



Evidence-Based Series 5-3 IN REVIEW

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

The Management of Head and Neck Cancer in Ontario

*R Gilbert, M Devries-Aboud, E Winquist, J Waldron, M McQuestion,
and the Head and Neck Disease Site Group*

Report Date: December 15, 2009

An assessment conducted in November 2015 placed Evidence-based Series (EBS) 5-3 IN REVIEW. This means that it is undergoing a review for currency and relevance. The Head and Neck Disease Site Group (DSG) has determined that it is still appropriate for this document to continue to be available while this updating process unfolds. The PEBC has a formal and standardized process to ensure the currency of each document ([PEBC Assessment & Review Protocol](#))

The full Evidence-based Series 5-3 is comprised of 3 sections and is available on the [CCO Website](#) on the [PEBC Head & Neck DSG page](#).

- Section 1: Organizational and Clinical Practice Guideline Recommendations
- Section 2: Evidentiary Base
- Section 3: EBS Development Methods and External Review Process

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Evidence-Based Series 5-3: Section 1

The Management of Head and Neck Cancer in Ontario: Organizational and Clinical Practice Guideline Recommendations

*R Gilbert, M Devries-Aboud, E Winqvist, J Waldron, M McQuestion,
and the Head and Neck Disease Site Group*

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PURPOSE OF THIS GUIDELINE

The Head and Neck Disease Site Group (DSG) has recognized a need for guidance regarding the organization and delivery of healthcare services for patients with head and neck cancer, including specific recommendations for the organization of care, the human and physical resources required, and appropriate treatment approaches that should be considered for this population of patients.

QUESTIONS

Organization of Care

- 1) What minimum requirements are necessary for the organization and delivery of multidisciplinary care to patients with head and neck mucosal malignancies? Areas of interest include healthcare teams and unique infrastructure.
- 2) What are the recommended staff requirements and expertise required by medical/surgical and allied healthcare professionals to provide optimal care for head and neck patients? Areas of interest include minimum volumes and training to optimize patient outcomes.

Clinical Management

- 3) What is the optimum clinical management recommended for patients with tumours of the head and neck?

TARGETTED PATIENT POPULATION

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

INTENDED USERS

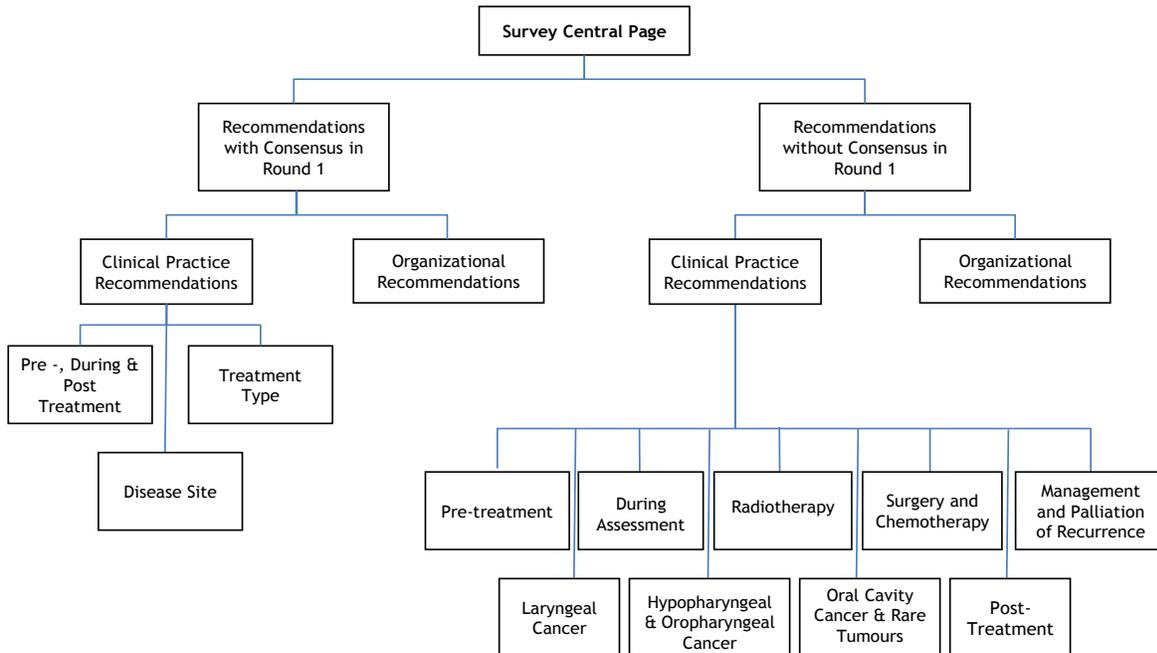
This document is intended for administrators responsible for developing and implementing new head and neck cancer programs, as well as oncology healthcare professionals who interact with head and neck cancer patients during the full continuum of care from diagnosis to post-treatment follow-up and rehabilitation.

OVERVIEW

The recommendations were developed by the Head and Neck Management Working Group (HNMWG) (see Section 2: Appendix 1 for list of members), using the methods of guideline adaptation (1), updating of evidence, and formal consensus in the following manner:

- Draft recommendations for the organization of care were adapted to the Ontario context from a service guidance document *Improving Outcomes in Head and Neck Cancers* published in 2004 by the National Institute for Health and Clinical Excellence (NICE) (2), and supplemented by the expert opinion of the working group. This yielded 27 draft organization of care recommendations.
- Draft recommendations for clinical management were adapted to the Ontario context from a clinical practice guideline *Diagnosis and Management of Head and Neck Cancer* published in 2006 by the Scottish Intercollegiate Guidelines Network (SIGN) (3). The guideline was supplemented by an additional literature search to update the evidence since 2004 (4-14), and to address areas not covered by the original source documents (e.g., IMRT) (15), and the expert opinion of the working group. The search yielded 150 draft clinical management recommendations.
- A modified Delphi process was used to review and come to consensus on the draft recommendations. A diverse group of individuals involved in the care of patients with head and neck cancer (medical oncologists, radiation oncologists, surgeons, nurses, registered dietitians, speech language pathologists, and social workers) participated in a two-round consensus process, conducted through an online survey (43 respondents in round 1 and 30 respondents in Round 2) (Figure 1) (see additional details in Section 2). Consensus was defined as 75% or more of respondent having registered strong agreement in favour of the recommendation. All 177 recommendations developed through the consensus process are presented, according to the outline below. For 144 recommendations (81%), consensus in favour of the recommendation was met. For 33 recommendations (19%), the threshold level for consensus was not met. Of these, the level of agreement reached 65%. Each of the recommendations that did not achieve consensus is marked by a cross symbol (†). There are a few recommendations that were thought to have reached consensus in round one, but it was later discovered this was not the case. However, since there was no disagreement with any of these draft recommendations, they were left unchanged. They are marked as having reached consensus in round 1 with a pie symbol (consensus round 1st).

Figure 1: Schematic drawing showing the steps of the second round of the survey.



RECOMMENDATIONS

Overall

The specific recommendations made in this document are set out with a light blue background; explanatory text and qualifying statements have no background. Each recommendation is listed with a source, (i.e., NICE, SIGN, and HNMWG), the level (%) of agreement, and in which round consensus was achieved. Recommendations whose source is marked with an asterisk (*) are based on the expert opinion of the source. Each of the recommendations that did not achieve consensus is marked by a cross symbol (†).

The HNMWG recommends that all 177 recommendations should be implemented.

Key Evidence and Adaption

Two guidelines identified through the environmental scan were considered the most appropriate to answer the guideline questions. The NICE document *Guidance on Cancer Services - Improving Outcomes in Head and Neck Cancer (2)* addressed the organization of care questions. The SIGN document *Diagnosis and Management of Head and Neck Cancer (3)* addressed the clinical management questions. These two documents served as the basis for this guideline and were supplemented by evidence obtained through an updated search of the literature. Both guidelines clearly defined their scope and purpose, as well as providing clear and concise recommendations. Systematic review methodologies were used comprehensively by both, and each assessed and addressed the scientific quality of the included studies. The quality of included research in these two guidelines ranged from satisfactory to high quality.

The working group utilized the ADAPTE process (<http://www.adapte.org/>) to adapt recommendations from these two guidelines (1). The objective of the ADAPTE process is to take advantage of existing guidelines in order to enhance the efficient production and use of the resulting high-quality adapted guidelines. The adaptation process has been designed to ensure that the resulting and final recommendations address specific health questions relevant for the context of use and that they are suited to the needs, priorities, legislation, policies, and resources in the targeted setting, without undermining their validity.

Following the ADAPTE protocol, the relevant guidelines identified were screened and assessed for quality, currency, content, consistency, and acceptability/applicability, using the Appraisal of Guidelines Research and Evaluation (AGREE) instrument (16). Quality was assessed by three independent reviewers. With the instrument, agreement with a series of statements, intended to capture dimensions of guideline quality, is rated on a scale of 1 to 4 for each of the 23 instrument statements.

The guideline development process, utilizing ADAPT, proceeds under the assumption that the original recommendations are reasonable and supported by the evidence. Confidence in this assumption is fostered from satisfactory AGREE scores. It is beyond the scope of the guideline development process and this document to make the connection between the recommendations and the original key evidence. For those who wish to do so, please refer the NICE (2) and SIGN (3) documents.

The complete evidentiary base for this process included:

- Six organizational guideline:
 - 1) Guidance on Cancer Services - Improving Outcomes in Head and Neck Cancer, NICE, 2005
 - 2) Upper Aerodigestive Tract (Including Salivary Glands), College of American Pathologists, 2005
 - 3) Organizational Standards for the Delivery of Intensity Modulated Radiation Therapy (IMRT) in Ontario, Program in Evidence-Based Care (PEBC), Cancer Care Ontario (CCO), 2008
 - 4) Provider-Patient Communication: A Report of Evidence-Based Recommendations to Guide Practice in Cancer, PEBC, CCO, 2008
 - 5) Cancer-related Pain Management: A Report of Evidence-Based Recommendations to Guide Practice, PEBC, CCO, 2008
 - 6) Organizational Standards for Diagnostic Assessment Programs, PEBC, CCO, 2007
- Four clinical practice guidelines:
 - 1) Diagnosis and Management of Head and Neck Cancer, SIGN, 2006
 - 2) Clinical Practice Guidelines for the Prevention and Treatment of Cancer Therapy-Induced Oral and Gastrointestinal Mucositis, Multinational Association of Supportive Care in Cancer (MASCC), 2004
 - 3) American Society of Clinical Oncology Guideline for Antiemetics in Oncology: Update 2006, American Society of Clinical Oncology, 2006
 - 4) 2006 Update of Recommendations for the Use of White Blood Cell Growth Factors: An Evidence-Based Clinical Practice Guideline, J Clin Oncol, 2006
-
- One meta-analysis:
 - 1) Hyperfractionated or Accelerated Radiotherapy in Head and Neck Cancer: A Meta-analysis, Lancet, 2006
- Two randomized controlled trials:

- 1) Cisplatin, Fluorouracil, and Docetaxel in Unresectable Head and Neck Cancer, N Engl J Med, 2007
- 2) Cisplatin and Fluorouracil alone or with Docetaxel in Head and Neck Cancer, N Engl J Med, 2007

The HNMWG acknowledges that in some cases the available evidence listed above did not directly establish optimal strategies in the management of head and neck cancer. In such instances, the HNMWG drafted recommendations based on the collective expert opinion of the working group members.

IN REVIEW

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IN REVIEW

A. ORGANIZATION OF CARE RECOMMENDATIONS

I. Preamble

In order to ensure the provision of the highest quality of care for patients with head and neck mucosal malignancy, the working and consensus groups have developed a set of organizational standards and treatment recommendations. The organizational recommendations were developed to establish the minimum requirements to maintain a head and neck disease site program. The recommendations are intended to ensure that the proper equipment is in place, and that medical 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.

II. Teams

The teams will include a core team, primary care provider, and extended team. The care of patients with head and neck cancer should be coordinated among members of an experienced Core Team, comprised of a group of physicians and allied healthcare providers who will be responsible for the assessment, treatment, planning, management, survivorship, and rehabilitation of the patient. The Primary Care Provider will be responsible for the ongoing overall health of the patient and will offer supportive care after treatment. 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 Teams must have training or experience managing patients with head and neck cancers.

1. The Core Team

Recommendation

- The Core Team is comprised of a group of physicians and allied healthcare providers who will be 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, who include the following:
 - Head and neck surgeon/Reconstructive surgeon
 - Medical oncologist
 - Radiation oncologist
 - Dentist with expertise/interest in dental oncology
 - Pathologist with expertise in both histopathology and cytopathology
 - Clinical Nurse Specialist or Nurse Practitioner
 - Primary Registered Nurse - Inpatient and Ambulatory nurses
 - Medical imaging physician
 - Speech-Language Pathologist
 - Registered Dietitian
 - Social Worker

(Source: NICE, Consensus 80%, Round 2)

2. Primary Care Physician

Recommendation

- The primary care physician is not 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.

(Source: HNMWG*, Consensus 77%, Round 2)

3. The Extended Team

Recommendation

- 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 must have training or experience managing patients with head and neck cancers. The team is comprised of:
 - Oral Surgeon: Doctor of Dental Surgery (DDS) with fellowship training in maxillofacial surgery, as well as a proficiency with implantation techniques
 - Prosthodontist/Prosthetic anaplastologist
 - Anesthesiologist with a special interest in airway management
 - Healthcare providers with expertise in gastrostomy creation, feeding tube placement, and support for patients who require tube feeding
 - Interventional radiologist
 - Ophthalmologist
 - Pain management specialist
 - Palliative care specialist
 - Dental technicians and hygienists
 - Mental health providers, including psychiatrist or psychologist
 - Physiotherapist
 - Occupational therapist
 - Radiation physicist
 - Radiation therapist
 - Respiratory therapist
 - Hyperbaric medicine
 - Home care team

(Source: NICE, Consensus 90%, Round 2)

III. Minimum Skill Set and Experience for Treating Head and Neck Carcinomas

1. The Core Team

Head and Neck Surgeon/Reconstructive Surgeon

Recommendation

- Has completed a degree in medicine or equivalent, including a Royal College of Physicians and Surgeons of Canada (RCPSC) Specialist Certificate in a surgical discipline. *Head and neck surgeon* is defined as a surgeon trained in otolaryngology/head and neck surgery, general surgery, or plastic surgery, with advanced training in head and neck oncology. *Advanced training* is defined as having an Advanced Training in Head & Neck Oncologic Surgery Fellowship through the American Head and Neck Society or equivalent.

- Reconstruction expertise is required for the surgical management of patients with head and neck tumours and necessitates a fellowship-trained microvascular surgeon with specific training in head and neck reconstruction.

(Source: HNMWG, Consensus 88%, Round 1)*

Medical Oncologist

Recommendation

- 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.

(Source: HNMWG, Consensus 88%, Round 1)*

Radiation Oncologist

Recommendation

- 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.

(Source: HNMWG, Consensus 88%, Round 1)*

Dentist

Recommendation

- Has completed a university-based degree in dentistry and fulfilled the requirements of the Royal College of Dental Surgeons of Ontario (RCDSO).

(Source: HNMWG, Consensus 88%, Round 1)*

Pathologist

Recommendation

- 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.

(Source: HNMWG, Consensus 85%, Round 1)*

Registered Nurses and Advanced Practice Nurses

Recommendation[†]

- All entry-to-practice nurses shall have a bachelors 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).

(Source: HNMWG, Consensus 71%, Round 2)*

Generalized and Specialized Oncology Nurse

Recommendation

- 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, 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 (CANO Standards & Competencies, 2006). 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 to both inpatient and outpatient/ambulatory care settings
- In ambulatory care, a Primary RN or Case Management 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.

(Source: HNMWG, Consensus 92%, Round 1)*

Advanced Practice Oncology Nurse (*Clinical Nurse Specialist and/or Nurse Practitioner*)

Recommendation

- Has a masters degree in nursing, with knowledge and expertise in an area of cancer nursing. There is a greater breadth and depth of knowledge compared to the specialized oncology nurse. The advanced practice nurse (APN) functions in the domains of direct clinical care, education, research, organizational leadership, and professional development. The APN should have prior oncology experience and expertise but may require role mentoring to develop specific oncology expertise.

(Source: HNMWG, Consensus 83%, Round 1)*

Medical Imaging Physician

Recommendation

- 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.

(Source: HNMWG, Consensus 88%, Round 1)*

Speech-Language Pathologist

Recommendation

- Has a masters 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 larygectomized patients, the speech pathologist should be approved

for delegated controlled acts and have specialized training in tracheoesophageal puncture (TEP).

(Source: HNMWG*, Consensus 92%, Round 1)

Registered Dietitian

Recommendation

- Has a bachelor's degree accredited by the Dietitians of Canada (DC) and successful completion of a dietetic internship program accredited by the DC. Registration with the College of Dietitians of Ontario and a DC member. Hospital or patient care experience and/or oncology expertise is recommended.
- Experience and training in enteral and parenteral nutrition support is valuable.

(Source: HNMWG*, Consensus 89%, Round 1)

Social Worker

Recommendation

- Has a Masters 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. Ideally, social workers should have experience providing teaching, coaching, and psychosocial-spiritual support and counselling across the continuum with patients and families.
- Affiliation and membership with professional oncology social work organizations such as the Canadian Association of Social Workers (CASW) are recommended.

(Source: HNMWG*, Consensus 83%, Round 2)

2. Primary Care Physician

Recommendation[†]

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

(Source: HNMWG*, Consensus 72%, Round 2)

IV. VOLUMES

1. Cancer Centre Volumes

Recommendation

- 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 might include virtual Multidisciplinary Case Conferencing options, joint care planning with regional care delivery models.

(Source: HNMWG*, Consensus 89%, Round 2)

Recommendation[†]

- The development of small-volume, non-multidisciplinary treatment programs for patients with head and neck cancer should be strongly discouraged.

(Source: HNMWG*, Consensus 68%, Round 2)

2. Practitioner Specific Volumes

Recommendation[†]

- Although there are no data in Ontario or elsewhere to directly inform minimum volume thresholds for surgeons, medical oncologists, and radiation oncologists, to ensure high-quality care, the HNMWG endorses the volumes recommended by NICE (2). 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, and social workers. While more research and outcome evaluations are required, the opinion of the HNMWG is that the following volumes are reasonable goals in Ontario:

Core team members and recommendations.

| Core Team Member | <i>Recommendations for minimum volumes required</i> |
|--|---|
| Surgery/ Oncology | Assess 50 new patients and major surgery* on 40 patients per year (Source: HNMWG* and NICE) |
| Surgery/Reconstructive | 20 microsurgery cases annually (Source: HNMWG*) |
| Medical Oncologist | 1.0 FTE per 200 head and neck cancer patients seen in consultation and a minimum of 25 patients treated annually (Source: NICE) |
| Radiation Oncologist | 1.0 FTE per 150 head and neck cancer patients seen in consultation and a minimum of 50 patients treated annually (Source: NICE) |
| <i>The volume recommendations for the above practitioners were put forward as a single recommendation. The level of consensus was 59%, achieved in Round 2.</i> | |
| Specialized Oncology Nurse | 1.0 FTE per 100 patients seen in consultation per year (Source: HNMWG*) |
| Advanced Practice Nurse | 1.0 FTE per H&N site group (especially with larger site groups seeing > 200 patients in consultation per year OR shared across another site group) (Source: HNMWG*) |
| <i>The volume recommendations for the above practitioners were put forward as a single recommendation. The level of consensus was 60%, achieved in Round 2.</i> | |
| Speech Language Pathologist | 1.0 FTE per 150 patients seen in consultation per year (Source: HNMWG*) |
| Registered Dietitian | 1.0 FTE per 150 patients seen in consultation per year (Source: HNMWG*) |
| Social Worker | 1.0 FTE per 150 patients seen in consultation per year (Source: HNMWG*) |
| <i>The volume recommendations for the above practitioners were put forward as a single recommendation. The level of consensus was 56%, achieved in Round 2.</i> | |
| <p>NOTES: FTE: full-time equivalent; HNMWG: Head and Neck Management Working Group; NICE: National Institute for Health and clinical Excellence. Major is defined as: 1) Neck dissection or equivalent complexity; 2) Composite dissection or equivalent complexity; or 3) Laryngectomy or equivalent complexity.</p> | |

V. Unique Infrastructure Requirements*

| Team Member | <i>Recommendations for infrastructure requirements</i> |
|--|--|
| Surgical Oncologist | Infrastructure for microvascular, laser and minimally invasive surgery Perioperative monitoring (Level III or greater) Specialized surgical nursing (head and neck) Clinic equipment - nasopharyngoscopy and image capture <i>(Source: NICE, Consensus 82%, Round 1)</i> |
| Medical Oncologist | Ambulatory chemotherapy unit and oncology pharmacy support Access to inpatient services including ability to administer chemotherapy <i>(Source: NICE, Consensus 83%, Round 1)</i> |
| Radiation Oncologist | Radiation Treatment Facility including the following: <ul style="list-style-type: none"> - linear accelerator based external beam radiation treatment with multileaf collimation and IMRT capability - portal or CT based on board treatment verification - CT simulation (with IV contrast available) and custom immobilization capabilities - IMRT-capable treatment planning system - medical dosimetry and physics support for plan development and quality assurance - resources for staff and infrastructure: for requirements, refer to the PEBC/CCO IMRT organizational standards document (15) <i>(Source: NICE and IMRT, Consensus 75%, Round 2)</i> |
| Registered Nurses and Advanced Practice Nurses | Access to interventional radiology for insertion of PEG tubes Feeding pumps for inpatient and ambulatory settings <i>(Source: NICE, Consensus 83%, Round 2)</i> |
| Speech Language Pathologist | 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 <i>(Source: NICE, Consensus 92%, Round 2)</i> |
| Registered Dietitian | Access to interventional radiology for insertion of PEG tubes Feeding pumps for inpatient and ambulatory settings Access to endoscopy suite or interventional radiology for G-tube placement <i>(Source: NICE, Consensus 82%, Round 1)</i> |
| NOTES: CCO: Cancer Care Ontario; CT: computerized tomography; IMRT: intensity-modulated radiation therapy; IV: intravenous; NICE: National Institute for Health and Clinical Excellence; PEBC: Program in Evidence-based Care; PEG: percutaneous endoscopic gastroscopy. * Please 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. | |

B. CLINICAL PRACTICE RECOMMENDATIONS

SIGN (3) developed the following recommendations through a systematic review and evaluation of the evidence. The quality of evidence was graded, as was the strength of the evidence (but not its clinical importance), for the recommendations.

The following recommendations were all either adapted from *SIGN 90; Diagnosis and Management of Head and Neck Cancer. A National Clinical Guideline* (3), other practice guidelines identified in an updated search (4-14) (see Section 2 for a list of these documents), or the clinical expertise of the HNMWG. Modifications were made to ensure the document would be pertinent to the Ontario healthcare setting.

I. Pre-Treatment: Diagnosis and Assessment

1. Referral and Diagnosis

| | RECOMMENDATIONS |
|-----------------------------------|---|
| Referral | |
| | Rapid access or “one-stop” clinics should be available for patients who fulfill appropriate referral criteria. For further detail, refer to PEBC Diagnostic Assessment standard of care document (4). (Source: SIGN and DAP, Consensus 93%, Round 2) |
| | Patients should be seen by an experienced clinician with access to the necessary diagnostic tools, within two weeks of urgent referral. (Source: SIGN*, Consensus 88%, Round 1) |
| | Primary care physicians and dental practitioners should be aware of symptoms and physical findings suggestive of head and neck cancer. (Source: SIGN*, Consensus 100%, Round 1) |
| Diagnosis and Staging | |
| Investigating neck masses | † Fine needle aspiration cytology should be used in the investigation of head and neck masses. (Source: SIGN, Consensus 68%, Round 2) |
| Endoscopy | All patients with head and neck cancer should have direct pharyngolaryngoscopy and chest imaging with symptom-directed endoscopy where indicated. (Source: SIGN, Consensus 82%, Round 1) |
| Imaging the primary tumour | CT or MRI of the primary tumour site should be performed to help define the T category of the tumour. (Source: SIGN, Consensus 93%, Round 1) |
| | † MRI should be used to stage oropharyngeal and oral tumours. (Source: SIGN, Consensus 67%, Round 2) |
| | † MRI should be used in assessing tumour involvement of the skull base, orbit, cervical spine, or neurovascular structures (most suprahyoid tumours). (Source: SIGN, Consensus 71%, Round 2) |
| Imaging neck | CT or MRI from skull-base to sternoclavicular joints should be performed in all patients at the time of imaging the primary tumour to stage the neck |

| | |
|---|--|
| Nodes | for nodal metastatic disease. (Source: SIGN, Consensus 79%, Round 2) |
| | Where the nodal staging on CT and MRI is equivocal, ultrasound guided fine needle aspiration and/or FDG-PET may increase the accuracy of nodal staging. (Source: SIGN, Consensus 75%, Round 2) |
| Imaging of thorax for distant metastases and synchronous tumours | All patients with stage II or greater disease should undergo CT of the thorax. (Source: SIGN, Consensus 83%, Round 2) |
| Metastatic cervical lymph nodes with unknown primary | † In patients presenting with cervical lymph node metastases, where physical exam, examination under anaesthetic and CT or MRI does not demonstrate an obvious primary tumour, FDG-PET should be performed as the next investigation of choice. (Source: SIGN, Consensus 71%, Round 2) |

NOTES: CT: computerized tomography; DAP: Diagnostic Assessment Program; FDG-PET: [18F]-2-fluoro-deoxy-D-glucose-positron emission tomography; MRI: magnetic resonance imaging; PEBC: Program in Evidence-based Care; SIGN: Scottish Intercollegiate Guidelines Network.

2. Histopathological Reporting

| | RECOMMENDATIONS |
|---------------------------------|---|
| | Pathologists are advised to use the CAP-CCO standards for reporting head and neck malignancies (5). (Source: CAP-CCO*, Consensus 86%, Round 2) |
| Nodal Metastatic Disease | The reporting of nodal dissections should include a description of the levels and structures included in the specimen, including number of involved and uninvolved nodes, level of these nodes, and the presence and location of extracapsular spread of tumour. (Source: SIGN and HNMWG*, Consensus 83%, Round 1) |
| Primary Site | Histopathology reporting of specimens from the primary site of head and neck cancer should include: <ul style="list-style-type: none"> - tumour site, tumour grade, maximum tumour dimension, maximum depth of invasion, margin involvement by invasive and/or severe dysplasia and margin dimensions, pattern of infiltration, and perineural involvement, - tumour type, and (Source: SIGN, Consensus 88%, Round 1) - lymphatic/vascular permeation. (Source: SIGN*, Consensus 75%, Round 1) |

NOTES: CAP-CCO: College of American Pathologists-Cancer Care Ontario; HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

II. During Assessment and Treatment

1. Patient Support

Patients should have the following support in place during the full continuum of care: oncology nursing personnel, a speech-language pathologist (SLP), a registered dietitian, and a social worker.

| | RECOMMENDATIONS |
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| Dysphagia | Head and neck cancer patients with dysphagia should receive appropriate speech and language therapy to optimize residual swallow function and reduce aspiration risk. <i>(Source: SIGN, Consensus 95%, Round 1)</i> |
| | All patients with oral, oropharyngeal, hypopharyngeal, and laryngeal cancer should have access to instrumental investigation for dysphagia. <i>(Source: SIGN and HNMWG*)</i> |
| | Modified barium swallow and fiberoptic endoscopic evaluation of swallow are both valid methods for assessing dysphagia. <i>(Source: HNMWG*)</i> The SLP should consider which is the most appropriate for different patients in different settings. <i>(Source: HNMWG*, Consensus 91%, Round 1)</i> |
| Communication | All patients undergoing chemoradiation should have access to an SLP therapist before, during, and after treatment. <i>(Source: SIGN, Consensus 80%, Round 1)</i> |
| | Where communication problems are likely to occur, patients should be seen by an SLP soon after diagnosis and before treatment commences. <i>(Source: SIGN, Consensus 85%, Round 1)</i> |
| | Patients undergoing laryngectomy should have a speech language pathologist to restore voice either by a tracheoesophageal voice prosthesis, esophageal speech, or electrolarynx. <i>(Source: SIGN, Consensus 87%, Round 1)</i> |
| Nutritional Support | All head and neck cancer patients should be screened at diagnosis for nutritional status using a validated screening tool appropriate to the patient population (BMI, nutrient intake, weight history). <i>(Source: SIGN*, Consensus 82%, Round 1)</i> |
| | After screening, at-risk patients should receive early intervention for nutritional support by an experienced dietitian, including considerations of nutritional supplements and pharmacological interventions. <i>(Source: SIGN, Consensus 90%, Round 1)</i> |
| | The multidisciplinary team should include healthcare professionals skilled in feeding tube placement (percutaneous gastrostomy, gastrojejunostomy, nasogastric). <i>(Source: SIGN, Consensus 82%, Round 1)</i> |
| | Feeding tube insertion should be considered for individuals initially presenting with one or more of the following: significant weight loss |

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| | (greater than 5% in one month or greater than 10% in 6 months), BMI < 18.5, dysphagia, anorexia, dehydration, pain, or any other symptoms that interfere with the ability to eat. (Source: HNMWG*, Consensus 96%, Round 2) |
| Smoking Cessation | <p>Patients should be provided with information about, and assistance with access to, drug therapy and counselling to stop smoking prior to and during treatment.</p> <p>If no centre-based smoking cessation program exists, patients should be referred to their primary care physician. (Source: HNMWG*, Consensus 93%, Round 1)</p> |
| Support Requirements | Patients should be assessed for psychosocial needs. (see PEBC Provider-Patient Communications document (6)). (Source: PPC*, Consensus 90%, Round 1) |
| | Patients should be offered information about support groups. (Source: SIGN*, Consensus 88%, Round 1) |
| Information Needs | Leaflets about risk factors, prevention, and early detection of head and neck cancer should be available in primary care facilities. (Source: SIGN, Consensus 95%, Round 1) |
| | Patients should be given information about their diagnosis and treatment on more than one occasion prior to the onset of treatment. Information should be individualized. (see PEBC Provider-Patient Communications document (6)). (Source: SIGN and PPC*, Consensus 83%, Round 1) |

NOTES: BMI: body mass index; HNMWG: Head and Neck Management Working Group; PPC: Provider-Patient Communications document; SIGN: Scottish Intercollegiate Guidelines Network.

III. Treatment

i. Modality Specific

1. Overview of Treatment of the Primary Tumour and Neck

| | RECOMMENDATIONS |
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| First Line Treatment | Patients with head and neck cancer, especially those planned for resection of oral cancers or whose mandible and/or major salivary glands are to be included in a radiotherapy field, should have the opportunity for a pre-treatment assessment by a dental oncologist (see Core Team for definition). (Source: SIGN, Consensus 91%, Round 1) |
| | The treatment approach should be formulated by a multidisciplinary team in consultation with the patient. (Source: SIGN*, Consensus 98%, Round 1) |
| | Individual patient and tumour characteristics, as well as, patient preference should guide management of head and neck cancer. (Source: SIGN*, Consensus 95%, Round 1) |

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| Treatment of the Primary Tumour | <p>All options for definitive locoregional treatment including radiation therapy, chemotherapy, and surgery should be discussed with the patient.</p> <p>If an organ preservation (radiotherapy with or without chemotherapy) approach is to be utilized, follow-up and salvage surgery must be available.</p> <p>Following surgical resection, postoperative adjuvant radiotherapy with or without chemotherapy should be considered where indicated.</p> <p><i>(Source: HNMWG*, Consensus 91%, Round 1)</i></p> |
| Treatment of the N0 Neck | <p>Patients with a clinically N0 neck, with more than 20% risk of occult nodal metastases, should be offered prophylactic treatment of the neck, by appropriate selective or modified radical neck dissection or external beam radiotherapy. <i>(Source: SIGN, Consensus 80%, Round 2)</i></p> |

NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

2. Radiotherapy as the Major First-line Treatment Modality

| | RECOMMENDATIONS |
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| Conventional Fractionation | <p>† Overall treatment time from surgery to completion of post-operative radiotherapy should be 10 to 11 weeks or less in the absence of postoperative medical or surgical complications. <i>(Source: SIGN, Consensus 67%, Round 2)</i></p> |
| Altered Fractionation | <p>† Where radiotherapy is the primary treatment modality for advanced disease, moderately accelerated schedules (six fractions/week) or hyperfractionated schedules with increased total dose can be considered as an alternative approach for patients with head and neck cancer who are unable to receive or decline concurrent chemotherapy or other systemic therapies.</p> <p>Altered fractionation regimens should be individualized for patients over the age of 70 (7). <i>(Source: SIGN and Bourhis, Consensus 73%, Round 2)</i></p> <p>If altered fractionation is being considered there must be:</p> <ul style="list-style-type: none"> - adequate monitoring and support for acute toxicity during and after treatment. - access to outpatient and inpatient services for treatment of acute toxicity and nutritional support. <p><i>(Source: SIGN*, Consensus 81%, Round 1)</i></p> |
| Radiotherapy Planning | <p>Planning CT data should be downloaded into a treatment planning system and relevant targets and normal tissues should be contoured on the planning CT scan.</p> <p>Volumetric radiation planning should be performed so as to achieve uniformity in prescribed dose to the specified targets (PTVs) with minimal dose to organs at risk (PRVs and OARs).</p> |

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| | <p>Specific predefined standards should be adhered to in terms of mean, median, maximum, and minimum dose acceptable to both targets and organs at risk.</p> <p>All radiation plans generated should undergo quality assurance review by the Radiation Oncologist and Medical Physicist prior to implementation.</p> <p>The following should be contoured on the planning CT data set:</p> <ul style="list-style-type: none"> - Gross Tumour Volume (GTV) for both the primary site and nodes determined to be involved or at high risk of involvement with grossly visible disease - the precise location of these gross objects is to be contoured with reference to the appropriate history, physical exam, diagnostic imaging, and examination under anaesthetic and pathology reports. - Clinical Target Volumes (CTV) which will represent expansions of the GTV (primary site and nodes) to account for microscopic disease extension from these regions as well as neck nodal regions thought to be at risk of harbouring microscopic nodal metastasis. - Organs at risk (OARs) that are anticipated to receive any radiation either in or close to the treated volumes should be contoured. These could include: spinal cord, brainstem, eyes, optic nerves, optic chiasm, inner ear, major salivary glands, mandible, mucosa not contained within CTVs. - Planning target volumes (PTV) will represent expansions of all CTVs for the purposes of dose calculation and assessment to take into account the uncertainty in patient positioning for treatment each day. - Planning Risk Volumes (PRV) will represent expansions of the following OR's: spinal cord, brainstem, optic nerves and optic chiasm for the purposes of dose calculation and assessment to take into account the uncertainty in patient positioning for treatment each day. <p><i>(Source: HNMWG*, Consensus 80%, Round 2)</i></p> |
| <p>Commencement and interruptions of planned radiotherapy treatment schedules</p> | <p>The time between decision to treat with radiation as the primary modality and the commencement of treatment should be no longer than two weeks.</p> <p>Overall treatment time from surgery to completion of post-operative radiotherapy should be 10-11 weeks or less in the absence of postoperative medical or surgical complications.</p> <p>Interrupting and prolonging a course of radical radiotherapy should be avoided.</p> <p>When radiation is the primary treatment modality interruptions should be compensated for by using either a bid treatment or a weekend fraction delivered on the week before or after the interruption.</p> <p><i>(Source: SIGN and HNMWG*, Consensus 80%, Round 2)</i></p> |
| <p>Brachytherapy</p> | <p>Patients with small accessible (T1/2) tumours of the oral cavity may be</p> |

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| | <p>treated by interstitial brachytherapy to a dose of 65-70Gy preferably by low dose rate or pulsed dose rate brachytherapy. Selected small volume oropharyngeal tumours may receive a brachytherapy boost following external beam radiation therapy.</p> <p>Interstitial brachytherapy for patients with head and neck cancer should be performed by an experienced team in centres with an appropriate infrastructure.</p> <p>(Source: SIGN and HNMWG*, Consensus 89%, Round 2)</p> |
| Intensity Modulated Radiotherapy (IMRT) | <p>For most cases of head and neck cancer, which require significant volumes of tissue to be irradiated to high dose in close proximity to multiple organs at risk, radiation delivery with IMRT is the treatment of choice given superior dose conformality and avoidance. (Source: HNMWG*, Consensus 75%, Round 2)</p> |
| | <p>In order to treat head and neck cancer with IMRT, centres should implement and deliver IMRT according to the organizational standards developed by CCO (15).</p> <p>Centres unable to implement these standards should consider referring patients requiring curative treatment to those that do.</p> <p>(Source: IMRT and HNMWG*, Consensus 87%, Round 2)</p> |

NOTES: CT: computerized tomography; HNMWG: Head and Neck Management Working Group; IMRT: intensity-modulated radiation therapy; SIGN: Scottish Intercollegiate Guidelines Network.

3. Prevention and Management of Radiation Side Effects

| | RECOMMENDATIONS |
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| Examination and Assessment | <p>Patients undergoing a course of radiation therapy for head and neck cancer should be examined weekly (as a minimum) by the treating radiation oncologist for the purposes of assessing toxicity and response to treatment. (Source: HNMWG*, Consensus 85%, Round 1)</p> |
| Prevention and treatment of radiation-induced mucositis | <p>† Health care practitioners should treat patients in accordance with the MASCC guidelines (8). (Source: MASCC and HNMWG*, Consensus 72%, Round 1ⁿ)</p> |
| | <p>Patients with oral cavity, laryngeal, oropharyngeal or hypopharyngeal tumours who are being treated with radiotherapy should be offered oral rinses including local topical anaesthetics before, during, and up to three weeks after completion of radiotherapy. (Source: SIGN)</p> <p>Patients should be advised on how to maintain good oral hygiene during and after radiotherapy.</p> <p>Patient mucosa should be inspected regularly during treatment, and analgesia (9) and antimicrobial/antifungal agents to treat infection should be made available.</p> <p>(Source: SIGN, HNMWG* and CCO-PEBC, Consensus 92%, Round 1)</p> |

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| Prevention and treatment of radiation-induced xerostomia | † When possible, radiation doses to the major salivary glands should be kept as low as reasonably achievable without compromising dose to the PTVs. Limiting parotid doses <26 Gy (mean) and <30 Gy (median) have been shown to result in improvement in subsequent parotid function. Pharmacological therapy should be considered to improve or reduce radiation-induced xerostomia. (Source: HNMWG*, Consensus 73%, Round 2) |
| | Patients with chronic xerostomia following radiotherapy should be encouraged to maintain good oral hygiene. They should have regular dental assessment with access to a dental oncologist where necessary. (Source: SIGN*, Consensus 89%, Round 1) |

NOTES: CCO: Cancer Care Ontario; PEBC: Program in Evidence-based Care; HNMWG: Head and Neck Management Working Group; MASSC: Multinational Association for Supportive Care in Cancer; SIGN: Scottish Intercollegiate Guidelines Network.

4. Surgery as the major first-line treatment modality

| | RECOMMENDATIONS |
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| Resection | † If an inadequate initial excision biopsy has been performed or if the tumour has been excised with positive excision margins, re-resection should be considered where technically feasible. (Source: SIGN, Consensus 71%, Round 2) |
| | If re-resection is not possible, postoperative radiotherapy should be considered. (Source: SIGN*, Consensus 79%, Round 1) |
| Reconstruction | <p>Surgical reconstruction should be available for patients undergoing extensive surgical resection for head and neck cancer.</p> <p>Reconstruction should be performed by appropriately trained and experienced surgical teams (who should be familiar with a variety of reconstruction techniques).</p> <p>Choice of reconstruction technique should be made on an individual basis for each patient according to the anatomical location of the tumour, the general condition of the patient, and patient and surgeon preference. (Source: SIGN*, Consensus 100%, Round 1)</p> |
| Adjuvant radiotherapy following surgery | <p>Postoperative radiotherapy should be considered following surgical resection of oral cavity, oropharyngeal, laryngeal, and hypopharyngeal cancers for patients with any of the following adverse risk features:</p> <ul style="list-style-type: none"> - advanced T-stage - close or positive surgical margins - perineural invasion - lymphovascular invasion: 2 or greater nodes positive - positive nodes at level IV or V - N2 or greater nodal involvement |

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| | <p>- extracapsular lymph node spread (Source: SIGN, Consensus 83%, Round 1)</p> |
| | <p>Postoperative radiotherapy should be conventionally fractionated:</p> <ul style="list-style-type: none"> • 54-60 Gy in 27-30 fractions over 5.5-6 weeks to the primary site and nodes at risk • 66 Gy in 33 fractions over 6.5 weeks to areas of very high risk <p>(Source: SIGN, Consensus 83%, Round 2)</p> |
| | <p>In patients with extracapsular spread and/or positive surgical margins, who are medically fit, postoperative concurrent chemoradiotherapy with single-agent cisplatin and conventionally fractionated radiotherapy should be considered. (Source: SIGN, Consensus 82%, Round 1)</p> |
| | <p>In patients who are not fit for chemotherapy, conventionally fractionated radiotherapy alone may be used. (Source: SIGN*, Consensus 85%, Round 2)</p> |
| | <p>The decision to undertake a course of postoperative radiotherapy or chemoradiotherapy should be made in consultation with the patient and multidisciplinary team. (Source: SIGN*, Consensus 95%, Round 1)</p> |
| Chemotherapy in Combination with Surgery | <p>† There is little evidence to support the routine use of neoadjuvant or adjuvant chemotherapy in combination with surgery in laryngeal, oral cavity, oropharyngeal, or hypopharyngeal cancer. (Source: SIGN and HNMWG*, Consensus 69%, Round 2)</p> |

NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

5. Chemotherapy in Combination with Surgery or Radiotherapy as First-line Treatment

| | RECOMMENDATIONS |
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| Chemotherapy Alone | <p>No evidence was identified to support the use of chemotherapy alone as a curative treatment for squamous cell carcinoma of the head and neck. (Source: HNMWG*, Consensus 75%, Round 2)</p> |
| Chemotherapy with locoregional therapy | <p>In patients with locally advanced non-metastatic squamous carcinoma of the oral cavity, oropharynx, larynx, and hypopharynx, who are medically fit for chemotherapy, (especially those aged 70 or under), concurrent chemotherapy should be considered rather than radiotherapy alone if:</p> <ul style="list-style-type: none"> - organ preservation is the goal. - the primary tumour is unresectable or considered surgically incurable. <p>(Source: SIGN, Consensus 75%, Round 2)</p> |
| | <p>† Single-agent cisplatin is recommended as the chemotherapeutic agent of choice in concurrent chemoradiotherapy. (Source: SIGN, Consensus 73%, Round 1ⁿ)</p> |
| | <p>Concurrent chemoradiotherapy should only be administered where</p> |

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| | <p>there are appropriate facilities for monitoring toxicity, with rapid access to appropriate outpatient and inpatient support for the treatment of acute radiotherapy and chemotherapy toxicity (10, 11). (Source: Vermorken NEJM, Posner NEJM Consensus 97%, Round 1)</p> <p>† If neoadjuvant chemotherapy is used, docetaxel/cisplatin/5-fluorouracil (5FU) (TPF) appears to provide higher response and survival rates with similar safety to cisplatin plus 5FU and should be considered (10, 11). (Source: Vermorken NEJM, Posner NEJM, Consensus 46%, Round 2)</p> |
| Adjuvant Chemotherapy | The routine use of adjuvant chemotherapy following either surgery or radiotherapy is not recommended. (Source: SIGN, Consensus 85%, Round 2) |
| Support for treatment related toxicities | Nausea and vomiting: Patients receiving chemotherapy should be treated in accordance with standard antiemetic guidelines developed by ASCO (12). (Source: ASCO, Consensus 81%, Round 1) |
| | † Patients receiving high-dose cisplatin should be considered for Apreitant therapy. (Source: HNMWG*, Consensus 45%, Round 2) |
| | Febrile neutropenia should be managed in accordance with ASCO guidelines (13). (Source: ASCO, Consensus 78%, Round 2) |
| | Hearing Loss: Patients reporting hearing loss or persistent tinnitus after treatment should have audiology testing. (Source: HNMWG*, Consensus 83%, Round 1) |

NOTES: ASCO: American Society of Clinical Oncology; HNMWG: Head and Neck Management Working Group; NEJM: New England Journal of Medicine; SIGN: Scottish Intercollegiate Guidelines Network.

6. Management of Potentially Curable Locoregional Recurrence

| | RECOMMENDATIONS |
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| Management of locoregional recurrence | <p>Decisions regarding the appropriate management of a locoregional recurrence of head and neck cancer should be made on an individual basis taking into account:</p> <ul style="list-style-type: none"> - the stage of recurrent tumour and its potential resectability. - previous treatment. - likely treatment efficacy. - likely treatment-related morbidity and functional outcome and consequent effects on quality of life. - patient's general health. - patient's preference. <p>(Source: SIGN*, Consensus 94%, Round 1)</p> |
| | <p>Decisions regarding the management of locoregional recurrence of head and neck cancer should be made by the multidisciplinary team in consultation with the patient, following histological confirmation of recurrence and full restaging (clinical and radiological). (Source: SIGN*, Consensus 97%, Round 1)</p> |
| | <p>Patients and their relatives/carers should be carefully counselled about the likely outcome of surgical and radiotherapeutic salvage, with respect to survival, risk of treatment-related morbidity and mortality, and quality of life. (Source: SIGN*, Consensus 98%, Round 1)</p> |
| | <p>Early referral to palliative care services for symptom control should be considered. (Source: SIGN* Consensus 95%, Round 1)</p> |
| Salvage surgery after previous radiotherapy or surgery | <p>Salvage surgery should be considered in any patient with a resectable locoregional recurrence of oral cavity, oropharyngeal, laryngeal, or hypopharyngeal cancer following previous radiotherapy or surgery. (Source: SIGN, Consensus 83%, Round 2)</p> |
| | <p>Salvage surgery should only be performed by an experienced surgical team with adequate experience in reconstructive techniques, in centres with appropriate facilities for medical support and rehabilitation. (Source: SIGN*, Consensus 97%, Round 1)</p> |
| Radiotherapy and re-irradiation | <p>† External beam radiotherapy should be considered as potentially curative salvage treatment for patients with locoregional recurrent disease after previous surgery, particularly if the recurrence is unresectable, or resection would result in unacceptable loss of function or cosmesis. (Source: SIGN*, Consensus 72%, Round 1ⁿ)</p> |
| | <p>Selected patients who have unresectable locally recurrent disease following previous radiotherapy may be considered for potentially curative re-irradiation.</p> <p>Re-irradiation should be considered cautiously and performed in centres</p> |

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| | with adequate expertise. (Source: SIGN*, Consensus 88%, Round 2) |
| | † Patients with small accessible recurrences in a previously irradiated region may be considered for interstitial brachytherapy in centres with appropriate facilities and expertise. (Source: SIGN, Consensus 70%, Round 2) |
| | † As a general principle re-irradiation should be delivered to as limited a volume as possible with bid treatment schedules to limit fraction size. (Source: HNMWG*, Consensus 55%, Round 2) |

NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

7. Palliation of Incurable Disease

| | RECOMMENDATIONS |
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| Palliative Care | The care of patients with incurable head and neck cancer should be managed by the palliative care services in conjunction with the multidisciplinary team. (Source: SIGN*, Consensus 93%, Round 1) |
| | All modalities of therapy should be considered as options for the palliation of head and neck cancer. (Source: SIGN*, Consensus 89%, Round 1) |
| | Short term toxicity and length of hospital stay should be balanced against likely symptomatic relief. (Source: SIGN*, Consensus 86%, Round 1) |
| | A documented pathway of care should be discussed and agreed upon by the patient, relatives, caregivers, and primary care physician. (Source: SIGN*, Consensus 76%, Round 1) |
| Palliative Chemotherapy | Patients with adequate performance status may be considered for palliative chemotherapy which may improve symptoms by reducing tumour volume. (Source: SIGN, Consensus 88%, Round 1) |
| | † Methotrexate, cisplatin, or combinations such as cisplatin/5FU and cisplatin/paclitaxel may be considered as palliative treatment in patients with head and neck cancer. (Source: SIGN, Consensus 69%, Round 2) |
| | Excessive toxicity from chemotherapeutic combination regimens should be avoided. (Source: SIGN, Consensus 94%, Round 1) |
| Palliative Radiotherapy | Radiotherapy may be considered for palliative treatment in patients with locally advanced incurable head and neck cancer. (Source: SIGN, Consensus 87%, Round 1) |
| Palliative Surgery | Appropriate surgical procedures should be considered for palliation of particular symptoms, taking local expertise into consideration. (Source: SIGN*, Consensus 88%, Round 1) |

NOTES: SIGN: Scottish Intercollegiate Guidelines Network; HNMWG: Head and Neck Management Working Group.

ii. Site Specific

1. Laryngeal Cancer

| | RECOMMENDATIONS |
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| a. Early Laryngeal Cancer (Stage I and II) | |
| Early Glottic Cancer | At least one member of the surgical team should be trained and familiar with the technique of endoscopic resection. <i>(Source: SIGN*, Consensus 84%, Round 1)</i> |
| | Patients with early glottic cancer may be treated either by external beam radiotherapy or conservation surgery. <i>(Source: SIGN, Consensus 76%, Round 1)</i> |
| | Patients with T1 glottic cancer should never receive concurrent chemotherapy with radical radiotherapy treatment. <i>(Source: SIGN*, Consensus 100%, Round 2)</i> |
| | <i>When surgery is selected for patients with early glottic cancer, either endoscopic laser excision or partial laryngectomy may be used. (Source: SIGN, Consensus 87%, Round 2)</i> |
| | † Prophylactic treatment of the neck nodes is not usually required for patients with T1/T2 early glottic cancer. <i>(Source: SIGN, Consensus 73%, Round 2)</i> |
| Early Supraglottic Cancer | Patients with early supraglottic cancer may be treated by either external beam radiotherapy or conservation surgery. <i>(Source: SIGN, Consensus 77%, Round 2)</i> |
| | Radiotherapy for patients with early supraglottic cancer usually includes prophylactic bilateral treatment of levels II-III lymph nodes in the neck. <i>(Source: SIGN, Consensus 89%, Round 2)</i> |
| | † Endoscopic laser excisions or supraglottic laryngectomy with selective neck dissection to include levels II-III nodes may be considered for patients with early supraglottic cancer. <i>(Source: SIGN, Consensus 58%, Round 2)</i> |
| | <i>Bilateral neck dissection should be considered if the tumour is close to the midline (Source: SIGN, Consensus 80%, Round 2)</i> |
| b. Locally Advanced Laryngeal Cancer (Stage III and IV) | |
| Treatment Options | <p>Patients with locally advanced resectable laryngeal cancer can be treated by either:</p> <ul style="list-style-type: none"> - total laryngectomy with or without postoperative radiotherapy <p>OR</p> <ul style="list-style-type: none"> - initial organ preservation strategy with radiation and concurrent chemotherapy, reserving surgery for salvage. <p><i>(Source: SIGN, Consensus 76%, Round 1)</i></p> |

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| | The choice of approach will be dependent on the patient's desire for organ preservation and general performance status. (Source: SIGN*, Consensus 79%, Round 1) |
| Organ Preservation | Treatment for organ preservation or non-resectable disease should be concurrent chemoradiation with single-agent cisplatin. (Source: SIGN, Consensus 78%, Round 1) |
| | Standard radiotherapy (once daily) should only be used as a single modality when comorbidity precludes the use of concurrent chemotherapy or surgery. (Source: SIGN, Consensus 91%, Round 2) |
| | Where radiotherapy is being used as a single agent without concurrent chemotherapy, an altered fractionation schedule should be considered. (Source: SIGN, Consensus 80%, Round 2) |
| Total Laryngectomy | Patients with bulky T4 tumours extending through cartilage into soft tissue whose voices are unlikely to be spared with an organ preservation approach might best be treated by total laryngectomy with postoperative radiotherapy. (Source: SIGN*, Consensus 80%, Round 1) |
| N0 disease | † In patients with clinically N0 disease, nodal level II-IV should be treated prophylactically by either surgery or radiation depending on the primary treatment approach selected. (Source: SIGN, Consensus 73%, Round 2) |
| Nodal disease | Patients with clinically node positive neck are managed based on the planned primary treatment, if an organ preservation approach is selected as the primary treatment, neck dissection is considered in patients with clinical or radiologic evidence of residual disease and control of the primary site. |
| | The role of planned neck dissection for N2 and N3 disease remains controversial. If surgery is the primary modality of therapy, comprehensive neck dissection with postoperative chemoradiotherapy or radiotherapy should be considered. (Source: SIGN and HNMWG*, Consensus 82%, Round 2) |

NOTES: SIGN: Scottish Intercollegiate Guidelines Network; HNMWG: Head and Neck Management Working Group.

2. Hypopharyngeal Cancer

| RECOMMENDATIONS | |
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| a. Early Hypopharyngeal Cancer (Stage I and II) | |
| Treatment Options | † Patients with early hypopharyngeal cancer may be treated by: <ul style="list-style-type: none"> - radical external beam radiotherapy with concomitant cisplatin chemotherapy and prophylactic irradiation of neck nodes (levels II-IV bilaterally). - conservative surgery and bilateral selective neck dissection (levels II-IV, where local expertise is available). |

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| | <ul style="list-style-type: none"> - radiotherapy alone, including altered fractionation regimes, in those patients who are not suitable for either concurrent chemoradiation or surgery due to comorbidity. <p>(Source: SIGN, Consensus 58%, Round 2)</p> |
| b. Locally Advanced Hypopharyngeal Cancer (Stage III and IV) | |
| Treatment Options | <p>Patients with locally advanced resectable hypopharyngeal cancer can be treated by either:</p> <ul style="list-style-type: none"> - surgical resection with postoperative radiotherapy <p>OR</p> <ul style="list-style-type: none"> - an organ preservation strategy with radiation and concurrent chemotherapy or altered fractionation radiation reserving surgery for salvage. <p>(Source: SIGN, Consensus 92%, Round 2)</p> |
| Surgical Resection | <p>Surgical resection is usually laryngopharyngectomy with appropriate reconstruction and should be performed in centres with adequate expertise in the surgical technique and postoperative rehabilitation. (Source: SIGN*, Consensus 84%, Round 1)</p> |
| | <p>Patients with resectable locally advanced disease should not be treated by standard radiotherapy (once daily) alone unless comorbidity precludes both surgery and concurrent chemotherapy. (Source: SIGN, Consensus 78%, Round 1)</p> |
| Organ Preservation | <p>† Patients with unresectable disease should be considered for external beam radiotherapy with concurrent cisplatin chemoradiotherapy. (Source: SIGN, Consensus 73%, Round 2)</p> |
| | <p>Where radiotherapy is being used as a single modality without concurrent chemotherapy, an altered fractionation schedule should be considered. (Source: SIGN, Consensus 82%, Round 2)</p> |
| N0 disease | <p>Patients with a clinically N0 neck should undergo prophylactic treatment of the neck, whether by selective neck dissection or radiotherapy, including nodal levels II-IV bilaterally (Source: SIGN, Consensus 78%, Round 2)</p> |
| Nodal Disease | <p>Patients with clinically node positive neck are managed based on the planned primary treatment, if an organ preservation approach is selected as the primary treatment, neck dissection is considered in patients with clinical or radiologic evidence of residual disease and control of the primary site.</p> |
| | <p>The role of planned neck dissection for N2 and N3 disease remains controversial.</p> |
| | <p>If surgery is the primary modality of therapy comprehensive neck dissection with postoperative chemoradiotherapy or radiotherapy should be considered. (Source: SIGN and HNMWG*, Consensus 80%, Round 2)</p> |
| Post-operative | <p>Postoperative adjuvant therapy should be based on criteria described in the</p> |

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| Adjuvant Therapy | SIGN Surgical section (see section #6 - adjuvant radiotherapy following surgery). (Source: SIGN, Consensus 75%, Round 1) |
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NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

3. Oropharyngeal Cancer

| | RECOMMENDATIONS |
|---|---|
| a. Early Oropharyngeal Cancer (Stage I and II) | |
| Primary Treatment | <p>Management of early oropharyngeal cancer should be individual for each patient.</p> <p>Decisions regarding the choice of primary treatment modality should be made in consultation with the patient and should take into account the anatomical location of the tumour and the functional results associated with the available treatments.</p> <p>(Source: SIGN*, Consensus 100%, Round 1)</p> |
| | <p>† Patients with early oropharyngeal cancer may be treated by:</p> <ul style="list-style-type: none"> - Primary resection, with reconstruction as appropriate, and neck dissection (selective neck dissection encompassing nodal levels II-IV) <p>OR</p> <ul style="list-style-type: none"> - External beam radiotherapy encompassing the primary tumour and neck nodes (levels II-IV). <p>(Source: SIGN, Consensus 64%, Round 2)</p> |
| Primary Radiotherapy | <p>† Patients may be treated by a combination of external beam radiotherapy and brachytherapy in centres with appropriate expertise.</p> <p>(Source: SIGN, Consensus 64%, Round 2)</p> |
| | <p>† In patients with early stage, well-lateralized tumours, prophylactic treatment of the ipsilateral neck only may be considered.</p> <p>(Source: SIGN, Consensus 70%, Round 2)</p> |
| | <p>Bilateral treatment of the neck is recommended when the incidence of occult disease in the contralateral neck is high (tumour is encroaching on base of tongue or soft palette). (Source: SIGN, Consensus 82%, Round 1)</p> |
| Postoperative Treatment | <p>Postoperative radiotherapy or concurrent chemoradiotherapy should be used based on the SIGN recommendations in “Treatment: surgery as the major treatment modality” (section #6). (Source: SIGN, Consensus 84%, Round 1)</p> |
| | <p>Administration of cisplatin chemotherapy concurrently with postoperative radiotherapy should be considered, particularly in patients with extracapsular spread and/or positive surgical margins.</p> <p>(Source: SIGN, Consensus 85%, Round 1)</p> |

| b. Locally Advanced Oropharyngeal Cancer (Stage III and IV) | |
|--|---|
| Primary Treatment | The decision regarding the choice of primary treatment in advanced oropharyngeal cancer should be made in consultation with the patient and based on an understanding of the functional outcome and quality of life associated with each treatment option. <i>(Source: SIGN*, Consensus 97%, Round 1)</i> |
| | † Patients with advanced oropharyngeal cancer may be treated by primary surgery or an organ preservation approach. <i>(Source: SIGN, Consensus 64%, Round 2)</i> |
| Primary Surgery | Resection of the primary tumour should be followed by reconstruction as necessary. <i>(Source: SIGN*, Consensus 81%, Round 1)</i> |
| | Patients treated by primary surgery who have a clinically node positive neck should have a comprehensive neck dissection. <i>(Source: SIGN, Consensus 83%, Round 1)</i> |
| | Ipsilateral neck dissection may be performed if the tumour is well lateralized. Prophylactic treatment of the contralateral neck should be considered, especially when tumours encroach on the midline. <i>(Source: SIGN*, Consensus 90%, Round 2)</i> |
| Organ Preservation Therapy | Radiotherapy should be administered with concurrent cisplatin chemotherapy. <i>(Source: SIGN, Consensus 78%, Round 1)</i> |
| | † The primary tumour and neck node levels (II-IV) should be treated bilaterally. <i>(Source: SIGN, Consensus 73%, Round 2)</i> |
| | Where radiotherapy is being used as a single modality without concurrent chemotherapy, a modified fractionation schedule should be considered. <i>(Source: SIGN, Consensus 82%, Round 2)</i> |
| | Patients with clinically node positive neck are managed based on the planned primary treatment. If an organ preservation approach is selected as the primary treatment, neck dissection is considered in patients with clinical or radiologic evidence of residual disease and control of the primary site. The role of planned neck dissection for N2 and N3 disease remains controversial. <i>(Source: SIGN and HNMWG*, Consensus 92%, Round 2)</i> |

NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

4. Oral Cavity Cancer

| | RECOMMENDATIONS |
|--|--|
| a. Early Oral Cavity Cancer (Stage I and II) | |
| Primary Treatment | <p>Management of early oral cavity tumours should be individualized for each patient.</p> <p>Decisions regarding the choice of primary treatment modality should be made in consultation with the patient and should take into account the anatomical location of the tumour and the functional results associated with the available treatments.</p> <p><i>(Source: SIGN*, Consensus 100%, Round 1)</i></p> |
| | <p>Patients with early oral cavity cancer may be treated by surgical resection. In situations where bone removal is required for clear margins, rim rather than segmental resection should be performed, where possible. <i>(Source: SIGN, Consensus 83%, Round 2)</i></p> |
| Brachytherapy | <p>† Where expertise is available, brachytherapy can be used alone (60 to 70 Gy) for T1 lesions or as a boost (20 to 40 Gy) for T2 tumours of the oral cavity (mobile tongue, floor of mouth, buccal mucosa).</p> <p><i>(Source: HNMWG*, Consensus 50%, Round 2)</i></p> |
| Re-resection | <p>Re-resection should be considered to achieve clear histological margins if the initial resection has positive surgical margins. <i>(Source: SIGN, Consensus 75%, Round 2)</i></p> |
| Reconstruction | <p>Reconstruction should be performed where necessary following surgical resection to achieve a good functional and cosmetic result. <i>(Source: SIGN*, Consensus 92%, Round 1)</i></p> |
| N0 disease | <p>The clinically N0 neck (levels I-III) should be treated prophylactically either by external beam radiotherapy or selective neck dissection for tumours involving the oral tongue or floor of mouth with depth of invasion > 4mm. <i>(Source: SIGN, Consensus 78%, Round 2)</i></p> |
| Postoperative Radiotherapy | <p>Postoperative radiotherapy should be considered for patients with clinical and pathological features that indicate a high risk of recurrence as per the SIGN Surgery Section (section #4). <i>(Source: SIGN, Consensus 79%, Round 1)</i></p> |
| b. Advanced Oral Cavity Cancer (Stage III and IV) | |
| Treatment Options | <p>Patients with resectable disease who are fit for surgery should have surgical resection with reconstruction. <i>(Source: SIGN, Consensus 89%, Round 1)</i></p> |
| | <p>The likelihood of obtaining adequate surgical margins with acceptable morbidity, functional outcome, and quality of life must be considered before undertaking surgical resection. <i>(Source: SIGN*, Consensus 97%, Round 1)</i></p> |

| | |
|----------------------------------|--|
| <p>Organ Preservation</p> | <p>† An organ preservation approach should be considered when the:</p> <ul style="list-style-type: none"> - tumour cannot be adequately resected. - patient's general condition precludes surgery. - patient does not wish to undergo surgical resection <p>(Source: SIGN, Consensus 69%, Round 1ⁿ)</p> |
| <p>Nodal Disease</p> | <p>Patients with node positive disease may be treated by selective or comprehensive neck dissection. Patients with high volume multi-level disease should be considered for more comprehensive dissection.</p> <p>Elective dissection of the contralateral neck should be considered if the primary tumour is locally advanced, arises from the midline, or if there are multiple ipsilateral nodes involved.</p> <p>(Source: SIGN and HNMWG*, Consensus 89%, Round 2)</p> <hr/> <p>Patients with clinically node positive neck are managed based on the planned primary treatment. If an organ preservation approach is selected as the primary treatment, neck dissection is considered in patients with clinical or radiologic evidence of residual disease and control of the primary site.</p> <p>The role of planned neck dissection for N2 and N3 disease remains controversial.</p> <p>(Source: SIGN and HNMWG*, Consensus 91%, Round 2)</p> |
| <p>Radiotherapy</p> | <p>When radiotherapy is being used as a single modality without concurrent chemotherapy, a modified fractionation schedule should be considered.</p> <p>(Source: SIGN, Consensus 82%, Round 2)</p> |

NOTES: HNMWG: Head and Neck Management Working Group; SIGN: Scottish Intercollegiate Guidelines Network.

5. Rare Tumours in Head and Neck Cancer

Recommendations

- It is recommended that patients with rare tumours or other uncommon histologies not addressed in this management document be referred to the Head and Neck Cancer Multidisciplinary team at a centre seeing at least 100 head and neck cases annually, to develop a treatment plan that may be executed in whole or in part closer to home in collaboration with the referring centre. These cancers would include nasopharyngeal carcinoma; rare cancers of the skin (e.g., Merkel cell carcinoma); sarcomas; skull based tumours, including esthesioneuroblastoma; malignant paranasal sinus tumours; and malignant tumours of the salivary glands.
- A CCO PEBC clinical practice guideline for the use of chemoradiotherapy in nasopharyngeal carcinoma recommends that cisplatin-based concurrent radiochemotherapy be routinely offered to patients with newly diagnosed locally advanced squamous cell or undifferentiated nasopharyngeal cancer (stage III or IV) (14).
(Source: HNMWG* and CCO-PEBC, Consensus 86%, Round 2)

IV. Post-Treatment

1. Follow-up, Rehabilitation and Patient Support

| | RECOMMENDATIONS |
|---------------------------------------|---|
| Frequency of Follow-up | Patients should be seen and examined by one or more core team members (every 3 months for year 1, every 4 months for year 2 and every 6 months in year 3). <i>(Source: SIGN, Consensus 79%, Round 1)</i> |
| | Assessment of the late complications of treatment is an important component of the follow-up of patients treated for head and neck cancer. <i>(Source: HNMWG*, Consensus 95%, Round 1)</i> |
| | † There is no evidence that follow up imaging improves locoregional control or survival. Follow-up imaging should be symptom directed and not part of routine screening. <i>(Source: HNMWG*, Consensus 59%, Round 2)</i> |
| | Every patient should have access to psychosocial support integrated into their care. Assessment of distress, anxiety, and coping should be included in routine assessments. <i>(Source: HNMWG*, Consensus 93%, Round 1)</i> |
| Oral and Dental Rehabilitation | Patients receiving oral surgery or radiotherapy to the mouth (with or without adjuvant chemotherapy) should have post-treatment dental rehabilitation. <i>(Source: SIGN, Consensus 97%, Round 1)</i> |
| | Patients should access lifelong dental follow up and dental rehabilitation. <i>(Source: SIGN, Consensus 92%, Round 1)</i> |
| | Dental extractions in irradiated jaws should be carried out in hospital by a dental oncologist or oral surgeon. <i>(Source: SIGN, Consensus 82%, Round 1)</i> |
| | Hyperbaric oxygen facilities should be available for selected patients. <i>(Source: SIGN, Consensus 77%, Round 1)</i> |

NOTES: SIGN: Scottish Intercollegiate Guidelines Network; HNMWG: Head and Neck Management Working Group.

RELATED GUIDELINES

PEBC Evidence-based Series reports:

- EBS 5-7: Chemotherapy with Radiotherapy for Nasopharyngeal Cancer: A Clinical Practice Guideline.
- EBS 19-1: Provider-Patient Communications.
- EBS 21-1: Organizational Standards for the Delivery of Intensity Modulated Radiation Therapy (IMRT) in Ontario.
- EBS Report: Organizational Standards for Diagnostic Assessment Programs.

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