

CDHA congratulates you for your leadership in developing this important work.

Sincerely,

Ondina Love, CAE
Chief Executive Officer

THE CANADIAN DENTAL HYGIENISTS ASSOCIATION
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October 31, 2019

Dr. Doris Grinspun, RN, MSN, PhD, LLD (hon), Dr (hc), FAAN, O.NT.
Chief Executive Officer
Registered Nurses' Association of Ontario (RNAO)
158 Pearl Street, Toronto, Ontario M5H 1L3

RE: Oral Health Best Practice Guideline

Dear Dr. Grinspun,

At its October 17-18, 2019 meeting, the Board of Directors of the Ontario Dental Association (ODA) considered the matter of the Registered Nurses' Association of Ontario (RNAO) Best Practice Guideline: *Integrating Oral Health into the Care of Adults, 2nd Edition*.

As the voluntary professional association which represents the dentists of Ontario and advocates for accessible and sustainable optimal oral health, the ODA is pleased at the attention the RNAO continues to bring to this issue, and to have had the opportunity to review, consider, and provide comment on an important tool that will assist health care practitioners better support their patients. We are appreciative of the extent to which our feedback was considered.

As outlined by Dr. Sanjukta Mohanta in our letter dated August 29, 2019, the ODA welcomes initiatives that strengthen collaboration between stakeholders. As the leaders of the oral health care team, Ontario's dentists would value continued partnership with the RNAO to advocate and educate on the importance of oral health care in long-term care facilities.

The RNAO's history of recognizing the importance of oral health, and the impact of oral care on systemic health is commendable.

I am pleased to offer our support for, and endorsement of, the revised RNAO Best Practice Guideline.

Sincerely,

Dr. Kim Hansen
Chair, Board of Directors and President

Notes

ia BPG

INTERNATIONAL
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Best Practice Guideline

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