Ontario Health
Cancer Care Ontario

COVID-19 Supplemental Clinical Guidance for Patients with Cancer

March 29, 2020

Contents

INTRODUCTION

Major planning directives related to the COVID-19 pandemic will be coordinated through Ontario Health, the Ministry of Health, and Ontario Public Health.

On March 10th, 2020, Ontario Health (Cancer Care Ontario) (OH-CCO) circulated the *Pandemic Planning Clinical Guideline for Patients with Cancer*, which provides recommendations for a systematic approach in determining priority for consultation and treatment of patients with cancer in Ontario during the time of a pandemic. It is intended to augment provincial, regional, and organizational pandemic planning by providing clinical guidance specific to cancer care.

This document is intended as additional guidance specific to clinical care during the COVID-19 pandemic. Further updates may be released as the COVID-19 pandemic evolves and clinical evidence develops. The information provided herein is supplemental to that provided in sections of the Pandemic Planning Clinical Guideline and does not replace it.

PART 1: CANCER SCREENING PROGRAMS

Ontario Cervical Screening Program

The following additions and clarifications are provided for the Ontario Cervical Screening Program:

- Patients with low grade cervical screening results (i.e.: ASCUS, LSIL) can be managed as priority C (patients already screened, with abnormal screening results (but not highly suspicious)) and have their follow up delayed; this includes both initial and follow up low grade pap test results.
- Patients with high grade cervical screening results (i.e.: ASC-H, HSIL, AGC, AIS) should be considered priority B (patients already screened, with abnormal screening result that is highly suspicious for cancer) and be seen for follow up.
- Patients who are undergoing care in colposcopy, which may include colposcopic procedures for diagnosis or treatment, should also be assessed to determine alignment with priority A, B, or C (refer to "Priority Classification" section of this document).

This guidance is aligned with the recommendations of the ASCCP[1].

Gastrointestinal Endoscopy Services

The recommendations provided below may be considered by all facilities offering endoscopy services.

Important considerations
Human-to-human transmission of COVID-19 occurs primarily via direct contact or through air droplets, with a higher risk of transmission within one meter from the infected person. The risk of exposure to COVID-19 and of subsequent infection may be substantial for endoscopy personnel, particularly during procedures requiring esophageal intubation, due the close proximity to patients during the procedure as well as the fact that patients often cough during this part of the procedure. It has been shown that there is significant exposure of the endoscopist's face to infectious organisms during endoscopy (1). Potential

1 https://www.asccp.org/covid-19

exposure may also occur during lower endoscopies, since COVID-19 viral particles have been isolated in human stools and colonic biopsy specimen, and infected individuals may present with diarrhea.

Prioritization of patients in endoscopy

Patients in endoscopy should be prioritized according to the classification outlined in the "Priority Classification" section of the *Pandemic Planning Clinical Guideline for Patients with Cancer* document. Routine colorectal cancer screening and post-polypectomy surveillance can be considered priority C and may be deferred during the pandemic. Patients with an abnormal fecal immunochemical test (FIT) result should be considered a priority B as an abnormal FIT result is considered to be highly suspicious for cancer.

Additional resources and guidance

OH-CCO is aware of two recent statements/publications that endoscopists may find helpful at this time:

- COVID 19: Advice from the Canadian Association of Gastroenterology for Endoscopy Facilities (2)
- Coronavirus (COVID-19) Outbreak: What the Department of Endoscopy Should Know; Gastrointestinal Endoscopy, March 2020 (3)

References

1. Johnson E, Habib-Bein N, Dueker J, Quiroz B, Corsaro E, Ambrogio R, et al. Risk of bacterial exposure to the endoscopist's face during endoscopy. Gastrointestinal Endoscopy. 2019;89(4).
2. Frances T, Borgaonkar M, Leontiadis G. COVID-19: Advice from the Canadian Association of Gastroenterology for Endoscopy Facilities, as of March 16, 2020. Accessed March 17, 2020: https://www.cag-acg.org/images/publications/CAG-Statement-COVID-&-Endoscopy.pdf
3. Repici A, Maselli R, Colombo M, Gabbiadini R, Spadaccini M, Anderloni A, Carrara S, Fugazza A, Di Leo M, Galtieri PA, Pellegatta G, Ferrara EC, Azzolini E, Lagioia M. Coronavirus (COVID-19) outbreak: what the department of endoscopy should know, Gastrointestinal Endoscopy (2020), doi: https://doi.org/10.1016/j.gie.2020.03.019

PART 2: PRIORITY B CANCER PATIENTS: FURTHER CONSIDERATIONS FOR PRIORITIZING PATIENTS IN NEED OF SYSTEMIC TREATMENT AND/OR RADIOTHERAPY, CANCER IMAGING AND CANCER SURGERY

The recommendations below consider the demand for cancer services for patients versus the availability of physical and human resources in a pandemic. Priority A patients are defined as those who are deemed critical (unstable, unbearable suffering, and/or whose condition is immediately life threatening) and for whom there is no other effective treatment. In this supplemental guidance document, Priority B patients will be discussed.

Priority B patients are those who require services/treatment (including supportive care, psychosocial care and toxicity management) in the cancer centres, hospitals or primary care settings but whose situation is deemed non-critical (no unbearable suffering, patient is stable and condition is not immediately life threatening).

There is a significant number of patients that fall within Priority B, and cancer programs have requested further guidance on the sub-priority levels within this category of patients (see Treatment Modality Specific Guidance, page 7). This clinical guidance is to support centres/clinicians in decision-making as they focus on providing essential services while taking into account the resources available to provide cancer treatment.

Considerations:

- Cancer patients and their providers should discuss starting or continuing treatment with the understanding that the potential to acquire a pandemic infection be considered a risk and therefore be weighed against the benefit therapy.
- Cancer patients and providers may have to make treatment decisions without any or all pathology information.
- There likely will be the need for ICU and/or step down care for post-operative management and treatment toxicities of some patients and these beds may be occupied by pandemic-related symptomatic patients.
- Wait lists will require regular review to determine priorities considering bed and resource availability. Individual patient priorities may change based on clinical circumstances.
- Multidisciplinary Case Conferences (MCC), which may be virtual, or other committees that may be established during the pandemic can be an important venue to prioritize care of complex patients and to continuously review policies in a rapidly changing context.

Individual patient factors that need to be considered:

- Age and comorbid illnesses
- Performance status
- The risk of acquiring and becoming critically ill from the pandemic infection (e.g. COVID -19)
- Patients that are initially lower priority may need to be accelerated to a higher priority if they have been delayed and are developing progression of disease or symptoms

Considerations to minimize patient contact to maximize workforce capacity:

- Consider alternative treatments that may be less resource intensive and/or safer for patients and/or health professionals
- Look for alternatives for education and monitoring of patients on treatment
- Reduce the time in the treatment facility by altering schedules and discouraging early arrival times (texting patients waiting in their car when you are ready to see them)

Decision making should be done locally through a team approach, in a coordinated manner. This could be through a multidisciplinary team or as necessary through a pandemic triage management committee. This approach will help support individual clinicians and remove the burden/guilt of difficult decision making. Decisions must be clearly communicated to patients. Teamwork will be essential and sharing team leadership across clinical directors will help to reduce the burden of decision making.

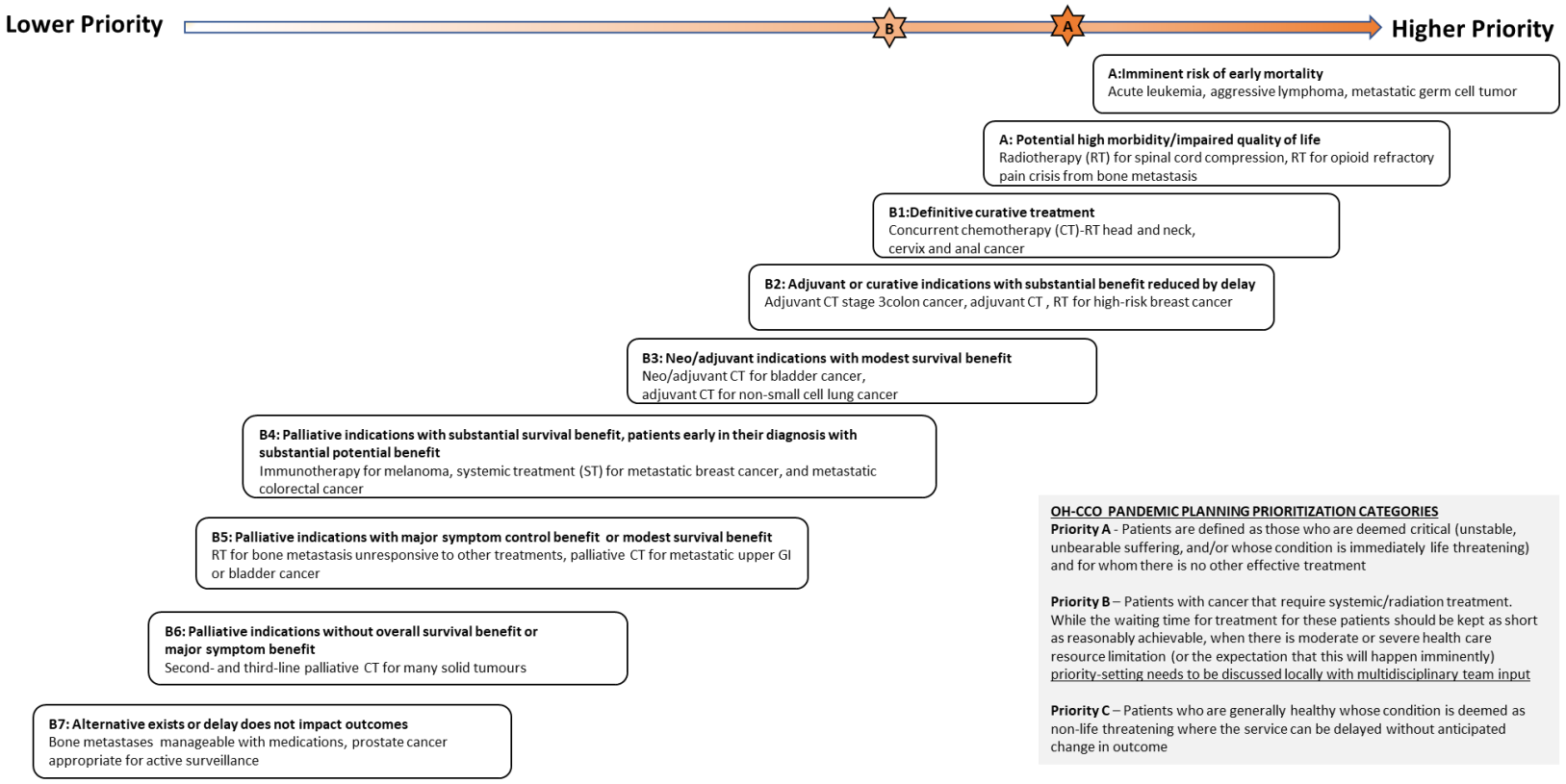
High Risk Procedures and Personal Protective Equipment (PPE):

In situations where procedures might also pose a high risk of contracting the virus to health care workers appropriate PPE is paramount. Therapeutic options that minimize risk to the health care team should always be considered.

Treatment Modality Specific Guidance

The Systemic and Radiation Treatment Programs have used the following Framework (from Hanna et al) to help prioritize treatment during a Pandemic.

CONCEPTUAL FRAMEWORK FOR PRIORITIZING SYSTEMIC & RADIATION TREATMENT DURING THE COVID-19 PANDEMIC*



OH-CCO PANDEMIC PLANNING PRIORITIZATION CATEGORIES

Priority A - Patients are defined as those who are deemed critical (unstable, unbearable suffering, and/or whose condition is immediately life threatening) and for whom there is no other effective treatment

Priority B – Patients with cancer that require systemic/radiation treatment. While the waiting time for treatment for these patients should be kept as short as reasonably achievable, when there is moderate or severe health care resource limitation (or the expectation that this will happen imminently) priority-setting needs to be discussed locally with multidisciplinary team input

Priority C – Patients who are generally healthy whose condition is deemed as non-life threatening where the service can be delayed without anticipated change in outcome

*adapted from Hanna et al, 2020

Systemic Treatment

This framework guides prioritization of therapies in the event of limited resources and does not consider patient specific situations. The decision to treat patients must consider individual patient factors and the risk of continuing therapy during the pandemic. This guidance was developed in collaboration with the provincial cancer Disease Site Clinical Leads.

DEFINITIONS FOR PRIORITIZATION CATEGORIES

A1	Imminent risk of early mortality
A2	Potential high morbidity/impaired quality of life
B1	Definitive curative treatments
B2	Adjuvant indication with substantial benefit reduced by delay
B3	Neo/adjuvant indication with modest survival benefit/curative intent therapy
B4	Palliative indication with substantial survival benefit
B5	Palliative indications with major symptom control or modest survival
B6	Palliative without overall survival benefit or major symptom control benefit
B7	An alternative exists or a delay does not impact outcome

DISEASE SITE: GYNE

A1	• Gestational Trophoblastic Neoplasia • Metastatic Germ Cell
A2	• 1st line ovarian cancer with symptomatic (ascites/pleural effusions)
B1	
B2	• Chemotherapy for early stage (1 & 2 high grade ovarian cancer) • Concurrent therapy for cervix –pelvic LN
B3	• Concurrent therapy for cervix–paraaortic LN • Ovarian cancer 1st line pre-surgery
B4	• Platinum sensitive relapsed ovarian cancer
B5	• 1st line Platinum resistant ovarian cancer • 1st line chemo for advanced/metastatic vulvar cancer • 1st metastatic/advanced/recurrent sarcoma
B6	• 2nd line endometrial/cervix/vulvar cancer • 2nd line platinum resistant ovarian cancer
B7	
Notes	• Defer treatment for platinum resistant cancer due to small benefit. • Defer bevacizumab in 1st line indications to platinum resistant treatments • Consider using IV instead of IP • Delay adjuvant therapies post-surgery by as many as 12 weeks

DISEASE SITE: BREAST

A1	
A2	• Locally advanced breast cancer (LABC) - inoperable
B1	• LABC- Stage 3 neoadjuvant
B2	• Triple negative breast cancer (TNBC) • HER2+ > or equal to 1cm • ER+/HER2- and node positive • ER+ with high oncotype
B3	• TNBC residual post neoadjuvant chemo • HER2+ <1cm • ER+/HER2- T1-T2, node negative, oncotype low or unknown
B4	Metastatic Breast Cancer (MBC): • HER 2+ 1st line and 2nd line • ER+/HER 2-: 1st line CDK 4/6 inhib & 2nd line endocrine
B5	• Zoledronic acid and denosumab treatment for less than 2 years or if skeletal-related event (SRE), otherwise consider holding
B6	• MBC HER 2-: 2nd line endocrine
B7	
Notes	• For low risk patients on adjuvant trastuzumab, consider stopping after 16 treatments • MBC: consider D/C taxane after 6 cycles; maintenance pertuzumab/trastuzumab and kadcyla for greater than 18 months could be considered a lower priority • If surgery is unavailable for neoadjuvant patients, consider Kadcyla for HER2 positive and capecitabine for triple negative if there is radiological evidence of residual disease

DISEASE SITE: CNS

A1	• Surgery for patients with high-grade glioma is required for diagnostic purposes and often, for relief of symptomatic mass effect
A2	
B1	
B2	• Adjuvant therapy is non-curative but extends progression-free and overall survival • The benefit of adjuvant therapy is profound in some patients with glioblastoma, particularly younger patients with MGMT promoter methylation. The data support initiation of adjuvant therapy within 4-8 weeks of diagnosis.
B3	
B4	• High grade glioma in younger patients
B5	• High grade glioma in elderly patients
B6	
B7	

Notes	• Treatment is oral and is not resource intensive and can be done remotely. • MGMT could identify patients who do not benefit from temozolomide and could minimize the number of patients on this therapy.

DISEASE SITE: SKIN

A1	
A2	• Large fungating masses
B1	• Adjuvant melanoma • Palpable nodal disease adjuvant therapy: Consider starting adjuvant therapy before surgery in the case of surgical delay
B2	
B3	
B4	• 1st line metastatic melanoma Please note that the survival benefit is substantial (3month to over 5 years; some may be cured) • 2nd line metastatic Melanoma Immunotherapy for SCC and Merkel cell
B5	• Chemotherapy for SCC and Merkel • 3rd line clinical trial options for melanoma • Chemotherapy for melanoma • Vismodegib for BCC
B6	
B7	
Notes	

DISEASE SITE: HEAD & NECK

A1	
A2	• **Anaplastic Thyroid:** high priority for starting 1st line systemic therapy if no other treatment modality available
B1	• Concurrent chemoradiation
B2	
B3	
B4	• Nivolumab 2nd line
B5	• 3rd or later line palliative systemic therapy
B6	• **Anaplastic thyroid:** Low priority for later (2nd or 3rd) line therapy with low chance of benefit
B7	
Notes	

DISEASE SITE: LUNG

A1	
A2	• SCLC with significant morbidity due to tumour burden
B1	• Concurrent chemotherapy radiation for NSCLC and SCLC • Temporizing neoadjuvant treatment that is not being given just for survival benefit, but also due to impaired resources in other areas (i.e. ensuring the cancer does not grow due surgery delays)
B2	• Adjuvant chemotherapy in resected stage III NSCLC • Consolidation therapy with durvalumab following chemoradiation in stage III NSCLC • Consider neoadjuvant chemotherapy if significant delays in proceeding to surgery
B3	• Adjuvant therapy in resected stage II NSCLC (Consider forgoing adjuvant chemotherapy in stage IB > 4cm)
B4	• Oral TKI therapy in NSCLC with underlying molecular abnormality • 1st line palliative chemotherapy in NSCLC and extensive stage (ES) SCLC • 1st line palliative chemotherapy for malignant pleural mesothelioma
B5	• NSCLC 2nd or 3rd line therapy
B6	• 2nd line chemotherapy in SCLC patients with platinum resistant or sensitive disease.
B7	
Notes	• Maintenance chemotherapy or immunotherapy may be held after 6 months • Consider omitting 2nd line chemotherapy in platinum refractory SCLC • Defer 2nd therapy in malignant pleural mesothelioma • Also, need to be aware of potential shift in treatment modality from surgery to radiation / chemoRT approaches. • This might lead to an increased demand for chemoRT, or even neoadjuvant chemotherapy approaches.

DISEASE SITE: HEME

A1	• High grade lymphoma (e.g., Burkitt) • Acute leukemia (1st or relapse)
A2	
B1	• Aggressive lymphoma (NHL and HL, 1st or 2nd line) • Lymphoma auto transplants
B2	
B3	
B4	• Low grade lymphoma with significant symptom burden • CLL 1st line • Multiple myeloma 1st therapy (with our without autoSCT)
B5	• Multiple myeloma 2nd or 3rd line therapy • CLL 2nd or 3rd line

B6	• Low grade lymphoma after multiple lines of therapy • CLL after multiple lines of therapy
B7	
Notes	• Priority should be given to patients with impending marrow failure/organ failure/obstruction who require immediate intervention for disease control, as consequences of delaying therapy would result in the need for other medical intervention (e.g., hospitalization) and resources. • Maintenance rituximab can be deferred/delayed

DISEASE SITE: NETS

A1	
A2	• **Cisplatin/Carboplatin + Etoposide** for high grade with high disease burden similar to SCLC
B1	
B2	
B3	
B4	• **Cisplatin/Carboplatin + Etoposide** for high grade neuroendocrine carcinoma
B5	• **SSA** – functional NETs for symptom control • **SSA** – Anti tumor control • **Temozolamide/Capcitabine** – pNETS • **PRRT**
B6	• **Everolimus** – pNET • **Sutent** – pNET
B7	• **PRRT** – For pNETs can use Tem/Cap
Notes	• A minority of patients will need ongoing treatment for symptomatic functional disease • The vast majority of NETs treatment can be delayed without considerable known survival detriment • The vast majority of care is delivered at home (SSA injections are delivered by patient support programs in the patient's home

DISEASE SITE: GU

A1	
A2	
B1	
B2	
B3	• **Urothelial** - Neoadjuvant chemo. • Use prioritized if delay in access to definitive local therapy with cystectomy or if bulky tumour that is not optimally managed with tri-modality therapy
B4	• **Renal**: 1st line immunotherapies (combination ipi-nivo, pembrolizumab+axitinib). • 1st line TKIs also offer substantial benefit, but to a lesser extent than

	immunotherapies. • **Non-metastatic castrate resistant prostate** - Apalutamide (funded) or enzalutamide are options
B5	• **Renal:** Nivolumab 2nd line. If stable disease, suggest a treatment break. • **Prostate:** Radium should be given precedence over chemotherapy as it is less immunosuppressive. However, radium administration is dependent on nuclear medicine resource availability). • **Metastatic castrate resistant prostate cancer**- Goal is avoidance of taxane or chemotherapy. If no prior androgen-receptor target therapy (ARAT), then treat with an ARAT. If good response with prior ARAT, recommend another ARAT over chemotherapy.
B6	• **Prostate** - For bone targeted agents, recommend denosumab over zoledronic acid. Instead of q4weekly denosumab, consider extending to q12 weekly.
B7	
Notes	• **Testes** - Most indications are imminent risk of early mortality unless post-transplant recurrence, truly refractory. • **Stage 1 seminoma/non-seminoma** – prefer surveillance as there is no survival advantage over treatment on relapse. • **Metastatic hormone sensitive prostate** - Androgen deprivation therapy (ADT) should be continued. ARATs are preferred over docetaxel but currently not funded, though abiraterone and apalutamide may be obtained through manufacturer compassionate supply

DISEASE SITE: GI

A1	
A2	
B1	• **Anal Canal:** Concurrent CRT • **Rectum**: Neoadjuvant/Adjuvant • **Rectum:** Combined modality
B2	• **Esophagus:** Curative (combined CROSS) and Curative CRT (no surgery) • **Gastric cancer:** peri-op FLOT • **Colon**: Adjuvant
B3	• **Biliary:** Adjuvant • **Pancreas:** Adjuvant or Neoadjuvant • **Small bowel:** Adjuvant • **Colon:** Pseudo-Adjuvant
B4	• **Esophagus:** 1st line palliative • **Pancreas**: Palliative – FOLFIRINOX • **Colon:** 1st line palliative
B5	• **Esophagus:** 2nd line palliative • **Gastric:** 1st line palliative (FOLFIRI, FOLFOX, Tras-Cis-FU etc.) • **Pancreas:** Gem/Abrax or Gem • **Biliary:** Palliative (i.e Gem/Cis)

	• **Small bowel:** 1st line Palliative • **Colon:** 2nd line palliative
B6	• **Gastric:** 2nd line palliative • **Hepatocellular:** Palliative systemic therapy • **Small bowel:** 2nd line Palliative • **Colon:** subsequent lines palliative
B7	
Notes	• Consider continuing chemotherapy if surgery is delayed e.g., FOLFIRINOX for neoadjuvant pancreas, FLOT in gastric, TNT in rectal cancer • Consider XELOX as an alternative to FOLFOX to decrease visits and avoid central lines • Where multimodality is required, MCC discussions (virtual) are important for Esophagus, Rectum, and Anal Canal

Radiation Treatment

This guidance is largely based on the manuscript by Hanna et al (1). We greatly appreciate the authors permission to use their manuscript. It is based on the essential principle of justice with need and efficacy of treatment as the determining factors. As for all cancer treatment approaches, while the waiting time for treatment for these patients should be kept as short as reasonably achievable, when there is moderate or severe health care resource limitation (or the expectation that this will happen imminently) priority-setting needs to be discussed.

Prioritization in Priority B patients in this setting is complex and should consider many factors including:

- Patient COVID-19 status
- Risk to staff in treating certain categories of patients
- Treatment intent including magnitude of potential treatment benefit
- Whether the patient has started RT
- Availability of support (e.g. Anesthetic, Nursing, Surgical and Medical Oncology) – especially where concurrent systemic therapy is the standard of care.
- Availability of alternative treatment approaches
- Likely impact of delay in treatment on outcome
- Patient level factors including age, PS, co-morbid illnesses

Guidance

These suggestions for consideration and possible changes in practice take into account treatment intent, the possible morbidity associated with delay/deferment of therapy, the likely benefit of treatment in both survival and palliation of symptoms. The framework makes clear that prioritization occurs across a continuum, and there is a rank-order of general case types on this continuum. Within any one patient group, however, individual cases may have different priorities based on the other factors as outlined above that may need to be taken into account. The need for rationing resources across this continuum will depend to a certain extent on the local program COVID case load and resource constraints.

Completion of Treatment Course

Patients who have started on curative radiation therapy (RT) should, if at all possible have their treatment completed as initially planned (although some changes in fractionation schedules could be considered in certain circumstances). This would include completion of a brachytherapy boost after RT in certain cancers – almost essential for cure in cervix cancer.

Use of Hypofractionation

The use of hypofractionated treatment schedules should be encouraged wherever possible to conserve treatment capacity. While individual patient factors need to be taken into account in all treatment decisions the use of altered fractionation schedules should be developed by departmental disease site groups with input from the broader multi-disciplinary teams within each institution. Some specific examples that could significantly affect treatment capacity are outlined below:

1. **Breast Cancer – Adjuvant breast RT**

   The use of fractionation schemes such as 50 Gy/25 should be actively discouraged except in exceptional cases. The use of 5 fraction regimens (partial or whole breast RT) used in the UK Fast

Forward trial or ACCEL study would appear reasonable – especially if there is moderate to severe resource limitation in an institution. (2,3)

2. **Rectal Cancer – neo-adjuvant RT prior to surgery**

   The use of short course treatment 25 Gy/5 rather than the traditional 5-6-week treatment schemes should be actively considered and the timing of surgery – either delayed or immediate should be discussed with local surgeons.

3. **Prostate Cancer**

   If a decision is made to proceed with treatment rather than delay therapy with the use of ADT in intermediate and high-risk patients - then the use of a 5 fraction SBRT approach (as per the PACE study) or a 7 fraction IMRT/VMAT strategy (as per the HYPO-RT-PC Randomized trial) – should be actively considered.

4. **Bone Metastases including Spinal Cord Compression**

   The use of single treatments should be actively encouraged including in patients with spinal cord compression as per the recent SCORAD trial. (4)

5. **Brain Metastases**

   20 Gy in 5 fractions for WBRT should be favored over protracted regimens like 30 Gy in 10 fractions

   SRS should be reserved namely for patients with 1-3 brain metastases and if technically feasible a single fraction of RT should be considered

6. **Primary CNS**

   a. 40 Gy in 15 fractions for all newly diagnosed GBM irrespective of age is reasonable practice and should be considered with consideration of TMZ on a case by case basis
   b. Short course radiation such as 25 Gy in 5 fractions for elderly patients >/= 70 years of age per Roa et al. may be appropriate
   c. In patients with anaplastic astrocytoma over age 50 one should consider if:
      i. IDH-ve then 40 Gy in 15 +/- TMZ
      ii. IDH+ve then standard fractionation would be preferred, however, there should be a discussion with the patient as to potential pros and cons of hypofractionated treatment

Deferring the Start of RT

The use of endocrine therapy, in patients with prostate and breast cancer to delay the start of RT, should be considered in each centre.

Investigate the Use of Alternative Treatment Approaches

- In patients referred for consideration of palliative RT consideration should be given optimizing supportive care e,g, increasing analgesics in patients with mild to moderate pain from bone metastases.
- The use of Active Breathing Control (ABC) units should be discussed with infection control staff and if used then individual patient snorkels (discarded daily) should be utilized. Alternative approaches including voluntary breath hold should be considered.
- The use of spinal anesthesia rather than general anesthesia (GA) should be considered – both from a staff safety perspective (see below) and conservation of resources.

Treatment of COVID-19 Positive Patients

The specific risks associated with RT in these cases should be considered especially if thoracic RT is being planned. Departmental policies on the appropriate cleaning of the simulation and treatment rooms (likely after each case) need to be developed with the involvement of infection control staff.

Risk to Staff in Treating Certain Patients

- Radiation therapists (and other staff) who treat patients who are either COVID-19 positive or who are considered to be at "High-Risk" or virus transmission (e.g patients with tracheostomy) must have access to appropriate personal protective equipment (PPE).
- The risk to anesthetic and other staff in any procedures that require GA e.g. brachytherapy procedures and pediatric cases will need to be balanced against the likelihood of benefit of treatment

Prioritizing Access to RT

In deciding on which groups of patients should have priority for starting radiation therapy an evidence-based approach should be used wherever possible. In some cancers there is clear evidence that delay in starting radiation therapy impacts on outcome:

- There is a 16% increased risk of death per month of delay for head and neck cancer radiotherapy [RR 1.16 (1.02,1.32)] (5)
- There is an 11% increased risk of local recurrence per month of wait for radiation therapy after surgery for breast cancer [RR 1.11 (1.04,1.19)] (6)

While in most cancers there are no data on the impact of delay on long-term outcome – delay in initiating treatment likely affects the relapse rate and/or survival in many diseases. Multi-disciplinary case conferences (MCC), site-group and Departmental meetings with multi-disciplinary involvement will be essential in formulating policies in this regard. In complex individual cases where Radiation Therapy is being delayed the use of MCCs is strongly recommended. The involvement, if possible, in these discussions of a medical ethicist should be actively encouraged.

References

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Cancer Imaging

Imaging plays an important role throughout a patient's cancer journey, including acquiring critical imaging information used in the diagnosis and staging of cancers. In addition to supporting cancer patients most hospital imaging departments provide services across all areas of patient care.
The pandemic guidance below expands upon the Ontario Health (Cancer Care Ontario) Pandemic Planning Clinical Guideline, March 10, 2020 and is meant to be used together with decisions made locally regarding patient prioritization and management.

As expressed in the general statement(s), decisions should be made locally through a team approach in a coordinated manner. This could be through a multidisciplinary team or as necessary through a pandemic triage management committee. This approach will help support individual clinicians and remove the burden/guilt of difficult decision making. Decisions must be clearly communicated to patients.

In the development of this guidance alignment with supplementary guidance from the following Ontario Health (Cancer Care Ontario) programs has also been considered:

- Screening
- Radiation treatment
- Surgical Oncology
- Systemic Therapy

Scope

This document focuses on considerations for imaging required for oncology patient care, however the principles can be leveraged and applied as appropriate for other conditions.
The following imaging modalities are essential in the assessment of oncology patients, and high-level guidance is provided for each modality.

- Computed Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Positron Emission Tomography (PET, typically combined with CT as PET/CT)*
- Breast Imaging
- Bone Mineral Densitometry (BMD)
- Nuclear Medicine (NM)
- Ultrasound (US)
- Interventional Radiology

Consideration is made of patients that are currently booked as well as new patients. Guidance for prioritization of specified date procedure imaging (for any modality) is also provided.
* Given Ontario Health's mandate related to PET, including all ages and conditions, guidance related to cardiovascular PET indications have also been included, with input from cardiovascular nuclear imaging and PET experts.

This document does not provide information related to infection prevention and disinfection in imaging departments. The Canadian Association of Radiologists (CAR) and Canadian Society of Thoracic Radiology have produced a joint statement on COVID-19 management (1), as have the Canadian Association for Interventional Radiology together with CAR (2) which provide further guidance in this area related to radiology and interventional radiology.

Patient Priority

Wait lists will require regular review to determine patient exam booking priorities in light of bed and resource availability. Individual patient priorities may change based on clinical circumstances.

To help manage and monitor wait lists, and ensure patients are booked for a timeframe appropriate for their clinical care, tracking mechanisms should be considered in order to identify which patients have been deferred and, where available, planned date of imaging.
Ontario has an existing priority system for CT and MRI, with data reported through the provincial Wait Times Information System (WTIS), managed by Access to Care as part of Ontario Health. The WTIS system includes: four priority levels with associated access targets; the ability to consider "Specified Date Procedures" (SDP), where imaging is to be completed after a medically specified period of time (or future date); and clinical indication for scan including a specific cancer flag to identify cancer patients.
Although the WTIS priority levels are used primarily for CT and MRI, some medical imaging departments have adapted the priority levels to other imaging modalities.

Table 1: Cancer imaging patient populations' priorities A, B, C and alignment with WTIS Priority Levels

Priority	Description (WTIS)
Priority A (WTIS Priority Levels 1 and 2)	An examination necessary to diagnose and/or treat disease or injury that is immediately threatening to life or limb. (Access target within 24 hours) An examination necessary to diagnose and/or treat disease or injury and/or alter treatment plan that is not immediately threatening to life or limb. (Includes all inpatients except where imaging is unrelated to patient admission based on clinical indication.) (Access target within 48 hours)
Priority B (WTIS Priority Level 3, and select Specified Date Procedures as described)	An examination necessary to diagnose and/or treat disease or injury and/or alter treatment plan, where provided clinical information requires that the examination be performed sooner than the WTIS P4 benchmark period. (Access target within 10 days) Specified date procedures used to assess active response to treatment.
Priority C (WTIS Priority Level 4, and select Specified Date Procedures as described)	An examination necessary to diagnose/treat disease or injury, where the provided clinical information does not require the study to be performed within the Semi-Urgent (WTIS P3) access benchmark time frame of 10 days. (Access target within 28 days) Specified date procedures for screening populations (with defined risk factors), and guideline-based surveillance without active treatment decision pending.

Urgency of imaging as part of cancer diagnosis and/or treatment work-up is dependent on clinical factors such as aggressiveness of disease, symptom burden, and timing of treatment. Imaging for cancer patients thus usually fall into Priority B.
As there is a significant number of patients within Priority B, and hospitals may require further guidance on prioritization within this category, these modality-specific considerations below may help support centres as they focus on essential services and managing patient care needs.
Considerations related to specified date procedure imaging can be applied across modalities, and are in their own category.

For all imaging modalities, all non-urgent/elective imaging (i.e., Priority C / WTIS Priority Level 4) should be considered for deferral at this time.

Computed Tomography (CT) and Magnetic Resonance Imaging (MRI)

Priority A and B patients (WTIS Priority Levels 1, 2 and 3) should be booked as per existing scheduling processes with consideration of wait times, department social distancing plans and patient COVID-19 status. Currently booked and new Priority B (WTIS Priority Level 3) patients that could be considered for deferral include patients with: indolent tumours; benign disease; meningioma; pituitary adenoma and adrenal adenoma workup, characterization of small renal masses, based on previous imaging (at the discretion of the radiologist and in consultation with referring clinician) unless exceptional clinical circumstances are present. All currently booked Priority C (WTIS Priority Level 4) patients should be deferred, as should all new patients in this category.

Lung Cancer Screening Pilot for People at High Risk (low-dose CT)

In alignment with the Cancer Screening section of the OH-CCO Pandemic Planning Clinical Guideline for Patients with Cancer document, enrollment of new patients for screening should be deferred, as should low-dose CT imaging for baseline and routine (annual) follow-up (Lung-RADs score 1 and 2) for current patients. Patients with planned 6-month low-dose CT (e.g., Lung-RADS 3) should have follow-up imaging, although slight deferral may be considered. Patients with positive finding, suspicious for cancer (e.g., Lung-RADs 4) should have diagnostic testing as indicated, considering overall clinical urgency.
Note: Information related to High Risk Breast Screening with MRI included in breast imaging.

Specified Date Procedure Imaging

Specified Date Procedures are "timed" imaging examinations, defined as imaging to be completed after a medically specified period of time (or future date). For cancer patients, this commonly includes assessment of treatment response, residual disease, and guideline-indicated surveillance for recurrence (in the absence of clinical suspicion/symptoms), as well as defined-interval screening exam follow-ups.
Imaging that should continue includes scans performed during the active phase of treatment (e.g., response to therapy, where treatment modification is being considered).
Patients that can have imaging deferred during pandemic include surveillance for recurrence. Note that these patients should be re-evaluated for prioritization if symptoms/signs of recurrence are presence. Prioritization of patients between these two scenarios (e.g., timed 3-6 month follow-up) should be discussed with treating clinicians and radiology, and consideration given for deferral if changes in management are not expected.

PET Scanning

Ontario Health's mandate for PET scanning includes all diseases; considerations for non-oncologic indications include:
Neurologic PET (epilepsy): PET in epilepsy can be considered for deferral

- **Oncology**: Patients requiring PET scanning for oncology indications are primarily Priority B. However, scenarios where PET scanning could be safely deferred include:
    - PET for solitary pulmonary nodule where clinical suspicion for malignancy is low
    - Patients with relatively indolent malignancies that will not be treated (or therapy will not be altered) during the pandemic. However, if new therapy is being considered, imaging – including PET – should be performed.

- **Cardiovascular:** Conditions where the imaging result can impact short term patient management decisions, leading to a possible impact on outcome, should continue with patients prioritized according to urgency. Additional guidance related to nuclear cardiology are anticipated to be released shortly by the American Society of Nuclear Cardiology, which may help inform local discussions on patient prioritization and management during pandemic conditions.

- **Higher-priority examinations include:**
    - Rubidium-82 PET for myocardial perfusion imaging in patients with new or accelerating symptoms, CCS Class >II (intermediate pretest probability) or high likelihood of coronary artery disease with high risk for catheterization, or assessment of perfusion where it will impact short term decisions impacting care. (Note that PET is preferred over SPECT, where available, due to shorter time spent in the department.)
    - FDG-PET for myocardial viability assessment, to assist with urgent revascularization decisions.
    - FDG-PET for inflammation, to assist with diagnosis in particular where there is an attempt to avoid transesophageal echocardiography for endocarditis and where it will impact short term management decisions
    - FDG-PET for diagnosis of sarcoid to assist with management decisions for urgent device therapies and/or immunosuppression therapies.

Deferral of FDG-PET for follow-up of sarcoid in most cases can be considered except if there is a significant LV function deterioration or serious life threatening arrhythmias and imaging results will impact short term management decisions

Breast Imaging

Breast imaging, including all relevant modalities, should be performed according to clinical urgency/prioritization.

Enrollment of new patients for breast cancer screening should be deferred, including for the Ontario High Risk Breast Screening program, as should currently booked routine follow-up for current patients, aligned with the Cancer Screening section of the OH-CCO Pandemic Planning Clinical Guideline for Patients with Cancer document.

New bookings should be limited to patients with high suspicion of breast cancer, including:

- Patients with signs or symptoms suspicious for cancer, including patients with recent mammographic findings for work-up
    - Patients in treatment, or urgent oncology patients that require imaging
    - Follow up on a patient with previous biopsy
- Follow up expressly requested by oncology, including any case discussed at multidisciplinary conference where imaging is determined to be critical for management decisions

Additional, comprehensive, resources can be found in The Canadian Society of Breast Imaging and Canadian Association of Radiology guidelines for Breast Imaging during Covid-19 Pandemic (3) which may be useful in informing local decision-making regarding breast imaging, including both screening and diagnostic populations as well as recommendations related to remote interpretation.

Bone Mineral Densitometry (BMD)

All BMD scans can be deferred unless expressly requested by oncology.

Nuclear Medicine

Bone scans may often be safely deferred, depending on clinical scenario.

Ultrasound

Proceed with all ultrasound imaging required in the ongoing clinical management of cancer patients, where possible, according to pandemic planning Priority category.
Ultrasound imaging of thyroid and ultrasound guided fine needle aspiration(s) should be deferred in situations where the clinical scenario is consistent with a benign thyroid process or early stage well differentiated thyroid cancer. In a clinical scenario of regional disease or large volume local disease or where there is recurrent nerve paralysis, impending airway obstruction or compressive symptoms (eg dysphagia) then imaging and FNA are warranted.

Interventional Radiology

Proceed with all cancer related procedures required in the ongoing clinical management of cancer patients, where possible, according to pandemic planning Priority category.
Currently booked or new patients that can be considered for deferred booking include the below:

- Port insertions, if conversion to a PICC is an option
- Thyroid fine needle aspiration
    - Ultrasound imaging of thyroid and ultrasound guided fine needle aspiration(s) should be deferred in situations where the clinical scenario is consistent with a benign thyroid process or early stage well differentiated thyroid cancer. In a clinical scenario of regional disease or large volume local disease or where there is recurrent nerve paralysis, impending airway obstruction or compressive symptoms (eg dysphagia) then imaging and FNA are warranted.
- Prostate biopsy for non-high risk patients
- Renal ablation procedures

References

1. Canadian Society of Thoracic Radiology and the Canadian Association of Radiologists' Statement on COVID-19 at https://car.ca/cstr/ ; https://car.ca/wp-content/uploads/2020/03/The-Canadian-Association-of-Radiologists-CAR-and-the-Canadian-Society-on-Thoracic-Radiology-CSTR-Recommendations-on-COVID19-Management-in-Imaging-Departments-1.pdf

2. Canadian Society of Interventional Radiology (CAIR) and the Canadian Association of Radiologists' (CAR) Guidelines for Interventional Radiology Procedures for the Patients with Suspected or Confirmed on COVID-19 https://car.ca/wp-content/uploads/2020/03/CAIR_CAR_Statement_COVID19_IR_Procedures_FINAL.pdf

3. Canadian Society of Breast Imaging and Canadian Association of Radiologists guidelines for Breast Imaging during COVID-19 Pandemic, Consensus from CSBI member web meeting March 24, 2020 (statement shared ahead of publication; https://csbi.ca)

Surgical Oncology

Cancer surgery resources are managed independently by each hospital and as such, each institution must balance the needs of their urgent scheduled surgical patients (including cancer patients), emergency surgery patients and the ventilatory needs of critical care patients in hospital, including COVID 19 infected patients.

Hospitals will allocate resources to meet the demand of patients affected by Covid-19 and other emergency care as well as urgently scheduled surgical procedures such as cancer surgery and cardiac surgery. This document is meant to provide guidance for prioritizing cancer surgery patients in an environment of reduced physical and human resources.

Wait lists will require regular review to determine priorities in an environment of bed and resource reduction. During the course of a prolonged pandemic where operating room resources are reduced for prolonged periods it is recognized that some Priority B or Priority C patients would be escalated to higher priority levels over time.

In critical bed and resource situations, the surgical priority may need to be for life-saving procedures for those patients whose long-term prognosis for survival is good.

Outpatient cancer surgery for Priority A or B patients should be included in hospital plans, if resources are available. Decision-making about prioritization for outpatient surgery or procedures should use the same principles outlined in this document.

Brachytherapy requires similar access to OR resources including anesthesia in most cases and should be considered in all Cancer Centre plans where brachytherapy programs exist. This is especially important in the management of patients with cervix cancer where deferment (or cancellation) of a brachytherapy boost after completion of external beam radiation will place these patients at significant risk.

If no cancer surgery can take place at a hospital:

Once a hospital reaches a critical mass of ventilated patients, virtually all elective surgery must be postponed. Under these circumstances, OH-CCO recommends regional coordination between institutions and surgeons to redistribute cancer related procedures and minimize the wait to surgery for cancer patients.

A delay to surgery could lead to the need for emergency surgery (e.g. bowel obstruction, spinal cord impingement) or compromise the patient's long-term cancer free survival. Prioritization should be on the case by case basis, where clinicians will triage cases to minimize the risk of delay.

Early multidisciplinary discussion (medical oncology, radiation oncology, surgery/surgical oncology) to tailor multimodal therapy and mitigate the risk of tumour progression under circumstances of limited access to surgical resources. Normal pathways of care may not be possible. Given the limited surgical resources, as well as the risks to patients for higher peri-operative mortality, alternatives to surgery should be considered when feasible. For example, offering/extending neoadjuvant chemotherapy, or offering radiation/chemo-radiation, in order to delay surgery for several months, may be a safer alternative to surgical resection. Decisions regarding surgical management should consider the need for PPE and availability, blood transfusion, ICU utilization and long-term ventilator dependence, and risk of complications that may require re-operative surgery.

When a pandemic is expected to last longer than 8 weeks this will pose a significant health risk to many cancer patients particularly Priority A patients where hospitals do not have the capacity to perform surgery and Priority B patients who will wait longer than 4 weeks. There will be a significant risk to cancer patients if further resources are not developed.

Recommendations for Prioritizing Cancer Surgery

The Surgical Oncology Program worked in consultation with Regional Surgical Leads and Ontario Cancer Leads to determine the best guidance for prioritizing cancer surgeries.

Table 2 summarizes the overall criteria for surgical oncology pandemic priorities (A, B and C) generally align with the Wait Times Information System (WTIS) priorities (1 through 4).

Table 3 summarizes the disease site specific pandemic priorities.

For other resources, the Society of Surgical Oncology and the American College of Surgeons have provided advice on prioritizing cancer surgery cases by disease sites. The web links are: https://www.surgonc.org/ and https://www.facs.org/covid-19/clinical-guidance/elective-case

Table 2: Overall Surgical patient populations' priorities A, B and C

Priority	Description	Examples	Considerations
Priority A (WTIS Priority Categories 1 and 2 and some Priority Category 3, emergent and very aggressive tumours).	Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis.	Patients with obstructions, bleeding or perforations requiring immediate surgery Other patients would be those with a narrow window of opportunity for definitive surgery, such as those who have been on neoadjuvant protocols. A significant delay for the neoadjuvant patients could negatively impact on their outcome by allowing for recovery of residual cancer and thus losing the benefit invested in the neoadjuvant approach.	1. It is important that all patients are listed in the Wait Times Information System (WTIS) to allow the hospital and province insight to significant delays. 2. As Priority A patients may represent the sickest of our population, there will be requirements for ICU and step-down care for post-operative management of some of these patients. These resources may be in high demand during a pandemic. 3. All priority patients, especially Priority B, would have to be followed as excessive delays, evidence of unexpected progression, or the onset of symptoms (e.g., bleeding, obstruction) would mandate escalation to a higher priority.
Priority B (WTIS Priority Category 3 and some Priority Category 4 tumours).	Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome	Most solid tumour cases (e.g., breast, colon, lung, GU, gyne, head and neck, GI), provided delays were in the range of 4 weeks.	
Priority C (WTIS Priority Category 4, indolent tumours).	Patients for whom a delay of 2 months would be unlikely to affect outcome	Well differentiated thyroid cancers, early prostate cancers and non-melanoma non-squamous cell skin cancers.	

The ability to perform cancer surgery requires many hospital resources/departments which may constrain the volume of surgeries performed. For example:

- Prior to surgery preoperative laboratory work up and radiology services as well as medical consultation in some cases (e.g., cardiology and respiratory specialist availability).
- Surgery requires anesthesiology staff, surgeon and assistant, operating room nursing, pathology and radiology services, recovery room and peri-operative nursing, and inpatient care nursing.
- Requests to the pathology laboratory for frozen sections should be minimized and only requested when they will have a direct impact on the current surgical management. This is to minimize impact on laboratory staffing and reduce any potential risk of laboratory staff to infection.
- There likely will be the need for ICU and step-down care for post-operative management of some of these patients. These ICU beds may be occupied by pandemic-related symptomatic patients.
- A functioning operating room will require some level of ongoing support from the hospital's material management and services sections (sterilizing and processing instruments, cleaning, etc.)

The following information is intended to clarify the patients who are higher priority. Specifically, the following information provides a guide to hospitals to separate Pandemic Category A patients with Wait Time Priority Level 3 and Pandemic Category B patient with Wait Time Priority Level 3.

Table 3: Cancer Surgery Prioritization, By Disease Site

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
Genito-urinary / Prostate Cancer	• RPLND for testis cancer when active surveillance not a recognized alternative • Radical orchiectomy • Radical nephrectomy for RCC with associated venous thrombus	• Partial or radical nephrectomy for large renal mass (T2 or large RCC) • High risk prostate cancer (Gleason 8 or higher) • Extirpative surgery for high grade urothelial carcinoma • Surgery for invasive penile cancer	• Intermediate risk prostate cancer (low risk prostate cancer if not a candidate for active surveillance) • Renal mass 4 cm or less (T1) • Low grade urothelial carcinoma of bladder or upper tract	

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
Breast	• Patients progressing while on systemic therapy* • Malignant phyllodes • Angiosarcoma • Triple negative breast cancer who are 5-6 weeks post chemotherapy (priority to those with partial clinical response) • Patients who have finished systemic chemotherapy +/- herceptin and are thought to be at high risk for progressing (including inflammatory breast cancer) *Most patients including DCIS that is ER+ and all breast cancers should be considered for some form of neo-adjuvant systemic therapy (endocrine, chemotherapy, Herceptin) if there is a delay to the operating room	• Her2+ and ER+ cases who are 5-6 weeks after finishing neoadjuvant chemotherapy who can continue some form of systemic therapy • Palpable cancers • Non palpable / screen detected cancers	• DCIS • Atypia • Prophylactic surgeries	**Considerations**: * Patients should be discussed at virtual MCC especially ER+ patients on neo-adjuvant endocrine to decide as to when to operate * Clips should be placed in all tumors when breast-conserving surgery is being considered and patient is getting neo-adjuvant systemic therapy. This should also be considered for lymph nodes. * Consider primary surgery as urgent (priority B) if patient unable to undergo chemotherapy (including endocrine therapy. * Patients whose tumors progress and systemic therapy can be considered for neoadjuvant RT if surgery delayed * In a situation where the patient would be considered for ablative and reconstructive surgery simultaneously performing the ablative surgery alone without advanced reconstruction should be considered in a resource restricted environment. Expander or direct to implant to be considered on a case by case basis

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
HNK: Larynx/Hypopharynx	In general, panendoscopy and EUA/biopsy for the diagnosis of cancer would be deferred for patients where clinical judgement and imaging support strongly support a diagnosis of malignancy. The following high priority cases have been identified: 1. T1 and T2 Glottic and Supraglottic tumors would not be considered for endoscopic/open conservative treatment approaches and referred for radiation treatment (RT) 2. Patients presenting with primary T4a laryngeal/hypopharyngeal cancers and patients with recurrent disease following Chemo/RT or RT would be classified as high priority	All other HNK malignancies Priority B.		

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
HNK: Oral Cavity and Lip	In principle, invasive mucosal squamous cell carcinoma disease would be classified as high surgical priority. Prioritization of the cases be based on: a. Disease extent and risk of progression if deferred b. Patient age and other patient factors c. Co-morbidities particularly patients who will require a post-operative ICU bed In patients with early stage disease, flap reconstruction should be avoided when clinically reasonable in order to mitigate the need for perioperative tracheostomy and to ensure that more cases can be done per OR time unit to allow other patients to be treated.	All other HNK malignancies Priority B.		
HNK: Oropharynx	1. T1 and T2 salvage after ChemoRT or RT failure 2. Salvage of persisting neck disease It is recommended that TORS programs both for diagnosis and treatment be suspended.	All other HNK malignancies Priority B.		

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
HNK: Nasal Cavity and Sinus	1. Recommend primary radiotherapy as part of a planned combined treatment approach. Exceptions can be reviewed by the multidisciplinary team. Planned combined treatment patients would be high priority. 2. There should be careful selection of patients considered for salvage surgery and consideration of open vs endoscopic surgical approaches	All other HNK malignancies Priority B.		
HNK: Salivary Gland	High grade malignancies including adenoid cystic, high grade mucoepidermoid, salivary duct or cutaneous metastases to the parotid or neck	All other HNK malignancies Priority B.		
HNK: Skin	1. Advanced local disease, those patients with regional disease from skin primaries 2. Soft tissue and bone sarcoma where alternate treatments (neoadjuvant chemotherapy for bone cancers, chemotherapy or radiation therapy for soft tissue sarcoma) is not a viable option.	All other HNK malignancies Priority B.		

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
HNK: Naso-pharynx		All other HNK malignancies Priority B.	• Other Considerations: • Avoid nasopharyngeal biopsy if possible, i.e. consider Core or FNA biopsy of neck disease if an option based on disease extent. In general, EUA/biopsy for the diagnosis of cancer would be deferred for patients where clinical judgement and imaging support strongly support a diagnosis of malignancy. Any nasopharygeal biopsy or surgical intervention should be reviewed by the multidisciplinary treatment team and generally avoided.	

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
Gynaecology	<u>Emergency Cases</u> • Ruptured ovarian mass • Uncontrolled vaginal bleeding • Severe abdominal/pelvic pain	<u>Urgent Cases:</u> • Early stage moderate/high grade endometrial cancer-curative intent • Ovarian cancer that cannot have neoadjuvant chemotherapy (review case-by-case) ex. low grade serous ovarian cancer • Adnexal masses that have had rapid enlargement or high risk for malignancy • Cervical cancer for curative intent • Vulvar cancer for curative intent • Delayed cytoreductive surgery for advanced ovarian cancer after neoadjuvant chemotherapy (up to 5 cycles) • Surgery for recurrence curative intent • Uterine mass suspicious for sarcoma	• Adnexal masses that have shown stability over time • Stage 1A1 cervical cancer • Ileostomy Reversals due to hydration dependence • Surgery for recurrence – non curative - • Pre-invasive disease • Ileostomy reversal • Grade 1 endometrioid treat with high dose progestin up to 12 weeks as a temporizing solution	Cytoreductive operations should generally be delayed but should be considered on an individual basis; consider treating with neoadjuvant therapy if high grade serous ovarian cancer. .

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
Thyroid	• Disease with clear evidence of airway invasion or compromise • Advanced local disease with significant disease progression on serial imaging • Advanced, resectable neck disease with evidence of significant disease progression on serial imaging			

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
Skin (Melanoma & non-melanoma)	• Rapidly growing melanomas, squamous cell carcinomas or Merkel cell carcinomas (primary or nodal disease)	In order of priority: 1. Primary lesion too large to excise in clinic and needs WLE and SNB 2. 2-4 mm or < 2mm and ulcerated WLE and SNB 3. >4mm WLE and SNB 4. 1-2mm primary non ulcerated, SNB	• < 0.8 - 1mm SNB	**Other Considerations:** • Primary melanomas with depth > 1mm should be excised with negative margins in clinic under local anesthetic • Primary lesions 0.8-1mm should be excised with 1cm margin in clinic under local anesthetic in the absence of being able to do a SLNB for the next 3-6 months • For nodal disease, consider neoadjuvant therapy if time to OR is delayed. Patients must be closely monitored during neoadjuvant treatment. With increasing resource reduction evaluation of the necessity of a SLNB should be evaluated and deferred if possible

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
GI: HPB (Based on SSO Advice)	Patients who have completed neoadjuvant chemotherapy for pancreatic cancer and gastric cancer. Strongly consider continuing systemic chemotherapy when possible.	Pancreatic cancer, gastric cancer and colorectal liver metastases Strongly consider placing all newly diagnosed patients on systemic chemotherapy Strongly consider continuing systemic chemotherapy in all patients or monitoring only in low risk patients with liver metastasis.		*Pancreatic includes ampullary, duodenal and bile duct cancer. All cases should be reviewed at MCC and should be prioritized based on resource capacity at individual institutions. Prioritization should consider need for PPE, blood, ICU and ventilator and risk of complications that may require re-operative surgery and ICU and ventilator support.
GI: Neuro-endocrine (Based on SSO Advice)	• Symptomatic small bowel NETs (e.g., obstruction, bleeding/hemorrhage, significant pain, concern for ischemia) • Symptomatic and/or functional pancreatic NET that cannot be controlled medically • Lesions with significant growth or short doubling times		**Other Considerations:** • Cytoreductive operations and metastasectomy should generally be delayed but should be considered on an individual basis	

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
GI: Colorectal	Obstructing cancers (clinical symptoms + scope not passing or prestenotic dilatation on imaging) or perforated cancer Strongly consider resection for colon cancer and diverting stoma for rectal cancer Bleeding cancers – consider for systemic chemotherapy and radiation. Surgery only in rare circumstance of hemodynamic instability • Any rectal cancer completing neoadjuvant treatment; consider extending time between completion of neoadjvuant treatment and surgery; strongly consider diverting stoma to reduce risk of complications from anastomotic leak	Colon cancer Consider neoadjuvant chemotherapy for locally advanced cancers Rectal cancer Consider Total Neoadjuvant Therapy protocol for Stage I-III and delay surgery beyond 8 weeks after completion of neoadjuvant treatment HIPEC Consider continuing systemic chemotherapy if possible	• Stage 1 and 2 colon cancer	The safety of any aerosol generating surgical procedure including laparoscopic surgery must be considered and open surgery should be strongly considered when appropriate and feasible.

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	

Sarcoma	A primary high grade soft tissue or bone sarcoma without metastatic disease on staging where neoadjuvant treatment is not indicated is prioritized for the OR. A suspected high grade soft tissue or bone sarcoma who requires open biopsy for diagnosis should also be prioritized.	**Considerations**:
		• Defer the surgical treatment of newly diagnosed truncal/extremity well-differentiated liposarcoma/ALT and desmoids for at least 3 months or more. Reassess at that time.
		• Resection of other low-grade lesions with known indolent behavior (e.g., retroperitoneal well-differentiated liposarcoma) and low metastatic risk (e.g., myxoid liposarcoma, low grade-fibromyxoid tumor) can be deferred for short intervals depending on available resources.
		• Consider short interval deferral of re-excision for R1 margins in extremity/truncal lesions who have not already developed local recurrence if OR resources are limited.
		• If there is an indication for radiation therapy, plan to do it preoperatively. This can be administered in a lower risk outpatient setting and will defer the timing of surgery for about 3-4 months.
		• Use of neoadjuvant therapy for high grade sarcomas or recurrent disease can be considered if it can be safely delivered in an outpatient setting as a means of deferring surgical intervention.
		• Active observation protocols or low-toxicity systemic options can be considered for patients with recurrent disease. Surgery for recurrent disease can be offered to patients who:
		  ○ are likely to have relatively high chances of obtaining long-term disease control in the context of complete gross resection (e.g., long disease-free interval, solitary site of recurrence)
		  ○ require immediate palliation (e.,g., due to bleeding, obstruction), and
		  ○ who do not have indolent histologies (e.g., well-differentiated liposarcoma in the retroperitoneum) that can be managed with observation.		

Neuro-Oncology	• High-grade glioma or lymphoma based on imaging and clinical assessment • Brain metastases • Extra-axial lesion (e.g. meningioma) causing profound or progressive neurological symptoms (e.g. altered level of consciousness, aphasia, profound hemiparesis or hemiplegia) • Spinal tumour (primary or metastatic) causing profound or progressive neurological symptoms (e.g. loss of motor or sensory function, compromise of bowel or bladder function) or spinal instability • Sellar tumour (e.g. pituitary adenoma, craniopharyngioma) causing profound visual compromise or rapidly worsening visual function	• Progression of brain metastases following SRS/SRT with progression of symptoms or dependence on steroids • Extra-axial lesion (e.g. meningioma) causing mild or slowly progressive neurological symptoms (e.g. mild cognitive change, speech disturbance or hemiparesis) • Spinal tumour (primary or metastatic) causing mild neurological symptoms (e.g. mild compromise of motor or sensory function, INTACT bowel and bladder function) without spinal instability • Sellar tumour (e.g. pituitary adenoma, craniopharyngioma) causing mild visual compromise or slowly worsening visual function • Growing peripheral nerve sheath tumour in patient with NF-1 where there is clinical/pathological/radiological evidence of sarcomatous transformation	• Asymptomatic extra-axial lesion (e.g. meningioma) with slow growth on serial imaging • Asymptomatic spinal tumour (primary or metastatic) with slow growth on serial imaging • Asymptomatic sellar tumour (e.g. pituitary adenoma, craniopharyngioma) with slow growth on serial imaging	
Thoracic	• Stage I-III presumed small cell lung cancer where surgery/procedures needed for diagnosis • Mediastinal tumour with cardiovascular or tracheobronchial compression • Tumours with documented rapid growth rate suggesting new mediastinal or chest wall	• Lung cancer (not specified in priority A) unless documented slow growth • Thymoma, unless documented slow growth • Mesothelioma	• Lung cancer with documented slow growth or ground glass opacity • Carcinoid tumours • Benign tumours	

	Priority A	Priority B	Priority C	Further Considerations
Overall Description	***WTIS Priority Categories 1 and 2 and some Priority 3, emergent and very aggressive tumours.*** ***Patients in whom a delay in surgery would result in either an immediate threat to life or limb, or would significantly alter the patient's prognosis***	***WTIS Priority Category 3 and some Priority Category 4 tumours.*** ***Patients for whom a delay of <4 weeks from target would not be anticipated to impact significantly on survival or outcome***	***WTIS Priority Category 4, indolent tumours.*** ***Patients for whom a delay of 2 months would be unlikely to affect the outcome***	
	invasion within 14 days, or imminent intra-thoracic upstaging (e.g. close to bronchus) • Patients within a neoadjuvant treatment window where > 14 day delay in surgical treatment would significantly increase risk or decrease efficacy • Esophageal cancer with perforation	• Other mediastinal tumours (not specified in priority A) • Lung metastasis with typical growth rate • Germ cell tumours post chemotherapy • Most Esophageal cancer	• Lung metastasis with documented slow growth	