



CORONAVIRUS: Update for the ENT Surgeon

Recommendations compiled by the University of Cape Town Division of Otolaryngology

NB: This is a dynamic document that continues to be updated as we receive feedback. The National & Western Cape Provincial COVID-19 Guidelines will be incorporated as they are released.

Recent information from high risk areas has shed new light onto the exposure of ENT surgeons and their patients during this outbreak.

We need to bear the following in mind:

- The specialists most likely to be infected are ENT surgeons
- ENT specialists “underestimated the risk that they subjected themselves to”. We should learn from this.
- The highest viral load is found in the nasal mucosa, followed by the nasopharynx and trachea.
- Patients are often asymptomatic, typically not presenting with rhinorrhea or blocked nose. There are reports of associated anosmia as the only symptom.
- The most common first symptom is a dry cough. Fever can be a late symptom.
- Children continue to be asymptomatic carriers.
- Transmission is airborne and through droplet spread – caution with aerosol generated procedures (AGP).
- Covid-19 tests have false negatives

NB: The information below is aimed at ENT Surgeons and their patients. Please continue to review updated general and medical COVID-19 resources.



ENT Workplace Guidance

- ENT specialists to provide only *time-sensitive* or *emergent* clinic-based and surgical care.
- *Time sensitivity* and *urgency* are determined by the individual specialists' judgement and must always take into account the individual patient's medical condition, socioeconomic circumstances, and needs.
- *Patients who are over 60 years, are hypertensive, diabetic or with any cardiovascular or chronic lung disease, are at VERY high risk for surgery and are unlikely to survive a COVID-19 infection post-operatively.*

Conserve critical resources

Patients with complex ENT problems need *healthy, uninfected, skilled ENT surgeons to be available*

- Look after the entire clinical team – nurses, registrars, fellows, consultants, admin
- **Engage with Hospital Management and Chief of Surgery / Heads of Divisions**
- Initiate strict measures to protect ENT divisions with already small staff numbers
- ENT surgeons in small divisions should not work outside their scope of practice and not in the frontline.
- Hospitals should therefore take all necessary steps to protect ENT surgeons from becoming infected, especially in small surgical divisions.
- Recommend: 14 days on & 14 days off ENT service where possible to self-quarantine and identify infected staff
- Ensure that all staff, including international trainees, have medical cover
- Provide a directive to protect kids/families of health workers (for example to self-quarantine in hotel rooms for free)

Use necessary Protective Gear sparingly

- There is a worldwide critical shortage of protective gear
- Therefore use e.g. N95 masks gloves, goggles, and gowns sparingly and appropriately
- When PPE is in short supply, respirators have been used for an extended period of time. This refers to wearing the same respirator while caring for multiple patients who have the same diagnosis without removing it, and evidence indicates that respirators maintain their protection when used for extended periods. NB: longer than 4 hours can lead to discomfort, and should be avoided (WHO guidelines).



Personal Protective Equipment (PPE)

- Ensure availability of complete Personal Protective Equipment (PPE) set that includes gloves, goggles, gowns.
- Get trained on how to don and doff
 1. https://player.vimeo.com/external/400607941.hd.mp4?s=af075e8c9647a23114424834c1e73f866a73e5f7&profile_id=174
 2. <https://drive.google.com/file/d/1q12sM026h8HgwHLdKjWrNzCMBwYE5aZP/view?usp=sharing>
- If COVID-19 positive *and the COVID-19 Protocol is activated*, it is (ideally) necessary to increase barrier to Powered Air-Purifying Respirator (PAPR).

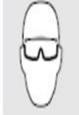
PUTTING ON PERSONAL PROTECTIVE EQUIPMENT			REMOVING PERSONAL PROTECTIVE EQUIPMENT		
1	PERFORM HAND HYGIENE		1	REMOVE GLOVES	
2	PUT ON GOWN		2	REMOVE GOWN	
3	PUT ON MASK OR N95 RESPIRATOR		3	PERFORM HAND HYGIENE	
4	PUT ON EYE PROTECTION		4	REMOVE EYE PROTECTION	
5	PUT ON GLOVES		5	REMOVE MASK OR N95 RESPIRATOR	
			6	PERFORM HAND HYGIENE	

Source: Ontario Public Health



Quick reference guide on how to put on and take off PPE for COVID-19

SELECT the correct PPE for the type of care provided or procedure performed

Direct care of patients with COVID-19 (Non-aerosol generating)	Aerosol-generating procedure on patients with COVID-19
<ul style="list-style-type: none"> ✓ non-sterile gloves ✓ apron ✓ eye shield or goggles ✓ surgical mask 	<ul style="list-style-type: none"> ✓ non-sterile gloves ✓ gown / apron ✓ eye shield or goggles ✓ N95 respirator
DONNING ORDER FOR PUTTING ON PPE	DOFFING ORDER FOR TAKING OFF PPE
<p>hand hygiene (soap or alcohol handrub)</p>  <p>put on apron or gown</p>  <p>put on surgical mask or N95 respirator</p>  <p>put on eye cover</p>  <p>put on non-sterile gloves</p> 	<p>hand hygiene (soap or alcohol handrub)</p>  <p>remove gloves</p>  <p>remove gown / apron</p>  <p>remove eye cover</p>  <p>remove N95 respirator</p>  <p>hand hygiene (soap or alcohol handrub)</p> 
<p>PERFORM HAND HYGIENE BETWEEN STEPS IF HANDS BECOME CONTAMINATED AND IMMEDIATELY AFTER REMOVING ALL PPE</p>	

26 March 2020



N95 Mask



Personal Protective Equipment (PPE): masks, gowns, goggles



Powered Air-Purifying Respirator (PAPR)





THE SOUTH AFRICAN REALTY



The PAPR is not available in South Africa and in African countries, and likely won't ever be.

The University of Cape Town / Groote Schuur Guidelines recommend the following for:

Consulting:

Wear theatre scrubs at work. Doff clothes safely before entering your home.

A) COVID-19 unknown

- ✦ Regular surgical mask, goggles / visor

A) COVID-19 positive

Patients will be in a dedicated COVID-19 positive ward, that includes

- ✦ N95 mask / goggles / visor
- ✦ Surgical gown and plastic apron
- ✦ Head and face shield
- ✦ Proper discarding of contaminated disposables

Ward rounds / ward work

B) COVID-19 unknown

- ✦ Minimise patient contact. Surgical mask, goggles / visor
- ✦ Avoid full ward rounds, folder discussion with consultant
- ✦ Surgical mask, goggles / visor
- ✦ For surgical airways (aerosolising patients): surgical gown and plastic apron, use head and face shield

C) COVID-19 positive

Patients will be in a dedicated COVID-19 positive ward, that includes

- ✦ N95 mask / goggles / visor
- ✦ Surgical gown and plastic apron
- ✦ Head and face shield
- ✦ Proper discarding of contaminated disposables

Surgery:

A) COVID-19 unknown:

- ✦ Airway surgery (tracheostomy / laryngoscopy, bronchoscopy / laryngectomy
 - ✦ N95 mask, goggles / visor
 - ✦ Head and face shield
 - ✦ Surgical gown and plastic apron
 - ✦ Plastic drape over patient's head and neck
 - ✦ Proper discarding of contaminated disposables
 - ✦ NB: Avoid Panendoscopy prior to primary cancer surgery



- ✦ Non-airway (cancers outside airway / neck sepsis / trauma)
 - ✦ Surgical mask, goggles / visor
 - ✦ Head and face shield
 - ✦ Surgical gown and plastic apron
 - ✦ Plastic drape over patient's head and neck – for intubation
 - ✦ Proper discarding of contaminated disposables

B) COVID-19 positive (all surgery)

- ✦ N95 mask, goggles / visor
- ✦ Head and face shield
- ✦ Surgical gown and plastic apron
- ✦ Plastic drape over patient's head and neck
- ✦ Proper discarding of contaminated disposables
- ✦ Covid-19 dedicated operating room
- ✦ Negative pressure operating room



PPE: consulting on airway cases with COVID-unknown





PPE: COVID unknown surgery

SOLUTION TO
N95 SHORTAGE DURING COVID-19

See full instructional video: 

The recent outbreak of the novel coronavirus responsible for the COVID-19 disease has created an unprecedented impact on nearly every industry across the globe. A shortage of personal protective equipment (PPE), especially for healthcare workers, is further contributing to the rapid spread and harm of this disease.

ALTERNATIVE TO N95 MASK
USING EXISTING HOSPITAL SUPPLIES

VENTILATOR FILTER
bacterial and viral filtering capacity 99.999+%

ANESTHESIA MASK

ELASTIC STRAPS

ADVANTAGES

- reusable
- easily cleaned
- <\$3
- fit tested
- standard hospital inventory
- conserves N95s



 Boston Children's Hospital  HARVARD MEDICAL SCHOOL TEACHING HOSPITAL  SURGICAL INNOVATION FELLOWSHIP

For more information and a complete disclaimer, please visit childrenshospital.org/surginnovation

How to make a mask with visor:

<https://drive.google.com/file/d/1XohH3250rGxcklbVaNjDueKlqepxDe7u/view?usp=drivesdk>

For more information about masks: <https://youtu.be/BoDwXwZxsDI>

Division of ENT Surgery, University of Cape Town | COVID-19 Recommendations for the ENT Surgeon



Workplace Guidance (continued)

- Cancelling of clinics / OPDs and seeing only urgent cases
- Cutting back on the surgical volume (*Appendix A*)
- Urgent vs Emergent cases

A) Clinic Operation

For planned Outpatient visits

- Aim to re-schedule all ambulatory visits
- Pre-visit screening via telephone call for booked patients
- Outpatients who come to hospital
- Entry way screeners, front desk screeners (outside the clinic space)
- Referrals via telephone / Video visits – preferably by consultant

For actual clinic visits

Waiting Room:

- Mark a red line on the floor in front of the reception desk to protect admin staff
- Insist on physical distancing in the waiting room (<5 people in a room with 2 metres between them). Position the chairs in advance
- Have hand sanitisers available (70% alcohol), fix to avoid theft
- Remove all reading literature & toys

Clinic assessment area:

- **Avoid flexible nasendoscopy in ALL cases. If necessary, requires full PPE, consider doing in a dedicated space / theatre setting (*see below*) in the event of a surgical intervention is required – biopsy / tracheostomy**
- **Transnasal or transoral procedures should be avoided in all circumstances.**
- Avoid instrumentation in the head and neck cavities and mucosa where possible
- Topical medications are more safely applied using pledgets than by spray
- Disinfect all equipment medical & non-medical (surfaces, chairs, pens)
- No use of room for 3 hours

Admissions

- Avoid where possible
- Isolation ward until COVID-19 test results
- Use PPE when reviewing / ward rounds (keep contact to minimum)
- NB: Universal precautions must always apply PPE must be worn, change with each patient. https://www.youtube.com/watch?v=kKz_vNGsNhc
- Doffing & disposing of PPE must be done according to universal precautions <https://www.youtube.com/watch?v=oUo5O1JmLH0>
- Reduce the number of medical staff
- No patient visits (family / friend)

Follow-up: recommend telephonic / video call



B) Surgery

- Immediately cut back on the surgical volume
- Reschedule elective and non-urgent admissions
- Delay inpatient and outpatient elective surgical and procedural cases
- Urgent vs Emergent cases (*Appendix A for list of surgeries & urgency*)
- Determine what is truly an emergency
- Review each case by divisional chief / consultant on call
- Be judicious in consideration with what is safe for patient & theatre staff
- Be careful not to miss everyday pathology that should be managed on an urgent basis - Quinsy, Cancers, TB, Other life-threatening infections
- Consider negative pressure theatre for high risk endoscopies
- Avoid jet-ventilation

KEY PROCEDURES AND SURGERIES PERFORMED BY ENT SURGEONS

****The acute stridor / airway obstructed patient****

- Clear guidance in managing these patients is necessary
- Location, equipment, skilled staff, post-procedural care
- Avoid nasal intubation and use cuffed tubes with manometry testing
- Given available evidence, we recommend a **dedicated COVID-19 theatre to be used by ENT / Thoracic Surgeons**
- This enables diagnostic and definitive management in 1 centralised space
- Laryngeal obstruction secondary to laryngeal carcinoma / Mycobacterium Tuberculosis (TB) larynx / foreign body airway / tracheal stenosis / Subglottic stenosis / papillomatosis /retropharyngeal abscess/parapharyngeal abscess/uncontrolled epistaxis →definitive care
- Tracheostomy where applicable - only once COVID-19 negative, keep intubated until then if possible. <https://onlinelibrary.wiley.com/doi/full/10.1097/00005537-200310000-00022>
- Reduced number of ICU beds mandates discussion of intubation outcome before proceeding for every case.
- Active multi-disciplinary consultation with Anaesthesia & ICU for every case
- Innovative measures to reduce aerosolising of secretions from the upper airways:
- During intubation, place the filter onto the end of the endotracheal tube (ETT)
- Also place the ETT through a clear drape to minimise secretions when looking directly at the glottis. Keep top lights off to avoid reflection, discard drape appropriately once tube inserted
- An LMA may be an option, but note that there may be more secretions
- Use CMAC / CMOS for more distance staff from patient
- www.sasaweb.com for more anaesthesia-related COVID-19 information



Images courtesy of Dr. James Lai @avecgas





KEY SURGERIES PERFORMED BY ENT SURGEONS

Tracheostomies:

- ENT Surgery will not do tracheostomies on COVID-19 positive patients.
- There is evidence to show that positive patients on ventilation, typically do not require prolonged ventilation. This typically carries a poorer outcome.
- Any patient requiring a tracheostomy must test negative (be cleared of virus).
- Testing to be performed by ICU team prior to consulting ENT Surgeons.

Endoscopic and skull base surgery

- To proceed with surgery, an adult patient must have 2 negative COVID-19 tests
- Caution: False negative rates known with current COVID-19 testing
- If COVID-19 status positive, and surgery emergent, wait 3-4 weeks before proceeding
- If COVID-19 status positive, surgery cannot wait, perform only with PAPR.
- In the absence of confirmed negative status, by 2 test more than 24 hours apart, patient should be treated as positive.

Epistaxis

- Do anterior rhinoscopy, no flexible nasendoscopy.
- Pack with rapid rhinos, keep for 48 hours.
- Discharge home within 24 hours after removing packs.
- Considering sending home with 1 rapid rhino in situ if hospital full / COVID patients in hospital. Patient to pull pack themselves after 72hrs & communicate with ENT surgeon telephonically.

Quinsy

- Review from a distance (assess trismus / use of +_ images by smartphone to corroborate, if accessible).
- Intra-venous antibiotics and avoid drainage, no topical spray.
- If drainage required, use needle aspiration. Patient to swallow local anaesthetic.

Acute complicated sinusitis

- External drainage only, frontal trephine
<https://vula.uct.ac.za/access/content/group/ba5fb1bd-be95-48e5-81be-586fbaeba29d/External%20ethmoidectomy%20and%20frontal%20trephine.pdf>
- AWO through anterior wall of maxillary sinus (canine fossa)- not transnasal
https://vula.uct.ac.za/access/content/group/ba5fb1bd-be95-48e5-81be-586fbaeba29d/Caldwell%20Luc%20radical%20antroostomy_%20procedure%20canine%20fossa%20and%20inferior%20meatal%20puncture%20and%20inferior%20meatal%20antroostomy.pdf
- Intra-venous antibiotics and topical decongestants

Acute complicated mastoiditis

- Drain abscess only (no drill, only curettage or hammer and gouge)
<https://vula.uct.ac.za/access/content/group/ba5fb1bd-be95-48e5-81be-586fbaeba29d/Hammer%20%20Gouge%20Mastoidectomy%20for%20acute%20mastoiditis-1.pdf>
- Intra-venous antibiotics



Obstructive Sleep Apnoea Syndrome

- Defer all cases except those already admitted in hospital
- Proceed with caution only for MOS 4 scores in children

Presumed Sinonasal cancer case

- CT scan first
- If biopsy required, COVID test first. Biopsy if test negative.
- If high risk factors present (over 60 years / Hypertensive / Diabetic / Cardiovascular disease), consider rebooking in 6-8wks depending on pandemic spread and developing guidelines.

Other ENT Resources:

- <https://www.entnet.org/content/coronavirus-disease-2019-resources>
- <https://www.entuk.org/categories/covid-19>

WHO COVID-19 Guidelines: https://apps.who.int/iris/bitstream/handle/10665/331215/WHO-2019-nCov-IPCPPE_use-2020.1-eng.pdf

Western Cape Provincial Guidelines:

<https://drive.google.com/open?id=1aIWGT6XxrwKZ65TGBdz3gvZLNhuoSfoi>

National Coronavirus Hotline: 0800 029 999

Coronavirus Western Cape Hotline: 021 9284102

Whatsapp: send "Hi" to 0600 123 456

UCT Updates: <https://www.news.uct.ac.za/campus/communications/updates/covid-19/>

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APPENDIX A: ENT SURGERY (ENT Surgery modifications added in last column)

<https://www.cms.gov/files/document/31820-cms-adult-elective-surgery-and-procedures-recommendations.pdf>

Tiers	Action	Definition	Locations	Examples	ENT Surgeries
1a	Postpone surgery / procedure	Low acuity surgery/healthy patient - outpatient surgery Not life-threatening illness	HOPD* ASC** Hospital with low/no COVID19 census	-Carpal tunnel release -EGD -Colonoscopy -Cataracts	-Sistrunk -Pre-auricular sinus -Tympanoplasty
1b	Postpone surgery / procedure	Low acuity surgery/healthy patient -	HOPD ASC Hospital with low/no COVID19 census	-Endoscopies	- MLBs -DLTBs - Tonsillectomy -Adenoidectomy -Grommets
2a	Consider postponing surgery / procedure if possible	Intermediate acuity surgery/healthy patient - Not life threatening but potential for future morbidity & mortality. Requires in-hospital stay	HOPD ASC Hospital with low/no COVID19 census	-Low Risk cancer -Non-urgent spine & Ortho: including hip, knee replacement & elective spine surgery -Stable ureteral colic -Elective angioplasty	- FESS -Sinus Surgery - Tympanomastoidectomy -Benign Laryngeal surgery
2b	Postpone surgery / procedure if possible	Intermediate acuity surgery/healthy patient -	HOPD ASC Hospital with low/no COVID19 census		-Angiofibromas -CSF leak
3a	Do not postpone	High acuity surgery/healthy patient -	HOPD ASC Hospital with low/no COVID19 census	-Most cancers - Highly symptomatic patients	-All head and neck cancers -Complicated Sinusitis / Mastoiditis -Uncontrolled Epistaxis -Acutely threatened airway -OSAS (MOS 4) in children
3b	Do not postpone	High acuity surgery/unhealthy patient	Hospital	-Transplant -Trauma -Cardiac w/symptoms - Limb threatening vascular surgery	-Above cases -All head & neck cancers -Refractory subglottic / tracheal stenosis -Retropharyngeal / Parapharyngeal abscess

#Do not postpone any refractory bleeding, ongoing sepsis or acute obstruction of the head & neck and airway #Where COVID-19 positive 3b, activate the COVID-19 Protocol