

Recommendations for head and neck surgical oncology practice in a setting of acute severe resource constraint during the COVID-19 pandemic

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HNCIG Modified Delphi Process

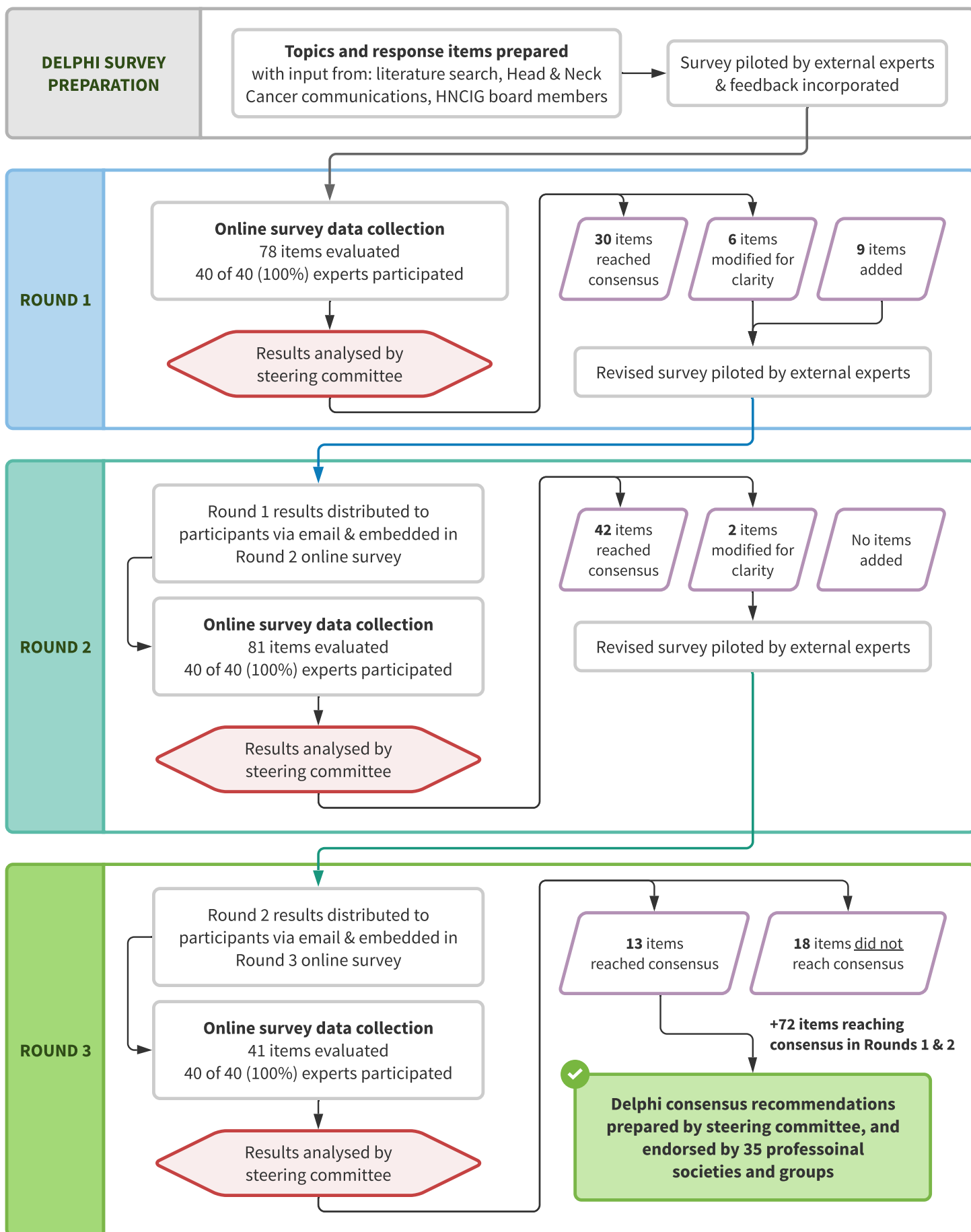


Table 1. Consensus recommendations for clinic procedures and treatment protocols in the context of an acute, severely constrained environment

| <i>Clinic and diagnostic procedures in the context of COVID-19 pandemic:</i> | |
|--|------------------|
| Performing flexible nasendoscopy in clinic for: | |
| For patients with symptoms or signs suggestive of a new primary cancer or recurrence: Perform an FNE only if adequate PPE is available. Do not perform FNE in absence of adequate PPE. | Strong agreement |
| For patients with concern for critical airway obstruction: Perform an FNE only if adequate PPE is available. Do not perform FNE in absence of adequate PPE. | Strong agreement |
| For asymptomatic patients with a previous history of head and neck cancer, attending clinic for routine follow-up: Do not perform FNE in absence of adequate PPE. | Strong agreement |
| For patients with no history of head and neck cancer and presenting with low risk symptoms (e.g., globus pharyngeus): Do not perform FNE. | Strong agreement |
| To confirm a diagnosis of HNC: | |
| Positive fine needle aspiration or core biopsy of a suspicious lymph node and suspicious imaging together are acceptable. | Strong agreement |
| Suspicious findings on imaging, whether CT, MRI, or PET-CT scans, alone without biopsy, are NOT acceptable. | Strong agreement |
| If a biopsy under LA can be performed, NO panendoscopy is needed. | Strong agreement |
| When biopsy under GA is needed, a full panendoscopy should be performed at the same time. | Agreement |
| Follow-up of head and neck cancer patients ≥3 months after surgery: | |
| Use video or phone consultations, with face-to-face reviews only if there are suspicious findings | Strong agreement |
| Use a combination of routine scheduled face-to-face and video/phone consultations | Agreement |
| Do NOT stop follow-up completely | Strong agreement |
| Maintain the normal frequency of follow-up | Agreement |
| Regarding the minimum criteria required for diagnosing a COVID-19 positive patient before HNC surgery: | |
| COVID-19 status must be taken into consideration before surgery | Strong agreement |

| | |
|--|------------------|
| Positive lab test alone is sufficient | Strong agreement |
| Positive clinical history and positive lab test together are sufficient | Agreement |
| Positive clinical history (including symptoms) alone is NOT sufficient. | Agreement |
| Positive chest imaging alone is NOT sufficient. | Strong agreement |
| Regarding delay of surgery in patients with confirmed or highly suspected of being COVID-19 positive, with no indication for emergency intervention | |
| Delay operation until patient symptoms resolve and negative on COVID-19 repeat lab testing | Strong agreement |
| <i>Treatment protocols in the context of acute, severe resource constraint:</i> | |
| For T1-2 N0 oral cancer: | |
| Operate within eight weeks from diagnosis. | Strong agreement |
| Do NOT delay surgery for up to 12 weeks from diagnosis. | Strong agreement |
| If surgery delay of 4–8 weeks is anticipated, do NOT treat immediately with alternative treatments such as RT. | Strong agreement |
| If surgery delay of 4–8 weeks is anticipated, perform serial monitoring, with surgery or alternative treatment, e. g. RT, only if tumour progresses significantly. | Strong agreement |
| If surgery delay of >8 weeks anticipated, perform serial monitoring, with surgery or alternative treatment, e. g. RT, only if tumour progresses significantly. | Agreement |
| If surgery delay of any duration is anticipated, do NOT treat with palliation as primary treatment. | Strong agreement |
| For early T1 N0 laryngeal cancer: | |
| Can delay surgery for more than 4 weeks, if necessary | Agreement |
| Do NOT delay surgery beyond 8 weeks | Strong agreement |
| Treat immediately with radiotherapy as an alternative to surgery | Agreement |
| If delay to surgery is anticipated to be 4–8 weeks, recommend RT immediately, instead of surgery. | Agreement |
| If delay to surgery is anticipated to be >8 weeks, recommend RT immediately, instead of surgery. | Strong agreement |
| Do NOT undertake serial monitoring, with treatment only if tumour progresses. | Agreement |

| | |
|--|------------------|
| Do NOT treat with palliation as primary treatment. | Strong agreement |
| In the setting of advanced treatable head and neck cancer: | |
| Do NOT delay surgery – operate within four weeks of diagnosis | Strong agreement |
| Do NOT undertake serial monitoring, or give palliation as only treatment | Strong agreement |
| Give alternative treatment (RT/CRT) immediately if surgery cannot occur within four weeks | Strong agreement |
| For differentiated thyroid cancer (T1–3, N0–1b) with no adverse features: | |
| Can delay surgery for up to 12 weeks from diagnosis, if necessary. | Strong agreement |
| Do NOT delay surgery for up to 18 weeks from diagnosis. | Agreement |
| If surgery is not possible within 12 weeks, undertake serial monitoring and only consider surgery if the tumour progresses significantly. | Strong agreement |
| If surgery is not possible within 12 weeks, do NOT treat with radioactive iodine or radiotherapy (96.8%) or palliative treatment (100%) as the primary treatment option. | Strong agreement |
| If surgery is delayed: | |
| Do serial monitoring to assess tumour progression whilst waiting | Strong agreement |
| Promptly re-evaluate treatment options if any evidence of tumour progression | Strong agreement |
| Actions to optimize resources and reduce risk to patients and staff: | |
| Only experienced surgeons should operate on patients | Strong agreement |
| Avoid a tracheostomy in an oropharyngeal cancer undergoing transoral surgery. | Strong agreement |
| Do NOT avoid primary free flap reconstruction in favour of delayed reconstruction at a later date | Strong agreement |
| Avoid primary free flap reconstruction and instead perform local or pedicled flap, if appropriate | Agreement |
| Do NOT avoid neck dissection or sentinel node biopsy in a radiologically N0 neck at risk of occult metastasis in a T1–2 or T3–4 oral or oropharyngeal cancer | Strong agreement |
| Do NOT avoid salvage surgery | Strong agreement |
| Do NOT avoid a tracheostomy in an advanced T2–3 oral cancer requiring free flap. | Agreement |
| Palliative care as primary treatment in the setting of system constraints | |

| | |
|---|------------------|
| Offer primary palliation to patients with poor functional status (e.g., spends >50% of the day in bed or ECOG Performance Status 3) who have advanced disease | Strong agreement |
| Offer primary palliation to patients with advanced biological age (e.g., >85 years) who have advanced stage disease | Strong agreement |
| | |

Table 2. Prioritisation of head and neck cancer surgical cases in the context of acute, severely constrained resources (mean ranking from highest priority at the top to lowest)

| Ranking* | Average aggregated scores (R1) | Average aggregated scores (R2) | Head and neck surgical scenarios |
|----------|--------------------------------|--------------------------------|--|
| 1 | 10.5 | 11.7 | T3 N2 oral cancer |
| 2 | 10.0 | 10.9 | T4 N1 laryngeal cancer |
| 3 | 8.8 | 9.8 | T4 N0 maxillary cancer |
| 4 | 8.0 | 8.7 | T4a N1 papillary thyroid cancer with tracheal invasion |
| 5 | 7.9 | 8.0 | T3 N1 carcinoma ex-pleomorphic parotid cancer |
| 6 | 6.9 | 6.9 | T1/2 N0 oral cancer |
| 7 | 6.7 | 6.1 | T2 N1 oropharyngeal cancer p16(-) |
| 8 | 4.6 | 4.8 | T2 N1 oropharyngeal cancer p16(+) |
| 9 | 4.2 | 3.8 | T0 N1 unknown primary |
| 10 | 4.1 | 3.5 | T2 N0 adenoid cystic oral cavity |
| 11 | 3.4 | 2.4 | T1 N0 laryngeal cancer |
| 12 | 3.1 | 1.4 | T2 N0 papillary thyroid cancer with a posterior nodule |

R1, first round; R2, second round

* Rankings did not change between the first and the second rounds, and hence question was not asked again in the third round.

Table 3. Top five factors considered important for prioritisation of Head and Neck cancer surgical cases in the context of acute, severely constrained resources (most commonly selected at the top)

| |
|---|
| Chance of progression with delay (risk to patient) |
| Patient COVID-19 status (risk to patients and staff) |
| Prognosis (risk to patient) |
| Availability of infrastructure to operate on COVID-19+ patients, including personal protective equipment and trained staff, etc. (risk to patients and staff) |

Effectiveness and availability of alternative treatments (risk to patient)

Appendix A: The participating national and international bodies and their representatives

HNCIG | Head & Neck Cancer Surgery During COVID-19

| Group or Society | Name of representative |
|---|---|
| African Head and Neck Society (AfHNS) | Johannes J. Fagan Anna Konney |
| American Society for Radiation Oncology (ASTRO) | Sue S. Yom |
| American Society of Clinical Oncology (ASCO) | Ravindra Uppaluri |
| Australian and New Zealand Head and Neck Cancer Society (ANZHNS) | Benedict J. Panizza |
| British Association of Head & Neck Oncologists (BAHNO) | Cyrus Kerawala |
| Canadian Cancer Trials Group (CCTG) | Anthony C. Nichols |
| Cancer Trials Ireland (CTI) | Paul Lennon |
| Danish Head and Neck Cancer Group (DAHANCA) | Christian Godballe |
| Dutch Head and Neck Society (NWHHT) | Robert P. Takes |
| Eastern Cooperative Oncology Group and The American College of Radiology Imaging Network (ECOG-ACRIN) | Mihir R. Patel |
| European Head and Neck Society (EHNS) | Wojciech Golusiński |
| European Organisation for Research and Treatment of Cancer (EORTC) | Christian Simon Lisa Licitra |
| European Society for Radiotherapy and Oncology (ESTRO) | David J. Thomson |
| French Head and Neck Cancer Group (GORTEC) | Haitham Mirghani |
| Fudan University Shanghai Cancer Center (FUSCC) | Yu Wang |
| German Interdisciplinary Working Group for Head and Neck Tumors (IAG-KHT) | Andreas Dietz |
| Head and Neck Cancer Society of Turkey (HNSCT) | Sefik Hosal |
| Head and Neck Cancer Study Group of the Japan Clinical Oncology Group (JCOG-HNCSG) | Akihiro Homma |
| Hellenic Cooperative Oncology Group (HeCOG) | Efthymios Kyrodimos |
| Hong Kong Nasopharyngeal Carcinoma Study Group (HKNPCSG) AND The Hong Kong Head and Neck Society (HKHNS) | Velda Ling Yu Chow |
| International Association of Oral Oncology (IAOO) | Moni A. Kuriakose |
| International Committee of the American Head and Neck Society (AHNS) | Jason Y K Chan C. René Leemans Dennis Kraus |
| International Federation of Head and Neck Oncological Societies (IFHNOS) AND Tata Medical Center | Pankaj Chaturvedi |
| Korean Society of Head and Neck Surgery (KSHNS) | Yoon Woo Koh |
| Latin American Clinical Oncology Group (LACOG) | Alvaro Sanabria Luiz P. Kowalski |
| National Cancer Center/Chinese Academy of Medical Sciences and Peking Union Medical College Cancer Hospital | Yi-ming Zhu |
| National Cancer Centre Singapore (NCCS) AND Head and Neck Cancer Society, Singapore (HNCS) | N. Gopalakrishna Iyer |
| National Cancer Research Institute-UK (NCRI) | Vinidh Paleri |
| North West Italian Oncology Group (GONO) | Cesare Piazza Lisa Licitra |
| NRG Oncology- Head and Neck Cancer Committee | Stephen Y. Lai |
| Spanish Head and Neck Cancer Cooperative Group (FETTCC) | Pablo Parente Arias |
| Taiwan Cooperative Oncology Group (TCOG) AND Taiwan Head and Neck Society (THNS) | Pei-Jen Lou |
| Trans-Tasman Radiation Oncology Group (TROG) | Bernard Lyons Danny Rischin |
| United Arab Emirates Otorhinolaryngological and Head and Neck Society | Mohammad AlFalasi |

Appendix B: Summary of the questions and results of all three rounds of the Delphi process for management of HNC during the COVID-19 pandemic.

HNCIG | Head & Neck Cancer Surgery During COVID-19

| QUESTIONS COLOR KEY | |
|---|--|
| Item dropped after Round 1 | |
| Item dropped after Round 2 | |
| Item reached agreement after Round 3 | |
| No agreement reached OR Question clarified in subsequent rounds | |

| RESULTS COLOR KEY | |
|--|--|
| ≥80% response (Strong agreement) | |
| 67–80% response (Agreement) | |
| 20–66% response (No Agreement) | |
| ≤20% response (Strong agreement against) | |

PART 1

Clinic protocols in the context of increased SARS-CoV-2 virus prevalence

| | 1st round | 2nd round | 3rd round | | |
|--|------------|-----------|-----------|-------|-------|
| Considering the prevalence of SARS-CoV-2 in the community.. | | | | | |
| Q1. Would you perform flexible nasoendoscopy in clinic: | | | | | |
| a. In an asymptomatic patient with previous head and neck cancer, attending clinic for routine head and neck cancer follow up: (Choose one) | | | | | |
| -FNE is appropriate only if using adequate personal protective equipment (PPE) | 25.0% | 40.0% | 40.0% | | |
| -FNE is not appropriate in these patients | 72.5% | 60.0% | 60.0% | | |
| -FNE is appropriate even without adequate PPE | 2.5% | 0.0% | | | |
| b. In a patient with symptoms or exam findings suggestive of new primary cancer or recurrence: (Choose one) | | | | | |
| -FNE is appropriate even without adequate PPE | 10.0% | 0.0% | | | |
| -FNE is appropriate only if using adequate PPE | 85.0% | 92.5% | | | |
| -FNE is not appropriate in these patients | 5.0% | 7.5% | | | |
| c. In a patient with no history of head and neck cancer and low risk symptoms (eg, globus): (Choose one) | | | | | |
| -FNE is appropriate only if using adequate PPE | | 27.5% | 20.0% | | |
| -FNE is not appropriate in these patients | | 72.5% | 80.0% | | |
| -FNE is appropriate even without adequate PPE | | 0.0% | | | |
| d. In a patient with concern for critical airway obstruction: (Choose one) | | | | | |
| -FNE is appropriate even without adequate PPE | 17.5% | 2.5% | | | |
| -FNE is appropriate only if using adequate PPE | 77.5% | 97.5% | | | |
| -FNE is not appropriate in these patients | 5.0% | 0.0% | | | |
| Q2. Which of the following would you use to confirm a diagnosis of cancer.. | | | | | |
| | Yes | No | | | |
| -Panendoscopy of primary tumour under general anesthesia and biopsy? | 55.0% | 45.0% | | | |
| -Biopsy of primary tumour under local anesthesia or general anesthesia without panendoscopy? | 62.5% | 37.5% | | | |
| -Fine needle aspiration or core biopsy of suspicious lymph node + suspicious findings on imaging? | 92.5% | 7.5% | | | |
| -Highly suspicious findings on CT or MRI only without biopsy ? | 20.0% | 80.0% | | | |
| -Highly suspicious findings on PET/CT only without biopsy? | 17.5% | 82.5% | | | |
| Q3. Considering the prevalence of SARS-CoV-2 in the community.. | | | | | |
| -A full panendoscopy should be performed at the time of biopsy of the primary tumour? | | 35.0% | 65.0% | | |
| -If the primary tumour can be biopsied under local anaesthetic, a full panendoscopy (including laryngoscopy, hypopharyngoscopy and upper oesophagoscopy) under general anaesthetic should still be arranged? | | 15.0% | 85.0% | | |
| -If the primary tumour requires a general anaesthetic for biopsy, then a full panendoscopy should still be performed at the same time? | | 67.5% | 32.5% | | |
| Q4. Surveillance practice for routine head and neck cancer patients, 3 months or more after surgery. | | | | | |
| Which of the following are acceptable methods of follow-up for these patients? | | | | | |
| a. How would you perform the follow-up for these patients? | | | | | |
| -Video or phone consultation only | 25.0% | 25.0% | 75.0% | 47.5% | 52.5% |
| -Combination of face to face and video/phone consultations | 57.5% | 75.0% | 25.0% | 70.0% | 30.0% |
| -Video or phone consultation, with face to face review only if suspicious findings | - | 80.0% | 20.0% | | |
| -Face to face follow-up | 17.5% | | | | |
| -No follow-up | 0.0% | | | | |
| b. How frequently would you perform the follow-up? | | | | | |
| -Normal frequency of follow-up | 55.0% | 62.5% | | 67.5% | |
| -Reduced frequency of follow-up | 45.0% | 37.5% | | 32.5% | |

| | |
|-----------------------------------|------|
| -Increased frequency of follow-up | 0.0% |
|-----------------------------------|------|

Q5. What minimum criteria do you use to identify ACTIVE SARS-CoV-2 infection before surgery?

| | % |
|--|-------|
| -Positive clinical history (including symptoms) alone | 7.5% |
| -Positive clinical history & positive imaging together | 5.0% |
| -Positive lab test alone | 15.0% |
| -Positive clinical history & positive lab test together | 27.5% |
| -Positive clinical history & positive lab test & positive imaging together | 10.0% |
| -Any one positive finding (clinical history, lab test, or chest imaging) | 32.5% |
| -Positive lab test & positive imaging | 2.5% |
| -Positive chest imaging only (eg, CT) | 0.0% |
| -We don't consider COVID-19 status before surgery | 0.0% |

| Yes | | No | |
|-------|-------|-------|-------|
| 40.0% | 60.0% | 30.0% | 70.0% |
| 52.5% | 47.5% | 57.5% | 42.5% |
| 80.0% | 20.0% | | |
| 72.5% | 27.5% | | |
| 52.5% | 47.5% | | |

Q6. What delay to the timing of the operation would you consider in a patient who is COVID+ or highly suspected of COVID+ and who does not have indications for emergency intervention (eg, no impending airway obstruction)? (Choose one)

| | % |
|---|-------|
| -When COVID-19 negative on repeat testing | 12.5% |
| -When symptoms resolve regardless of whether a repeat test is done or not | - |
| -When both symptoms resolve and COVID-19 negative on repeat testing | 67.5% |
| -No delay in surgery | 0.0% |
| -Delay until symptoms resolve | 5.0% |
| -Delay by 4 weeks | 10.0% |
| -Delay by 8 weeks | 2.5% |
| -Delay for longer than 8 weeks | 2.5% |

| % |
|-------|
| 5.0% |
| 0.0% |
| 95.0% |

PART 2

Treatment protocols in the context of increased SARS-CoV-2 virus prevalence

Q1. In the case of an early T1/2 N0 oral cancer:

| | 1st round | 2nd round | 3rd round |
|--|-----------|-----------|-----------|
| a. Acceptable delay to operate: | | | |
| -It is not acceptable to delay surgery - operate within 4 weeks from diagnosis | 50.0% | 47.5% | 52.5% |
| -It is acceptable to delay surgery for up to 8 weeks from diagnosis | 45.0% | 55.0% | 45.0% |
| -It is not acceptable to delay treatment – initiate alternative treatment (eg, RT) immediately, instead of surgery | - | 20.0% | 80.0% |
| -It is acceptable to delay surgery for up to 12 weeks from diagnosis | 5.0% | | |

b. If surgery is **NOT ANTICIPATED** to occur within the acceptable time frame above, you would:

| | Yes | No | Yes | No |
|---|-------|--------|-------|-------|
| -Initiate alternative treatment (eg, RT) immediately? | 40.0% | 60.0% | 32.5% | 67.5% |
| -Undertake serial monitoring, and only consider surgery or alternative therapies urgently if tumour progresses? | 60.0% | 40.0% | 77.5% | 22.5% |
| -Consider palliative treatment as only treatment? | 0.0% | 100.0% | | |

c. If a delay to surgery of **4-8 weeks** is anticipated, you would:

| | Yes | No |
|---|-------|-------|
| -Treat with primary RT immediately, instead of surgery? | 17.5% | 82.5% |
| -Undertake serial monitoring, and only consider surgery or alternative therapies urgently if tumour progresses significantly? | 87.5% | 12.5% |

d. If a delay to surgery of **more than 8 weeks** is anticipated, you would:

| | Yes | No |
|---|-------|-------|
| -Treat with primary RT immediately, instead of surgery? | 45.0% | 55.0% |
| -Undertake serial monitoring, and only consider surgery or alternative therapies urgently if tumour progresses significantly? | 67.5% | 32.5% |

Q2. In the case of an early T1N0 laryngeal cancer:

| | % | Yes | No |
|--|-------|-------|-------|
| a. Acceptable delay to operate: | | | |
| -It is not acceptable to delay treatment – initiate alternative treatment (eg, RT) immediately, instead of surgery | 52.5% | 70.0% | 30.0% |
| -It is not acceptable to delay surgery - operate within 4 weeks from diagnosis | 17.5% | 27.5% | 72.5% |
| -It is acceptable to delay surgery for up to 8 weeks from diagnosis | 22.5% | 47.5% | 52.5% |
| -It is acceptable to delay surgery for up to 12 weeks from diagnosis | 7.5% | | |

b. If surgery is **NOT ANTICIPATED** to occur within the acceptable time frame above, you would:

| | Yes | No | Yes | No |
|---|-------|--------|--------|-------|
| -Initiate alternative treatment (eg, RT) immediately? | 68.2% | 31.8% | 100.0% | 0.0% |
| -Undertake serial monitoring, and only consider surgery or alternative therapies urgently if tumour progresses? | 31.8% | 68.2% | 25.0% | 75.0% |
| -Consider palliative treatment as only treatment? | 0.0% | 100.0% | | |

c. If a delay to surgery of **4-8 weeks** is anticipated, would you treat with primary RT immediately, instead of surgery?

| Yes | No |
|-------|-------|
| 67.5% | 32.5% |
| Yes | No |

d. If a delay to surgery of **more than 8 weeks** is anticipated, would you treat with primary RT immediately, instead of surgery?

| | |
|-------|------|
| 92.5% | 7.5% |
|-------|------|

Q3. In the case of advanced head and neck cancer which will require prolonged operative time, prolonged hospital stay, and/or intensive care (eg, T4 N1 laryngeal cancer, T3N2b oral cancer, or a case requiring bone resection such as maxillectomy):

a. Acceptable delay to operate:

| | % | % |
|--|-------|-------|
| -It is not acceptable to delay surgery - operate within 4 weeks from diagnosis | 77.5% | 87.5% |
| -It is acceptable to delay surgery for up to 8 weeks from diagnosis | 17.5% | 12.5% |
| -It is acceptable to delay surgery for up to 12 weeks from diagnosis | 5.0% | |

b. If surgery is **NOT ANTICIPATED** to occur within the acceptable time frame above, you would:

| | Yes | No | Yes | No |
|---|-------|-------|-------|-------|
| -Initiate alternative treatment (eg, RT/CRT) immediately? | 53.4% | 46.6% | 90.0% | 10.0% |
| -Give induction (metronomic) chemotherapy until surgery is possible? | 29.3% | 70.7% | 50.0% | 50.0% |
| -Undertake serial monitoring, and only consider surgery or alternative therapies urgently if tumour progresses? | 13.8% | 86.2% | | |
| -Consider palliative treatment as only treatment? | 3.4% | 96.6% | | |

c. If a delay to surgery of **4-8 weeks** is anticipated, you would:

| | Yes | No |
|--|-------|-------|
| -Treat with primary RT/CRT instead of surgery? | 62.5% | 37.5% |
| -Give induction (metronomic) chemotherapy until surgery is possible? | 52.5% | 47.5% |

d. If a delay to surgery of **more than 8 weeks** is anticipated, you would:

| | Yes | No |
|--|-------|-------|
| -Treat with primary RT/CRT instead of surgery? | 82.5% | 17.5% |
| -Give induction (metronomic) chemotherapy until surgery is possible? | 45.0% | 55.0% |

Q4. In the case of differentiated thyroid cancer (T1-3, N0-1b) with no adverse features (no extension into strap muscles, trachea, or oesophageal musculature, no critical airway compression, and no imminent risk to, or involvement of, the recurrent laryngeal nerve):

a. Acceptable delay to operate:

| | % | Yes | No |
|---|-------|-------|-------|
| -It is acceptable to delay surgery for up to 12 weeks from diagnosis | 42.5% | 82.5% | 17.5% |
| -It is acceptable to delay surgery for up to 18 weeks from diagnosis | 15.0% | 30.0% | 70.0% |
| -It is acceptable to delay surgery for up to 24 weeks from diagnosis | 22.5% | 22.5% | 77.5% |
| -It is acceptable to delay surgery indefinitely (serial monitoring until progression) | 20.0% | 22.5% | 77.5% |

b. If surgery is **NOT ANTICIPATED** to occur within the acceptable time frame above, you would:

| | Yes | No |
|---|-------|--------|
| -Consider alternative treatment (eg radioiodine/RT) immediately? | 3.2% | 96.8% |
| -Consider palliative treatment as only treatment? | 0.0% | 100.0% |
| -Undertake serial monitoring, and only consider surgery if tumour progresses? | 96.8% | 3.2% |

Q5. In the case of T1-2 differentiated thyroid cancer <4cm, which of the following features should be considered as indication to operate within 4 weeks?

| | Yes | No | Yes | No | Yes | No |
|---|-------|-------|-------|-------|-------|-------|
| -Gross extrathyroidal extension invading only strap muscles | 32.5% | 67.5% | 37.5% | 62.5% | 15.0% | 85.0% |
| -Posterior nodule in the tracheoesophageal groove | 42.5% | 57.5% | 60.0% | 40.0% | 60.0% | 40.0% |
| -Nodules directly abutting the airway, but not invading it | 65.0% | 35.0% | 75.0% | 25.0% | 82.5% | 17.5% |
| -Regional lymph nodal metastases | 27.5% | 72.5% | 27.5% | 72.5% | 7.5% | 92.5% |

Q6. There are some procedures that result in higher risk of complications or prolonged hospital stay. These questions below try to strike a balance between maintaining standard of care versus delays or alterations in treatment. Thus, in these scenarios, would you consider the following:

| | Yes | No | Yes | No | Yes | No |
|---|-------|-------|-------|-------|-------|-------|
| -Accept a REDUCED level of post operative monitoring (eg, no intensive care bed or step down unit) than you would usually use for such a case (eg, for a free flap or a patient with significant morbidity)? | 62.5% | 37.5% | 70.0% | 30.0% | 65.0% | 35.0% |
| - AVOID a neck dissection or sentinel node biopsy in a radiologically N0 neck in a case of cutaneous melanoma? | 40.0% | 60.0% | 40.0% | 60.0% | 35.0% | 65.0% |
| -Do sentinel node biopsy instead of elective neck dissection for T1/2 oral cancer or melanoma? | 42.5% | 57.5% | 50.0% | 50.0% | 45.0% | 55.0% |
| - AVOID a tracheostomy in an advanced T2/3 oral cancer requiring free flap? | 35.0% | 65.0% | 32.5% | 67.5% | 25.0% | 75.0% |
| - AVOID primary free flap reconstruction and instead perform local or pedicled flap? | 62.5% | 37.5% | 70.0% | 30.0% | 72.5% | 27.5% |
| - AVOID a tracheostomy in an oropharyngeal cancer undergoing transoral surgery? | 70.0% | 30.0% | 87.5% | 12.5% | | |
| - AVOID primary free flap reconstruction and instead perform delayed reconstruction at a later date? | 27.5% | 72.5% | 20.0% | 80.0% | | |
| - AVOID salvage surgery? | 30.0% | 70.0% | 12.5% | 87.5% | | |
| - AVOID a neck dissection or sentinel node biopsy in a radiologically N0 neck at risk of occult metastasis in a T1-2 oral or oropharyngeal cancer (eg, T2 N0 oral cancer with 7 mm depth)? | 25.0% | 75.0% | 15.0% | 85.0% | | |
| -Only experienced senior surgeons to operate on patients? | 62.5% | 37.5% | 80.0% | 20.0% | | |
| - AVOID a neck dissection or sentinel node biopsy in a radiologically N0 neck in a T3-4 cancer oral or oropharyngeal cancer? | 7.5% | 92.5% | | | | |

Q7. When surgery is delayed due to resource constraints from the COVID-19 pandemic:

-Serial monitoring should be used to assess for tumour progression while awaiting definitive treatment?
 -Evidence of tumour progression should prompt re-evaluation of treatment options and/or re-prioritisation?

| Yes | No |
|--------|------|
| 92.5% | 7.5% |
| 100.0% | 0.0% |

Q8. In a severely constrained setting:

a. Would you change your indications for palliative care as the only treatment for a primary tumor?

| Yes | No | Yes | No |
|-------|-------|-------|-------|
| 45.0% | 55.0% | 47.5% | 52.5% |

b. What would be your indications for palliative care as the only treatment?

-Patients with low cure rate (eg, below 20% five year survival)?
 -Patients with advanced biological age (eg, >85 years) who have advanced stage disease?
 -Patients with poor functional status (e.g. spends >50% of the day in bed) or Performance Status 3?

| Yes | No | Yes | No |
|-------|-------|-------|-------|
| 55.0% | 45.0% | 60.0% | 40.0% |
| 77.5% | 22.5% | 92.5% | 7.5% |
| 82.5% | 17.5% | | |

PART 3

Patient prioritisation in the context of increased SARS-CoV-2 virus prevalence

| | 1st round | 2nd round | 3rd round |
|---|--------------------------------|--------------------------------|--------------------------------|
| Q1. How would you prioritise the following cases in terms of timing of operations- ie which would you operate on first ? | | | |
| | Rank (R1) | Rank (R2) | Rank (R3) |
| | Average aggregated scores (R1) | Average aggregated scores (R2) | Average aggregated scores (R3) |
| -T3 N2 oral cancer | 1 | 1 | 1 |
| -T4 N1 laryngeal cancer | 2 | 2 | 2 |
| -T4 N0 maxillary cancer | 3 | 3 | 3 |
| -T4a N1 papillary thyroid cancer with tracheal invasion | 4 | 4 | 4 |
| -T3 N1 carcinoma ex-pleomorphic parotid cancer | 5 | 5 | 5 |
| -T1/2 N0 oral cancer | 6 | 6 | 6 |
| -T2 N1 oropharyngeal cancer p16(-) | 7 | 7 | 7 |
| -T2 N1 oropharyngeal cancer p16(+) | 8 | 8 | 8 |
| -T0 N1 unknown primary | 9 | 9 | 9 |
| -T2 N0 adenoid cystic oral cavity | 10 | 10 | 10 |
| -T1 N0 laryngeal cancer | 11 | 11 | 11 |
| -T2 N0 papillary thyroid cancer with a posterior nodule | 12 | 12 | 12 |

Q2. In the first round, these were the most commonly selected factors affecting prioritisation of surgery in the setting of the COVID-19 pandemic. Please rank these factors according to your current preferences

-Chance of progression with delay (risk to patient)
 -Patient COVID-19 status (risk to patients and staff)
 -Prognosis (risk to patient)
 -Availability of infrastructure to operate on COVID-19+ patients, including personal protective equipment and trained staff, etc. (risk to patients and staff)
 -Effectiveness and availability of alternative treatments (risk to patient)
 -Intensive care bed availability (resource utilisation)
 -Severity of symptoms (patient experience)
 -Risk of inadvertent SARS-CoV-2 transmission (risk to staff)
 -Post-operative recovery time in hospital (resource utilisation)
 -Duration of operation (resource utilisation)

| | % chosen (R1) | Rank (R2) | Average aggregated scores (R2) |
|--|---------------|-----------|--------------------------------|
| -Chance of progression with delay (risk to patient) | 65.0 | 1 | 4.5 |
| -Patient COVID-19 status (risk to patients and staff) | 62.5 | 2 | 3.9 |
| -Prognosis (risk to patient) | 42.5 | 3 | 2.7 |
| -Availability of infrastructure to operate on COVID-19+ patients, including personal protective equipment and trained staff, etc. (risk to patients and staff) | 42.5 | 4 | 2.3 |
| -Effectiveness and availability of alternative treatments (risk to patient) | 32.5 | 5 | 1.6 |