



Guideline 5-3ORG Version 2

A Quality Initiative of the
Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO)

Organizational Guidance for the Care of Patients with Head and Neck Cancer in Ontario

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This document is an update of the organizational guidance portion of the 2009 version of the guideline (Evidence-Based Series 5-3 *The Management of Head and Neck Cancer in Ontario*).

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Organizational Guidance for the Care of Patients with Head and Neck Cancer in Ontario

Section 1: Recommendations

PURPOSE OF THIS GUIDELINE

The purpose of this guideline is to provide advice about the organization and delivery of healthcare services for adult patients with head and neck cancer (not including thyroid cancer). The recommendations establish the minimum requirements to maintain a head and neck disease site program. The recommendations are intended to ensure that the proper infrastructure is in place, and that medical, nursing, allied health professional, and support staff are experienced and properly trained. The recommendations establish standards for minimum new patient volumes for regional cancer centre disease site groups in an attempt to ensure that all patients have access to the highest standard of care available in Ontario.

This guideline is an update of the organizational guidance portion of the 2009 version of the document (Evidence-Based Series 5-3 *The Management of Head and Neck Cancer in Ontario*). At the time the original guideline was developed, there was a paucity of evidence and a formal modified Delphi technique was used to generate the recommendations. A formal review of the guideline to determine the continued relevance of the original recommendations and an updated literature search of research papers were undertaken in 2017. Little new evidence emerged. A Working Group (see Appendix 1 for membership) was formed to address changes in the organization and delivery of care of patients with head and neck cancer. The recommendations are listed below, with additions and modifications to the original version labelled as “2019 new or revised.”

QUESTIONS

- 1) What minimum requirements are necessary for the organization and delivery of multidisciplinary care to patients with head and neck malignancies, including advanced salivary and skin, but not thyroid cancers? Areas of interest include healthcare teams and unique infrastructure.
- 2) What are the recommended staff requirements and expertise required by medical/surgical, nursing, and allied healthcare professionals to provide optimal care for these head and neck patients? Areas of interest include minimum volumes and training to optimize patient outcomes.

TARGET POPULATION

Adult patients who present with symptoms of, or have been diagnosed with, head and neck malignancies, including advanced salivary and skin, but not thyroid cancer.

INTENDED USERS

This document is intended for administrators responsible for maintaining, developing, and implementing head and neck cancer programs, as well as oncology healthcare professionals who interact with head and neck cancer patients during the full continuum of care from diagnosis to post-treatment follow-up and rehabilitation.

ORGANIZATION OF CARE RECOMMENDATIONS

TEAM

Multidisciplinary Care by Core Team (2019 new)

- Given the complexity of the disease and its associated morbidities, all adult patients who present with symptoms of, or have been diagnosed with, head and neck cancer should be seen and cared for by a Core Head and Neck Cancer Multidisciplinary Team before any treatment is provided.

Core Team Membership (2019 revised)

- The core team is defined as the group of clinicians who see the majority of new head and neck cancer patients and who are responsible for the assessment, treatment, planning, management, survivorship, and rehabilitation of the patient.
- The care of patients with head and neck cancer should be coordinated among members of the core team to ensure optimally effective and safe care.
- During the diagnosis, management, and follow-up process each head and neck cancer patient will have a clearly identified Most Responsible Physician (MRP). MRP refers to the physician who has overall responsibility for directing and coordinating the head and neck cancer care and management of an individual patient at a specific point in time. The MRP will be responsible for the handover of care during periods of absence or transition of care to a different MRP and/or between treatment modalities.
- The multidisciplinary team should be comprised of:
 - Surgical oncologist with experience managing the entire scope of head and neck disease (early-to-late staged cases).
 - Radiation oncologist
 - Medical oncologist
 - Pathologist with expertise in both histopathology and cytopathology
 - Dentist with expertise in dental oncology
 - Clinical Nurse Specialist and/or Nurse Practitioner
 - Specialized Oncology Registered Nurse - Inpatient and Ambulatory registered nurses
 - Medical Imaging Physician
 - Speech-Language Pathologist
 - Registered Dietitian
 - Social Worker

Primary Care Physician

- The primary care physician is not usually involved in the day to day treatment of the head and neck cancer patient, but plays an important role in post-treatment supportive care and is responsible for the ongoing overall health of the patient.
- Based on circumstances, some primary care physicians may be actively involved in the acute care of head and neck cancer patients especially in regards to advocacy and coordination of supportive care. Such involvement is encouraged.

The Extended Team (2019 revised)

- The Extended Team will be called upon by the core team to facilitate treatment, planning, management, survivorship, and rehabilitation of the patient. Members of the extended team provide more episodic care and are not responsible for seeing the majority of new patients.
- Members of the extended team must have training or experience managing patients with head and neck cancers. The team is comprised of:
 - Anesthesiologist with expertise in airway management
 - Audiologist
 - Dental technicians and hygienists
 - Healthcare providers with expertise in gastrostomy creation, feeding tube placement, and support for patients who require tube feeding
 - Home care team
 - Hyperbaric medicine
 - Interventional radiologist
 - Mental health providers, including psychiatrist or psychologist
 - Occupational therapist
 - Ophthalmologist
 - Oral and Maxillofacial Surgeon
 - Pain management specialist
 - Palliative care specialist
 - Physiotherapist
 - Prosthodontist/Prosthetic anaplastologist
 - Radiation physicist
 - Medical Radiation technologist (radiation therapist)
 - Respiratory therapist

MINIMUM SKILL SET AND EXPERIENCE FOR TREATING HEAD AND NECK CARCINOMAS

Surgical Oncologist (2019 revised)

A Head and Neck Surgical Oncologist must have expertise in and ability to:

- Investigate, diagnose, stage, restage, and treat head and neck cancer patients
- Provide diagnostic testing that should include
 - Imaging such as ultrasound, contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI), and positron emission tomography (PET) scanning
 - Point-of-Care Fine Needle Aspiration (FNA) Biopsy
 - Direct tissue biopsy with access to frozen section pathologic examination
- Perform staging examinations including
 - Flexible nasopharyngoscopy in an ambulatory care clinic
 - Panendoscopy and examination under general anesthesia
 - Open neck biopsy
- Perform essential procedures to manage the upper aerodigestive tract and support head and neck cancer patients
 - Tracheotomy
 - Rigid laryngoscopy
 - Rigid esophagoscopy
 - Have access to nasogastric and percutaneous feeding tube insertions

- Perform extirpative surgical procedures for the treatment of skin, salivary gland, sinus/skull base, oral cavity, laryngopharyngeal, and thyroid cancers and the management of cervical lymph nodes
- Provide minimally invasive oncologic procedures such as endoscopic surgery or trans-oral robotic surgery
- Perform reconstructive surgical procedures for head and neck cancer patients that include
 - Nerve grafting such as facial nerve
 - Skin and mucosal grafting
 - Local, regional, and pedicle flap reconstruction
- Be a member of a reconstructive team where microvascular reconstruction is readily available.

Surgeons must have completed advanced fellowship training in head and neck surgical oncology

- Prerequisite to fellowship requires that candidates
 - Attain the Royal College of Physicians and Surgeons of Canada (RCPSC) Surgical Foundations examination (or equivalent)
 - Maintain a surgical case log in order to demonstrate sufficient competency relevant to the management of head and neck cancer patients
 - Successfully complete a RCPSC approved surgical residency (or equivalent)
- Advanced fellowship training must
 - Be of at least 1-year duration
 - Maintain a surgical case log in order to demonstrate sufficient proficiency of the list above regarding “expertise and ability.”

Note: Advanced training is defined as Advanced Training in Head & Neck Oncologic Surgery Fellowship through the Canadian Association of Head and Neck Surgical Oncologists (<https://cahnso.com>) or the American Head and Neck Society (<http://www.ahns.info/residentfellow/fellowships.php>).

Head and Neck Microvascular Reconstructive Surgeon (2019 revised)

- The head and neck microvascular reconstructive surgeon is an integral member of the head and neck oncology team
- Advanced fellowship training in head and neck microvascular surgery is required

Note: An individual surgeon may meet the training standards and criteria as both a Head and Neck Surgical Oncologist and Microvascular Reconstructive Surgeon.

Radiation Oncologist

- Has completed a degree in medicine or equivalent, including the RCPSC Specialist Certificate in Radiation Oncology or equivalent.
- Has enhanced knowledge and skill in the treatment of head and neck cancer patients, acquired from either a formal clinical fellowship or significant clinical training in head and neck cancer treatment at an expert centre during radiation oncology residency or fellowship.

Medical Oncologist

- Has completed a degree in medicine or equivalent, including the RCPSC Specialist Certificate in Internal Medicine or equivalent, as well as the RCPSC Certificate of Special Competence in Medical Oncology or equivalent.

- Has enhanced knowledge and skill in the treatment of head and neck cancer patients, acquired from either a formal clinical fellowship or significant clinical training in head and neck cancer treatment at an expert centre during medical oncology residency or fellowship.

Dentist with Expertise in Dental Oncology

- Has completed a university-based degree in dentistry and fulfilled the requirements of the Royal College of Dental Surgeons of Ontario (RCDSO), and completed a one-year hospital residency program that includes training and experience with head and neck cancer patients, or an oral pathology or oral medicine residency program approved by the Commission on Dental Accreditation of Canada (CDAC).

Pathologist

- Has completed a degree in medicine or equivalent, including the RCPSC Certificate of Special Competence in Anatomical Pathology.
- Has enhanced knowledge and skill in the pathology of head and neck cancer malignancies, acquired from either a formal fellowship or significant training in head and neck cancer at an expert centre.

Registered Nurse and Advanced Practice Nurse

- All entry-to-practice nurses shall have a Bachelor's degree in nursing and be registered with the College of Nurses of Ontario (CNO). Ideally, all nurses will be Certified Oncology Nurses in Canada (CON(C)), as well as members of the Canadian Association of Nurses in Oncology (CANO).

Generalized and Specialized Oncology Nurse

- Has enhanced specialty knowledge and skill and practices in an environment where the majority of individuals have a diagnosis of cancer or are at risk of developing cancer. The registered nurse (RN) is able to conduct a comprehensive health assessment, engage in supportive and therapeutic relationships with patients and families, and manage cancer symptoms and treatment side effects; provide teaching, coaching, psychosocial-spiritual support, and counselling across the continuum; facilitate continuity of care and system navigation, self-determination, and informed decision making for the individual/family; and integrate best practice/evidence-based knowledge in the care of patients and families [1-3]. Ideally, an RN working with this patient population will have general oncology experience and/or be mentored to develop the skills to work with the patient population.
- Specialized oncology nurses should be aligned and integral to the care of this patient population in both inpatient and outpatient/ambulatory care settings.
- In ambulatory care, a Primary RN, Case Management model, or head and neck site specific model should be established in order for patients and families to receive consistent care across the trajectory (diagnosis, treatment, and survivorship/palliation) and care settings (new patient clinics, reviews, and follow-up) for assessment, treatment planning, symptom management, psychosocial support, and long term follow-up.

Advanced Practice Nurse (APN) (Clinical Nurse Specialist and/or Nurse Practitioner)

- APNs should be aligned to complex, specialized, and/or high risk patient populations. The APN roles are designed to address and meet the needs of individuals, families, and groups of patients, and impact on patient, organizational, and system levels [4].

- The Nurse Practitioner should possess advanced knowledge and skill to autonomously diagnose, order, and interpret diagnostic tests; prescribe treatment (including drugs); and perform specific procedures within their legislated scope of practice [5]. The nurse practitioner should support patients receiving concurrent treatment.
- The Clinical Nurse Specialist has a Doctoral or Master's degree in nursing, with knowledge and expertise in an area of cancer nursing. There is a greater breadth and depth of knowledge compared with the specialized oncology nurse. The CNS functions in the domains of direct clinical care, education, research, organizational leadership, and professional development. The nurse practitioner, in addition to the above, has completed an approved post-Master's NP specialty certificate, is registered in the 'extended class,' and has an expanded scope of practice that includes ordering diagnostics, diagnosing, prescribing, treating, referring, and admitting/discharging. The APN should have prior oncology experience and expertise but may require role mentoring to develop specific oncology expertise [4,6,7].

Medical Imaging Physician

- Has completed a degree in medicine or equivalent and is a member of the RCPS of Ontario, as well as having completed the RCPSC five-year residency program and received a Certificate of Special Competence in Diagnostic Radiology.
- The residency should be followed by one or more years of fellowship training in a subspecialty discipline.

Speech-Language Pathologist

- Has a Master's degree or equivalent in speech pathology and is a registered member of the College of Audiologists and Speech-Language Pathologists of Ontario, as well as being an Independent Authorizer with the Assistive Devices Program. Knowledge and expertise in clinical swallowing assessment and therapy, video fluoroscopic swallowing assessment, and the management of patients with tracheotomies is required. If required to do voice restoration work for laryngectomized patients, the speech pathologist should be approved for delegated controlled acts and have specialized training in tracheoesophageal puncture (TEP).

Registered Dietitian

- Has a Bachelor's degree in human nutrition and dietetics from a university program that has been accredited by Partnership for Dietetic Education and Practice, and a post-degree supervised practicum program accredited by the Partnership for Dietetic Education and Practice.
- Registration with the College of Dietitians of Ontario is required; membership with the Dietitians of Canada is recommended.
- Hospital or patient care experience and/or oncology expertise is recommended.
- Registered dietitians would complete a detailed clinical nutrition assessment, develop individualized patient care goals and a nutrition care plan, and provide ongoing follow-up through the continuum of care.
- Experience and training in nutrition support with knowledge and expertise in swallowing function and dysphagia assessment and treatment.

Social Worker

- Has a Master's degree in social work (MSW) and registration (RSW) with the Ontario College of Social Workers and Social Service Workers (OCSWSSW). Has hospital or patient care experience as well as oncology expertise.

- Through a comprehensive psychosocial assessment, social workers should have experience in understanding and treating the social, psychological, emotional, spiritual, quality of life, and functional aspects of cancer, working with both patients and their caregivers across the cancer care continuum.
- Affiliation and membership with professional oncology social work organizations such as the Canadian Association of Psycho-Oncology (CAPO) and the Ontario Association of Social Workers (OASW) are recommended.

Primary Care Physician

- Has completed a degree in medicine or equivalent, ideally including a College of Family Physicians of Canada Certificate in Family Medicine.

Oral and Maxillofacial Surgeon (2019 new)

- Must have expertise in dental rehabilitation and implant rehabilitation to support maxillofacial prostheses.
- Has completed a degree in dentistry at an accredited dental school followed by post graduate residency training and successful completion of specialty examinations administered by the National Dental Specialty Examinations Board of the Royal College of Dentists of Canada (RCDC).
- FRCD(C) Certificate in Oral and Maxillofacial Surgery, Fellowship Training Certificate or equivalent.
- RCDSO specialty certification as oral and maxillofacial surgeon.

VOLUMES

Cancer Centre and Practitioner-Specific Volumes (2019 revised)

- Innovative collaborations between high-volume and low-volume centres and/or regions should be expanded and defined in order to maintain the high quality of care being provided to this group of patients. This includes virtual Multidisciplinary Case Conferencing (MCC) options and joint care planning with regional care delivery models.
- The development of small-volume, non-multidisciplinary treatment programs for patients with head and neck cancer should be strongly discouraged.
- The human resources and proficiency volumes outlined below are drawn from the recommendations in the original guideline and from the CCO Head and Neck Standards - Designated Centre Requirements which were developed by a multidisciplinary steering committee in 2014 to operationalize the original recommendations. There are no data in Ontario or elsewhere to directly inform minimum volume thresholds for surgeons, medical oncologists, or radiation oncologists to ensure high-quality care. Additionally, there are no data in Ontario or elsewhere or existing clinical practice guidelines to directly inform the minimum volumes for specialized oncology nurses, advanced practice nurses, speech language pathologists, registered dietitians, or social workers. The revised guideline Working Group believes that the following volumes are reasonable goals in Ontario:

Modality of Care	Recommended Minimum Volumes
Surgery	<ul style="list-style-type: none"> • Each centre offering surgery should have a minimum of 80 head and neck surgeries per year and a minimum of 2 head and neck surgical oncologists.

	<ul style="list-style-type: none"> • If reconstructive microsurgeries are performed at a centre, either by a head and neck surgical oncologist or a plastic surgeon, the surgeon should perform a minimum of 20 reconstructive microvascular procedures each year (the 20 reconstructive surgeries are included within the 80 case volume) • Generally, head and neck cancer surgery cases should be consolidated to a small number of specialized surgeons to ensure high quality of care.
Radiation Oncology	<ul style="list-style-type: none"> • Optimally, all centres offering radiation to head and neck cancer patients should treat a minimum of 100 patients per year and have a minimum of 2 radiation oncologists with expertise in head and neck cancer. • However, radiation may be provided in centres which treat a minimum of 50 patients per year if they meet all of the requirements for radiation services (including 2 radiation oncologists onsite and necessary human and physical resources) to accommodate patients who live remotely. In this situation, it is expected that both radiation oncologists will be involved in the planning and management of all patients in order to optimize experience and treatment. • Generally, head and neck cancer cases should be consolidated to a small number of specialized radiation oncologists to ensure high quality of care.
Systemic Therapy	<ul style="list-style-type: none"> • Volumes for systemic therapy will generally be dictated by radiation oncology volumes, because chemotherapy is usually given concurrently with radiation. • Chemotherapy delivered concurrently with radiation should only be delivered in centres where the radiation is being given. • There should be a minimum of 2 medical oncologists with expertise in head and neck cancers at that centre. • There is no volume requirement for patients receiving palliative chemotherapy. Palliative chemotherapy can be delivered at any regional systemic treatment program site.

Multidisciplinary Care Requirements (2019 new)

- Head and neck centres will provide surgery, radiation, and systemic therapy.
- All head and neck cancer patients require a multidisciplinary assessment by a head and neck surgical oncologist and a radiation oncologist with expertise in head and neck oncological cases at a minimum, and should receive assessment by medical oncology as needed. See Multidisciplinary Cancer Conference (MCC) guidance and information at: <https://www.cancercareontario.ca/en/guidelines-advice/types-of-cancer/286>
- Where geography makes it difficult for patients to travel to be seen in person, assessment must include examination by an otolaryngologist/head and neck surgeon who is available in the local community. In addition, patients must be reviewed at a MCC with a head and neck surgical oncologist in attendance or by virtual review of the images and clinical examination by a head and neck surgical oncologist.

- In order to allow care closer to home, radiation may be provided in centres not offering surgery if they meet all of the requirements for radiation services and are partnered with a head and neck centre.
- A “2-site” model is only divided by discipline and does not refer to meeting volumes in one discipline (e.g., surgery or radiation) by spreading across 2 hospitals. Each site is responsible for ensuring patients have access to all of the required human and physical resources.

Allied Health Professional Volumes

Profession	Recommended Minimum Volumes
Specialized Oncology Nurse	1.0 full-time equivalent (FTE) per 100 head and neck patients
Advanced Practice Nurse	1.0 FTE per head and neck site group (especially with larger site groups seeing >200 patients in consultation per year OR shared across another site group)
Speech Language Pathologist	1.0 FTE per 150 head and neck patients
Registered Dietitian	1.0 FTE per 150 head and neck patients
Social Worker	1.0 FTE per 150 head and neck patients

UNIQUE INFRASTRUCTURE REQUIREMENTS (2019 revised)

The Head and Neck Oncologic Program must function within an acute care hospital and be affiliated with a regional cancer program. The program must have access to regular ambulatory care facilities, diagnostic and staging expertise and equipment, inpatient resources, and operating room access for cancer surgery.

Note that these requirements are unique to the treatment of head and neck cancer and are beyond those requirements that would typically be found in these settings.

Program	<i>Recommendations for infrastructure requirements</i>
Multidisciplinary Ambulatory Care Clinic (2019 new)	<ul style="list-style-type: none"> • Timely access to allied health professionals (speech language pathology, audiology, social work, nutrition, oncology nursing) • Access to audiology services and assessment of middle and inner ear function
Peri-operative	<ul style="list-style-type: none"> • Infrastructure for micro-vascular, laser, and minimally invasive surgery • Rapid access to neurosurgery, thoracic surgery, and vascular surgery intraoperative support • Perioperative monitoring (Level III or greater) (e.g., specialized surgical nursing units with available 24 hour care, expertise in airway management, and free flap monitoring) • Clinic equipment - nasopharyngoscopy and image capture • Access to rigid laryngoscopy, esophagoscopy, bronchoscopy • Infrastructure for microvascular, laser, and minimally invasive surgery • Access to surgical pathology and frozen section
Medical	<ul style="list-style-type: none"> • Ambulatory chemotherapy unit and oncology pharmacy support

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Oncology	<ul style="list-style-type: none"> • Access to inpatient and ambulatory services including ability to administer chemotherapy
Radiation Oncology	<p>Radiation treatment facility including the following:</p> <ul style="list-style-type: none"> • Linear accelerator based external beam radiation treatment with multileaf collimation and IMRT/VMAT capability • CT simulation (with IV contrast available) and custom immobilization capabilities • Daily IGRT capability • Medical dosimetry and physics support for plan development and quality assurance meeting or exceeding provincial and national standards • Resources for staff and infrastructure to support the acute and long term patients' experience, including access to all multidisciplinary programs
Diagnostic Imaging (2019 new)	<ul style="list-style-type: none"> • Access to PET imaging for insured indications. <p>For current indications see: https://www.petscansontario.ca/cms/One.aspx?portalId=69866&pageId=69897#</p> <ul style="list-style-type: none"> • Ultrasound with access to point-of-care needle biopsy • Ancillary testing as required (e.g., generalized metastatic survey, bone scan, abdominal/pelvic CT, brain imaging)
Molecular Pathology and HPV Testing (2019 new)	<ul style="list-style-type: none"> • HPV status of squamous cell carcinomas of oropharynx • EBV status of keratinizing and non-keratinizing carcinomas of nasopharynx
Nursing	<ul style="list-style-type: none"> • Access to interventional radiology for insertion of PEG tubes • Feeding pumps for inpatient and ambulatory settings • Access and support from vascular access programs • Access to space to see patients collaboratively and independently from other team members, including ability to assess drop-in patients and/or manage after hours care • Triage line access to support patients outside of clinic hours • Access to acute care services to manage acute patients and systems to respond to medical emergencies • Drop-in clinics (e.g., Radiation Nursing Clinic, Urgent Care Clinics) • Patients receiving concurrent treatment should have access to an NP
Speech Language Pathology	<ul style="list-style-type: none"> • Specialized equipment for speech rehabilitation (post-laryngectomy) • Availability and access to radiology for completion of modified barium swallows and equipment to support the analysis of swallowing function • Access to space to see patients collaboratively and independently, including ability to assess drop-in patients
Nutrition	<ul style="list-style-type: none"> • Access to interventional radiology for insertion of a RIG or access to the endoscopy suite for a PEG

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	<ul style="list-style-type: none"> • Access to enteral feeding supplies for the delivery of enteral nutrition
<p>Dentistry (2019 new)</p>	<ul style="list-style-type: none"> • Capacity to support institutional volumes • Intra-oral and extra-oral (panoramic) or CBCT imaging • Instrumentation, supplies, and staffing to quickly and efficiently eliminate sources of infection • Instrumentation, supplies, and staffing to provide oral surgical, operative, prosthetic/maxillofacial prosthetic, preventive, and follow-up dental care
<p>NOTES: CBCT: cone beam computed tomography; CT: computed tomography; EBV: Epstein-Barr virus; HPV: human papilloma virus; IGRT: image-guided radiation therapy; IMRT: intensity-modulated radiation therapy; IV: intravenous; PEG: percutaneous endoscopic gastroscopy; PET: positron emission tomography; RIG: radiological inserted gastroscopy; VMAT: volumetric modulated arc therapy.</p>	

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Section 2: Internal and External Review

INTERNAL REVIEW

Internal Review Methods

Internal review involved an Expert Panel of clinical content experts reviewing the draft document and providing feedback (See Appendix 1 for a list of Expert Panel members and conflict of interest declarations). Health care practitioners with expertise in the topic of the guideline were invited from the following sources: Ontario Head and Neck Cancers Advisory Committee, co-author on the previous version of this guideline, the PEBC database of Ontario cancer care practitioners, and recommendations from Working Group members. Twenty-six people were invited and 14 agreed to participate.

For the guideline document to be approved, 75% of the content experts who comprise the Expert Panel must cast a vote indicating whether or not they approve the document, or abstain from voting for a specified reason, and of those that vote, 75% must approve the document. The Expert Panel members may specify that approval is conditional, and that changes to the document are required. If substantial changes are subsequently made to the recommendations during external review, then the revised draft must be resubmitted for approval by the Expert Panel.

Internal Review Results

The guideline was evaluated by the GDG Expert Panel (Appendix 1). The results of these evaluations and the responses of the Working Group are described below.

Thirteen of the 14 members of the GDG Expert Panel cast votes and made comments by email between 25 June 2018 and 16 September 2018. Of the 13 members that cast votes, 12 approved the document (6 with minor comments for consideration) (92%). The main comments from the Expert Panel and the Working Group responses are summarized in the table below.

Summary of the Working Group's responses to comments from the Expert Panel.

Comments	Responses
1. Suggest changes to the skills and training of dietitians and social workers to better align with the Psychosocial Oncology service delivery framework	We added more detail to the skills of these 2 health professions
2. Highlight the differences between clinical nurse specialists and nurse practitioners and provide more information about their roles in head and neck cancer care	We added details about the skills and responsibilities of each of these health professions with references to supporting guidance documents provided by the Expert Panel members
3. Corrections to training requirements for dentists and oral and maxillofacial surgeons	Corrections made
4. Ensure it is clear that the targeted patient population excludes thyroid cancer	Added this clarification to the opening paragraph
5. Include allied health professional volumes for dentists	No evidence to support a specific volume, however, details for dentistry infrastructure requirements were added

EXTERNAL REVIEW**External Review by Ontario Clinicians and Other Experts****External Review Methods**

External review involved soliciting feedback on the approved draft guideline from content experts through Professional Consultation. Relevant care providers and other potential users of the guideline were contacted and invited to provide feedback on the guideline recommendations through a brief online survey. This consultation was intended to facilitate the dissemination of the final guidance report to Ontario practitioners.

The document was disseminated to 175 health care practitioners on 16 November 2018 and the survey was closed on 14 December 2018. Practitioners with relevant expertise were identified in the PEBC database of Ontario cancer care practitioners and other relevant contacts were provided by the Ontario Society of Oral Maxillofacial Surgeons and the Royal College of Dental Surgeons of Ontario. Lists of speech language pathologists and dietitians practising in Ontario were provided by an Expert Panel member.

External Review Results

The professionals contacted were head and neck surgeons and otolaryngologists, medical oncologists, radiation oncologists, family medicine practitioners, nurse practitioners, dentists, oral maxillofacial surgeons, dietitians, speech language pathologists, medical physicists, and pathologists. Sixty-seven people completed the online survey. The results of the survey are summarized in the table below.

General Questions: Overall Guideline Assessment	Lowest Quality (1)	(2)	(3)	(4)	Highest Quality (5)
	Number of responses				
1. Rate the overall quality of the guideline report.	0	1	7	28	31
	Strongly Disagree (1)	(2)	(3)	(4)	Strongly Agree (5)
2. I would make use of this guideline in my professional decisions.	0	2	13	20	32
3. I would recommend this guideline for use in practice.	0	2	10	16	39
What are the barriers or enablers to the implementation of this guideline report?					

Summary of the Working Group's responses to comments from Professional Consultation

Discussions of barriers, enablers, and other comments from external reviewers were grouped into two common themes: resource constraints and professional roles. The comments are summarized below and grouped by theme and professional area of expertise.

In general, there was agreement that the key barriers are inadequate access for rural/northern patients and a lack of available trained professionals, and insufficient financial and other resources to support care teams. Several suggestions from practitioners regarding their required levels of education, skill sets, experience, and unique infrastructure requirements were incorporated.

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Several respondents suggested modifications to the minimum volumes for allied health professionals. Evidence for optimal volumes is lacking, therefore the minimum volumes have been retained from the original version of this guideline in which they were confirmed through a Delphi consensus process.

1. Resource Constraints	Barriers/Enablers
Dental/Oral Maxillofacial Surgery	<p>Regarding the number of Dentist FTEs per 150 patients is unnecessary. This should be entirely at the discretion and direction of the Dentist-in-Chief, whose decisions will be made based on human resources within the Department balanced with quality of care and patient safety issues</p> <p>Insufficient financial resources to support roles and to establish teams Too few qualified professionals Insufficient support from hospital administration for dentist roles, credentials, training Lack of availability of prosthodontist and/or anaplastologist Inadequate access for patients in remote/rural locations</p>
Dietitians	<p>Lack of allied health professionals Insufficient coordination of services and human resources for effective team support of patient Lack of financial resources to support all team roles Insufficient equipment <i>Good communication within and among oncology centres Core and extended team recommendation in this GL</i></p>
Speech Language Pathology	<p>Insufficient human resources, low staffing levels for SLP specifically and allied health in general Poor infrastructure (space/rooms) <i>Support & advocacy from hospital leadership for SLP role in team Principles in this guideline</i></p>
Pathology	<p>Lack of pathologists with specialized H&N training/expertise Resources for HPV and/or EBV molecular testing are inconsistent across Ontario Lack of access to dentistry</p>
Surgery/Otolaryngology	Insufficient critical volumes in some centres
Nurse Practitioner	<p>Understaffing of allied health professionals <i>Staffing recommendations in this guideline</i></p>
Radiation Oncology	Inadequate access for patients in the north/remote/rural areas of Ontario
2. Professional Roles	Barriers
Dental/Oral Maxillofacial Surgery	<p>Include appropriately trained Oral and Maxillofacial Surgeons in the Ablative / Reconstructive Team Descriptors of the core team and extended team are restrictive and may be a barrier to implementation (e.g., the term "dental oncology" is used to describe dentists in the core team but this is not a recognized specialty.) Important role but not mentioned - Oral and Maxillofacial Pathologists and Oral Medicine specialists in the diagnosis of oral cancer with direct tissue biopsies or pre-radiation assessment or post-surgical follow up. The correct description should be "Dentists with experience of hospital dentistry or Oral pathology/Oral Medicine specialists."</p>

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	<p>The general dentist should be similar to that of the primary care physician. Dentistry is fundamental in the initial work up as well as in the supportive care for the patient during and after care. Clear guidance and communication for adequate and timely referral of patients to the appropriate specialist/head and neck cancer centre, there are often barriers and delays in referring these patients into the OHIP system.</p> <p>Suggestion 1: The multidisciplinary team should be comprised of:</p> <ul style="list-style-type: none"> • Maxillofacial Prosthodontist, Prosthodontist or Dentist with expertise in dental oncology <p>Suggestion 2: • Maxillofacial Prosthodontist or Prosthodontist/Prosthetic anaplastologist</p> <p>Suggestion 3: Under the "MINIMUM SKILL SET AND EXPERIENCE FOR TREATING HEAD AND NECK CARCINOMAS" to add Prosthodontist.</p> <p>Clarification re: Training</p>
Dietitians	<p>Registration with the College of Dietitians of Ontario is mandatory and membership with the Dietitians of Canada is preferred (DC is not a requirement for employment).</p> <p>Estimated Registered Dietitian FTE for 150 head and neck patients is slightly low. (This is now starting to become evident with CCO's Quality Based indicators for head and neck patients). For 150 patients and given the complexity of treatment, nutritional needs and rehabilitation of these patients 1.5 FTE would be a better estimate.</p> <p>Qualifications of a registered dietitian should read "University degree in human nutrition and dietetics from a university program that has been accredited by the Partnership for Dietetic Education and Practice, and a post degree supervised practicum program accredited by the Partnership for Dietetic Education and Practice. Registration with the College of Dietitians of Ontario". (References: www.dietitians.ca/Become-a-Dietitian/Education and www.pdep.ca/accreditation/accredited-program-list.aspx). 3. Add a bullet point: Membership with the Dietitians of Canada is recommended.</p> <p>Dietitians do not need to be a DC member to practice in Ontario. All that is required is registration with the college of Dietitians of Ontario.</p> <p>In addition to developing a care plan, the registered dietitian should provide ongoing follow-up with the patient through the continuum of care (pre-treatment, during treatment, and post-treatment).</p> <p>I would say a blanket statement such as Experience and training in nutrition support. (Nutrition support encompasses parenteral and enteral nutrition, most of these patients receive enteral nutrition).</p>
Speech Language Pathology	<p>FTE for Speech-language pathology is a little low. I would give at least 1.5 per 150 patients.</p> <p>Lack of clarity re: role, accountabilities, processes for virtual consultation and linkage to community providers distant from surgical centres for rehabilitation and post-treatment care</p>

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	<p>The Speech-Language Pathology, Registered Dietitian, and Dentistry Core Team Members require more than basic qualifications to practice in this area. I would advocate for these disciplines needing to have enhanced /specialized knowledge, experience, and expertise, as you have specified with Oncology nursing, Pathology, and of course with Surgical, Radiation, and Medical Oncology. The aforementioned disciplines are no different and novice intervention would be inappropriate.</p> <p>“TEAM”; addressing the team's capacity for the challenges of systematic, timely co-ordination of pre-treatment inter-professional care, so that patients are seen and cared for before treatment is provided. The disease is not only complex and associated with morbidities, but its proper management by the specified team resources and requires resource and practical attention to the proactive timing and scheduling of numerous pre-treatment visits given the number of disciplines involved.</p> <p>Add a Late Treatment Effects expert on The Extended Team, typically a Radiation Oncologist and also a Neurologist with experience related to head and neck cancer.</p> <p>Add a Head and Neck Lymphedema Therapist on the Extended Team. Given the frequency of treatment-related strictures/stenosis, the Extended team requires gastroenterology and/or thoracic surgery expertise to handle these sequelae (did I miss this in the document?)</p>
<p>Medical Oncologist</p>	<p>For medical oncology, it states that the physician must have "formal clinical fellowship or significant clinical training in head and neck cancer treatment at an expert centre during medical oncology residency or fellowship". Although that will be the case for most, few newer recruits to the H&N DST will have more training than the usual 8-week rotation through the residency training and this may not be enough. It might be good to state that junior staff without extensive training should be able to work under the supervision and mentorship of a more experienced, senior medical oncologist at his/her centre.</p>
<p>3. Other comments</p>	<p><i>Barriers/Enablers</i></p>
<p>Dental/Oral Maxillofacial Surgery</p>	<p>Is this GL specific to carcinomas? Are there separate skills for other H&N cancers?</p> <p>Does not indicate who takes the lead in organizing care/coordination. If OMFA obtains their RCDS and meets all other criteria they should not be excluded from the team as the surgical oncologist as they remain within scope of care.</p> <p>What about thyroid cancers?</p> <p>Educating primary care and general dentists is key.</p> <p>Under "Unique infrastructure requirements" the guideline specifies the requirements for each program. No requirements are listed for the dentistry program, though there is a recommendation for a full time dentist in any cancer centre. I believe it is important to specify the number of dental units, laboratory equipment, etc. 2) In general, the guideline should be able to refer the reader to the equivalent dental guideline for dental treatment pre-, during, and post-head and neck cancer treatment.</p> <p>UNIQUE INFRASTRUCTURE REQUIREMENTS* (2019 revised) It is in this section that hospital dentistry should be included. Dentist should fundamentally be part of the infrastructure.</p>

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	Include a simplified form as a reference clinical document for practitioner use.
Dietitians	<p>No RDs listed on development team in report. There needs to be clearer identification for the G-Tube insertions. PEG is for a Percutaneous Endoscopic Gastrostomy tube inserted through Endoscopy suites. RIG is Radiologically Inserted Gastrostomy tube inserted through Interventional Radiology. Dietary should be replaced with Oncology Nutrition. Suggest replacing 'Dietary' with 'Dietitians' or 'Nutrition Services'. Dietary does not accurately affect our role in this setting. Please change "Dietary" to "Nutrition" or "Nutrition and Dietetics". Dietary is a term that refers to a food service operation, rather than a clinical profession such as nutrition and dietetics.</p> <p>Under Dietary: This term dietary is very outdated and I would suggest it should be changed to Nutrition In this section: I would reword the whole sections and suggest the following ... Access to interventional radiology for insertion of a radiological inserted gastrostomy (RIG) or access to the endoscopy suite for a percutaneous endoscopic gastrostomy (PEG). (This is repeated twice in this section)? Also rather than feeding pumps for inpatient and ambulatory setting... I would suggest Access to enteral feeding supplies for the delivery of enteral nutrition. I don't think you need to specify pumps, feeding bags, syringes...but just saying pump alone is not all inclusive.</p>
Speech Language Pathology	Under requirements for SLP: Please add the following: Access to space to see patients collaboratively and independently from other team members, including ability to assess drop-in patients. Include pharmacist in the core or extended team?
Pathology	<i>The clarity of this document will facilitate its adoption.</i>
Medical Oncologist	If it's all expert opinion, mention it at the beginning (maybe even bolded) but otherwise would be good to see levels of evidence throughout as for most/all other guidelines.

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Appendix 1: Affiliations and Conflict of Interest Declarations

In accordance with the [PEBC Conflict of Interest \(COI\) Policy](#), the guideline authors and internal reviewers were asked to disclose potential conflicts of interest. The COI declared did not disqualify any individuals from performing their designated role in the development of this guideline.

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