



IPOG COVID-19 REPORT

APRIL 14TH 2020

Dear Friends and Colleagues,

We would like to thank you again for your interest and participation in our COVID-19 initiative. Your efforts help to maintain the health and safety of patients and providers worldwide during this pandemic.

Our initial effort resulted in an unprecedented global collaboration, during which the initial survey distribution led to the production of a report in only five days. This can only reflect a close partnership between medical institutions and relays the sense of urgency this pandemic is creating. A total of 306 institutions from around the world responded (Africa 3, Asia 56, Australia/Oceania 8, Europe 58, USA and Canada 47, Latin America 134), of which many requested guidance for surgical patient management in the setting of COVID-19. Therefore, for this second phase of our initiative, we have chosen to collect and disseminate a compilation of resources and guidelines that are directly relevant to surgical indications/approaches and safety considerations both for patients and healthcare providers. We hope that these resources will help to address some of your questions and concerns.

We realize that the situation is constantly evolving. The information presented in this report may not satisfy everyone's needs and some protocols may be specific to institutions and/or regions. Additionally, due to the international nature of our collaboration and in an effort to reach as many practitioners in as many countries as possible, we have chosen to share some management protocols in their original languages (Spanish, French, and Portuguese). As always, we welcome any comments or suggestions regarding the content or timing of these reports.

Pending the feedback we receive, we will reach out to you again with updates and more data collection.

Thank you in advance for your contribution.

On behalf of IPOG (International Pediatric Otolaryngology Group)

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AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - ETHICAL DECISION-MAKING IN A COVID-19 PANDEMIC – SOME THOUGHTS

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Tuesday, April 14, 2020

An email yesterday from the President of ASPO, Anna Messner, notes that “the quickest way to instantly quadruple the number of emails, texts and meetings is to have a pandemic”. Despite that cogent observation, I offer these thoughts to you.

Ethical decision-making in a COVID-19 pandemic – some thoughts.

Four things are clear to me.

1. ethical and moral decisions will need to be made by paediatric otolaryngologists in the front line of providing emergency care to patients who are in need of that care.
2. These decisions will be re-played in our minds, and perhaps reviewed on a wider scale, and we may need help with that.
3. The first step in making a moral decision is to collect the facts. The facts about what PPE we need are unclear.
4. Yet we are called-upon to treat emergency patients. There is a body of evidence that the examinations and procedures that ORL-H&N Surgeons are involved in, places them at higher risk for serious infections.

Here I aim to offer some thoughts about how we might make ethically-good decisions. It offers a process, rather than providing solutions to the multiplicity of ethical and moral dilemmas ahead of us. References are included only for those who want to read further.

In ethical language, an act is *supererogatory* if it is good but not morally required to be done. It refers to an act that is more than is necessary, when another course of action—involving less—would still be an acceptable action. If you are at a rocky outcrop and you see a swimmer in difficulty, but you are not a strong swimmer, then you do not have a moral responsibility to dive in, imperiling your own life. Your moral duty is to contact a lifesaver. A lifesaver on duty, however, does have a clear duty to try to rescue the swimmer. If you are a strong swimmer, and do dive in to save them, then your act is supererogatory and the stuff of heroes.

Traditionally, in the Western world we approach ethical decision making by drawing upon three ethical frameworks. These are rule- or duty-based ethics, consequence- or outcome-based ethics, and virtue- based ethics. From these are distilled the traditional medical ethics principles of autonomy, beneficence, non-maleficence and justice.

Under a duty-based framework, rules (do not kill, do not steal, do not lie) exist before the Act (*a priori*) and personal moral integrity is paramount. As doctors on duty we have a responsibility to provide emergency care to patients in need, *regardless of the potential consequences*. For the vast majority of us, this is what we want to do. There is no doubt in my mind that if we knew we needed PPE and we all had it, we would simply save lives. The problem is we don't know what PPE is actually required, and we don't have enough of it.

Under an outcome-based framework, what is morally good depends upon whether it brings the best net consequences, that is for the majority. There is only one dialysis machine available in a hospital. Six patients need renal dialysis to stay alive—five patients need it daily but briefly but the sixth requires it for a whole day, precluding the use of the machine by the five. Under this framework, the five are chosen for dialysis over the one—who does not receive dialysis. When ventilator beds are limited by a world pandemic, it is permissible to triage in favour of younger age, stage of disease, and fewer co-morbidities which predict a lesser chance of survival, and perhaps health workers so they can get back into the fight (triage in war eg favours those less-injured so they can defend the perimeter).

There is no way that either a rule- or a consequence-based framework can be uniformly applied to all situations, independent to the *context* or actual situation of the ethical dilemma. As well, there exist a hierarchy of duties – some duties are of a higher order, are more important, than other duties. You do need to stop to help at an MVA even though you have promised to meet your hospital administrators about keeping your ward open. Some consequences too are of a higher order than others.

Consequences apply to both the child who requires emergency care, and to the treating doctors. For the child, the consequences of not-treating include the potential for death or worsened morbidity. The consequence of an on-call doctor not-treating include the likelihood that another colleague will be exposed to the risk. Arguably too, if a child has a post-T & A bleed, a consultant is much more likely to deftly examine the oropharynx looking straight to the tonsillar fossa to assess the situation. A junior casualty doctor, or a junior ENT registrar is less likely to be so deft, and hence at greater risk. The consequences of us catching the disease include our own morbidity or mortality, spread to our family, and not

providing treatment to other patients while we are off work. In theatre, our team will follow our lead, so a whole theatre team is at risk. This is the rationale for cessation of all elective operating, and for the provision of PPE to all the staff in the theatre (and allow only those who must be there).

Under a virtue-ethics framework, what is ethically permissible is that which a person of virtuous character would do. Not overly helpful, but Aristotle's golden mean is a point somewhere between excess and insufficiency – bravery or courage are between cowardice and reckless foolhardiness.

Pragmatically (and this is the important bit here), we can approach ethical decision-making by considering & evaluating what moral rules or duties may be operative in the situation, and what the consequences of the decision may be, and then find the balance or virtuous mean between duty based imperatives and outcome based consequences, in the particular situation. (Walker & Lovat, 2016b). The aim is to maximise the rightness/goodness (or minimize the wrongness/badness) in the situation. This may be a useful tool to help us make the best decision we can, and be able to justify it – both to ourselves, and to others.

We all have responsibilities to certain groups – including, but not limited to, ourselves, our patients, our colleagues, and our families. So it may be that an individual otolaryngologist will consider their duties to each of these groups, and then consider the consequences of their potential acts or decisions to each of these groups, aware of their own context of age, immunosuppression, young children at home, and find that the virtuous mean for them, is to cease working for three months. It is important for ourselves, and the groups we are part of, that we can articulate the reasons for this decision.

Finally, I offer a thought for those who are making decisions at a hospital departmental level. We live in a post-modern era, characterised by a plurality of values, and hence a profound moral pluralism within our communities. Therefore, we cannot unthinkingly inflict our own values to an ethical dilemma which involves others (the difference between our own ethical value set, and how we live together as a moral community) (Walker & Lovat, 2017). At a group or community level, I have argued that the approach of Dialogic Consensus (Walker & Lovat, 2016a, 2019) has moral authority in the situation at hand. Essentially, if a frank and open, inclusive, non-coercive and self-reflective dialogue which achieves a consensus amongst affected stakeholders is had, then the decision is action-guiding and is normative (has a sense of oughtness or shouldness about it). Importantly, individual members can disagree with the decision itself, but still agree that it is the best decision for the group. It may be possible for participants to accept a position which it is not reasonable for them to reject, and so reach consensus. That is, if your hospital committees have a dialogue characterised by inclusivity, allowing all arguments to be brought to the table, without coercion, and reach a consensual decision, then under the conceptions of dialogic consensus, the decision has moral force, and the group should act on it.

Importantly too, we must be aware that our decisions are being made under the pressure of time, without knowing all the facts, or being certain of all the potentially relevant duties and all the possible consequences. An awareness of the ethical frameworks which are duty-based or consequence-based, may be helpful in the approach to finding a proportionate balance between rules and consequences. Stated in the language of moral philosophy, this virtuous mean

(balance-point) is located between *a priori* imperatives (stand-alone things we must do) and empirical utility (real world best consequences) (Walker, 2019). Finally, while aiming to make the best or most right decision may be the ideal, making the least harmful decision in bad situations may be our reality in the times ahead.

Walker, P. (2019). Police ethical decision making. *Australian Police Journal, Sep 2019*, 132-135.

Walker, P., & Lovat, T. (2016a). Dialogic consensus in clinical decision-making. *Journal of Bioethical Inquiry, 13*(4), 571-580. doi:10.1007/s11673-016-9743-z

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AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - INTRANASAL/SINUS SURGERY: (ADAPTED EXTRA PRECAUTIONS DURING COVID PANDEMIC)

CONTRIBUTOR: PAUL WALKER MD

In addition to Standard Set-up and standard covid theatre precautions:

- Equipment:
 - Plastic Cover for the Keyboard and Mouse
 - Microlaryngoscopy (Perspex) Table (Large)
 - Drape Bar x1 with Clamp x 1 (H/A extra bar & Clamp)
 - Head light adaptor to fit Visor Mask
 - ORL Suction Carousel x2 with only 2 x liners in each
 - x1 for Negative Pressure Vacuum under the clear drape
 - x1 for Nasopharynx Suctioning
- Sterile Supplies:
 - C-Armor Drape x1 (M112537) Ref: 5523
 - Universal Split Pack (M72623) Ref: MD-TB29132CE
 - Drape towels x2 packets (M11175) Ref: MD-TB7554CE
 - Drape tape x3 packets (M124707) Ref: MD-3550CEA
 - Suction Tubing 7mm x1 (M70950) Ref: MEJ063
 - 50ml Catheter Tip Syringe x1 (M12244) Ref: SYR146
 - 20ml Slip Tip Syringe x1 (M12218) Ref: SYR132
 - Ryles Tube Fr 6
 - Towel Clips
 - ½ Strength Povidone Iodine for Prepping

Preparation (after airway secured):

Drape the large Perspex suspension table using the Mayo cover. Secure with drape tape underneath to keep taut. Rolled end of “excess” drape at head of bed





Move the patient down the bed to allow space for the draped microlaryngoscopy table to be positioned just overlapping the patient's head (to be used as a table under the C-Armor drape for the surgeon to place instruments). Drape patient with U drape first, then place microlaryngoscopy table



Attach 2x Drape Bars with clamps on LEFT side of patient (see picture for heights)

Apply the C-Armor Drape to create a tent over the patient's head and upper body. The metal strip in the drape is positioned over bar towards patient's head. Remove stickies at the foot end and roll up drape to shorten end slightly. Secure drape edges to the bed using drape tape at the head and along the left side of the patient.

Position endoscopy screen at head of bed

Maintain closure around edges of drape as much as possible throughout procedure

Aim to minimise passing of instruments under drape by using table

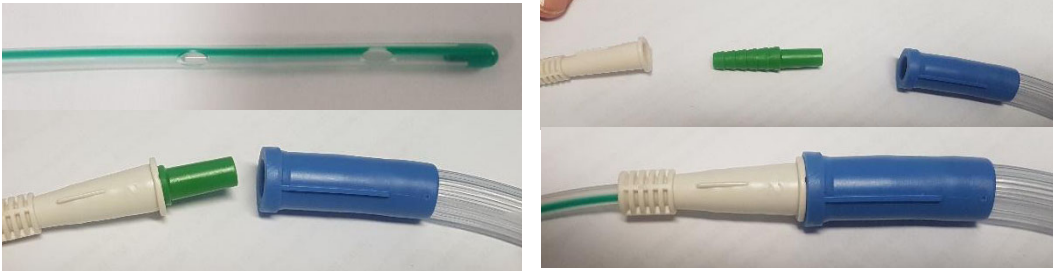


Once drapes in situ, instil 0.5% (5 mg/ml) Povidone Iodine using prefilled:

60ml Catheter Tip Syringe for oropharynx

20ml Slip Tip Syringe for nares

If possible, place Ryles Tube Fr 10/12/14 through the nose for closed suctioning of the nasopharynx throughout the surgery. If not able to pass through nose, consider placing and securing trans orally with open end positioned to sit in pharynx



AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - POWERED AIR-PURIFYING RESPIRATOR (PAPR) USE DURING THE SARS-COV-2 PANDEMIC

CONTRIBUTOR: PAUL WALKER MD

POWH OHNS Department (2020)



The Prince of Wales Hospital & Community Health Service

Powered Air-Purifying Respirator (PAPR) use during the SARS-CoV-2 Pandemic

The 3M Versaflo TPR 300+ PAPRs with a M-107 soft face mask helmet have an assigned protection factor (APF) of 50- meaning exposure to only 1/50 of airborne contaminant present, comparatively- N95 masks have an APF of 10. The 3M M-107 Helmets are comfortable, don't fog during use, provide optimal eye/face protection and allow you to wear glasses comfortably. However, given the APF is 50- it is suggested that you concurrently utilise an N95 mask to increase filtration.

To mitigate the risk of theft or loss and to ensure accountability and availability, there will be a 'sign-out/sign-in' logbook process for each unit. All PAPRs will be stored in a secure/accessible location within the theatre complex and there will always be a Senior Member of Theatre staff onsite to enable access.

The cleaning process is important- to reduce the risk of persistent contamination with the wipe down procedure described by the company and to reassure the next user that the unit has been decontaminated appropriately- **CSSD will decontaminate the Helmet/tubing component of the Unit.** CSSD will return the decontaminated units to the **in-charge nurse** who will ensure that all units are reassembled, returned to storeroom and signed in ready for use.

As the operator you will be required to wipe down your Filtration Unit, ensuring that returns to the storage area so that you can be 'signed-in'. The In-charge nurse will ensure that all the used filtration units are returned to the storage room at case conclusion.

This is new equipment which has been fast-tracked to use and we expect there to be issues in its implementation- please keep this in mind. If you identify ways to improve its safety and efficacy, please notify Dr Ian Jacobson or Annemarie Daly so that the protocol can be optimized- your input is greatly appreciated.

Protocol

Donning (with 'buddy'- another member of scrub team)	Doffing (with 'runner'- support team member)
<ol style="list-style-type: none"> 1) Apply N95 mask 2) 'Sign out' PAPR unit using the tracking number on each unit 3) Check PAPR Helmet for tears, degradation, intact seals (if any concerns- do not use, request another) 4) Test PAPR Filtration Unit: switch on- allow unit to run test sequence, attach airflow indicator and ensure 'ball' reaches the 'top' of the airflow indicator. Leave Filtration Unit on. 5) Connect tubing to Helmet and Filtration Unit 6) Apply Shoe covers (over non-absorbent shoes) 7) Hand hygiene 8) Apply balaclava- tied at back with bow (to ensure ease of removal) 9) Hand hygiene 10) Apply PAPR belt (positioning Filtration Unit on your back) 11) Apply PAPR helmet (with hose already attached) onto head. Tighten head strap to fit and bring visor and soft face shroud down. Elastic component of shroud should sit just in front of ears and completely cover your jaw- abutting your neck anteriorly (buddy to ensure skin around face is covered) 12) Connect PAPR hoses to filtration unit 13) PPE as per role <ul style="list-style-type: none"> • Operative Team: will move to scrub area and complete donning process by scrubbing and applying sterile gown and gloves • Support Team: will remain in donning area and complete donning with surgical gown, hand wash and gloves 	<ol style="list-style-type: none"> 1) Move to the 'dirty doffing' area 2) Remove shoe covers with contaminated surgical gloves 3) Undo surgical gown on side and remove by 'pulling' from the front- ensuring you take off gown and gloves together 4) Hand Hygiene (wear blue nitrile gloves if required) 5) Runner will disconnect hoses where it connects into the PAPR Filtration Unit 6) Wearer will remove helmet and tubing (lifting back 'up and forward' and ensuring tubing isn't dragged across face or surgical scrubs). 7) Place Helmet and tubing into clear bag in tub provided and seal for CSSD to collect. 8) Hand Hygiene 9) Disconnect belt latch with 'runner' holding Filtration Unit (they will remove and place on cleaning bench) 10) Hand Hygiene 11) Undo balaclava- Bring ties to front and hold with one hand ensuring the scrubs are not contaminated. Using free hand, remove balaclava from crown, leaning forward and placing balaclava into the bin 12) Hand Hygiene 13) Wear blue nitrile gloves and wipe down Filtration unit and pass to runner to return to storeroom. 14) Ensure the battery is placed on charge in prosthesis room. 15) Hand Hygiene with soap and water 16) Remove N95 mask after leaving the 'dirty doffing' area 17) Proceed to Shower (especially given the nape of your neck remains exposed during the case) and change into new scrubs

**Aids:**

- A video and photos of equipment/protocol will be provided to all members of the team
- Seat (**Labelled Dirty**) will be provided in doffing area: *to help with removal of shoe covers (while wearing dirty sterile gown)*

Other Issues:Battery Failure:

- *In the unlikely event the battery pack fails (rated for 10-12 hours post charge), please notify the team (an alarm will sound with 15-minutes remaining). A team member will source a new battery and replace. Battery change takes less than 15-seconds.*

Contamination:

- *If you believe your unit is contaminated- **do not use**. Request another unit. If the theatre 'runner' is available, they will complete the cleaning process for the unit when otherwise not required.*

Suggestions for Surgical Practice

- **Pre-operative 'Huddle':**
 - *As per POWH OT guideline- occurs in the PPE area before patient is 'called for'*
- **Verbal communication is difficult:**
 - *We suggest limiting theatre numbers to the minimum required to complete case*
 - *No extraneous noise or non-essential staff communication*
 - *An 'attention' statement/gesture: i.e.: Team member raises their arm in the air and states 'Stop'. All team members must then pay attention to that member of the team.*
 - *If available, we suggest a blue-tooth system connecting the operative team*
- **Operating:**
 - *'Head-knocking'- happens easily in PAPR units*
 - *If impermeable 'overalls with a hood' are available- this is optimal and can be integrated into the PPE 'Donning/Doffing' protocol for reduced exposure*
- **Magnification:**
 - *'In lens' loupes fit within the helmet*

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AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - RIGID BRONCHOSCOPY (WITH ADAPTED EXTRA PRECAUTIONS DURING COVID PANDEMIC)

CONTRIBUTOR: PAUL WALKER MD

Background:

- The airway (particularly nose, sinuses & pharynx) is known to carry a high viral load
- ENT procedures on the airway are at high risk of aerosolising virus (open airway throughout)
- Extra precautions need to take place to minimise risk to theatre staff involved in these procedures

Considerations:

- The minimum number of staff that are required to perform the case will be present:
 - surgeon (x2), anaesthetist (x2), anaesthetic technician (1), nurses (x2) in theatre
 - runners & HCA for outside theatre
- Use of the red bell should be avoided to prevent staff entering without appropriate PPE
- Hearing is impaired by helmet visors etc → Closed loop communication is needed
→ Avoid unnecessary noise throughout case

Equipment (in addition to standard set up):

- Plastic Cover for the Keyboard and Mouse
- Foot-Controlled Stools x2 (Green chair not to be used)
- Microlaryngoscopy (Perspex) Table (Large)
- Drape Pole with clamp on anaesthetic side of table
- ORL Suction Carousel x2 (with only liners for suction being used in each)
 - x1 at foot of bed, tubing passed under the clear drape along patient's left side with open end near patient's head, to be placed on continuous suction as soon as drape in place
 - x1 for the Rigid Suction and flexible suction (in Ventilating Bronchoscope) to be placed at the top end. Plastic bag to be secured with towel clip on the canister for the dirty suction tubing/rigid suction post procedure.
- Extra sterile Supplies:
 - C-Armor Drape x1 (M112537) Ref: 5523
 - Drape tape x2 packets (M124707) Ref: MD-3550CEA
 - Suction Tubing 7mm x1 (M70950) Ref: MEJ063
 - Towel Clips

Process:

Step 1: Procedure booking & general patient movement & planning

- As per COVID guidelines

Step 2: Checklist – theatre prep & equipment

- General preparation as per COVID Theatre guidelines

- Surgeon to outline any other equipment they anticipate needing, including preferences for head ring, shoulder roll, preferred laryngoscope blade etc
- Set up extra suction – 4 in total (1 anaesthetic, 2 surgical, 1 under drape)
- Plastic rubbish bag to be placed on surgical suction (suction that sits behind surgeon) for suction catheter to be placed into during the case once contaminated.
- Stick on name labels for all staff ready to place on gowns once PPE put on
- When all of team are ready, lead surgeon to run full brief of case with all theatre staff involved in case to be present (prior to patient being brought into theatre and before donning PPE)

Step 3: In theatre: Induction and draping (see photos for illustration)

- All team in PPE prior to patient being brought in
Patient anaesthetised and face mask secured by lead anaesthetist and held in place throughout set up
- Patient sats monitor, ECG leads, BP cuff etc placed by anaesthetic tech and 2nd anaesthetist
- The large plastic suspension table to be placed over the patient’s lower chest/upper abdomen and the anaesthetic cross bar suspended across the patient’s upper chest. Suction tubing placed alongside patient on L side. Open end of suction tip position to be secured with a towel clip with suction running continuously throughout procedure
- A large clear drape (C-ARMOR drape) is placed over the patient, plastic box, cross bar and anaesthetist’s arms. The end with the metal strip is at the patient’s head. Ensure the drape is central (elastic on each side is evenly positioned). The metal strip on the drape is placed along the top of the cross bar and secured with a strip of drape tape by a small tuck of the plastic around each end of the bar. The end of the plastic drape at the patient’s feet is taped along its full width to the bed (if infant) or across the patient’s body (if larger patient) to “seal” end. Tuck plastic under to shorten if appropriate. Along the sides, use drape tape to secure the plastic drape to the operating table in several places. On the anaesthetist’s side, this will be loosened to gain access to patient from side of bed and re-secured each time asap after access. Extra drape tape is given to the anaesthetic technician to reinforce the drape as needed.
- If no IV access, second anaesthetist is to secure IV access. Foot access may be more easily accessible with box & drape in place
- Team check drape around patient as secure as possible and continue checks throughout procedure. Responsibility for optimal drape closure:

Nursing team	Patient’s foot of bed & right side
Anaesthetic team	Patient’s left side
	Around Lead Anaesthetist’s arms when holding mask
ORL second surgeon	Around Lead surgeon’s arms during bronchoscopy

Step 4: Team Pause

- Time out – staff outside room to hold consent to window from outside
- Check everyone ready to proceed to next step

Step 5: Rigid Bronchoscopy

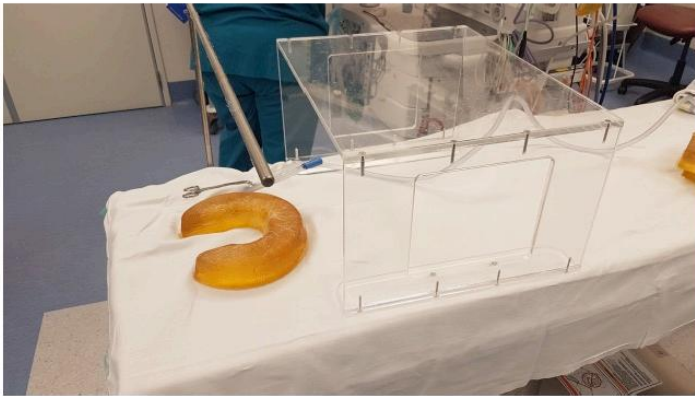
- Anaesthetic technician places tray to left of patient’s head (under drape), hands anaesthetist the laryngoscope and local anaesthetic.

- Drape lifted briefly from anaesthetist's arms, Anaesthetist sprays cords, mask repositioned
- Laryngoscope is placed to the right of the patient's head, ready for surgeon to use.
- Anaesthetist moves to the patient's left side whilst maintaining mask seal and Lead surgeon sits ready in surgical position at head of table.
- When ready to hand over airway, anaesthetist removes mask from patient's face, and places face mask on tray to the left of patient's head.
- Surgeon positions laryngoscope and takes bronchoscope into right hand. Video capture commenced and to run throughout procedure. Anaesthetist attaches circuit to the rigid bronchoscope. Bronchoscope passed through larynx into trachea asap. Assistant surgeon attaches flexible suction and maintains drape closure around surgeon's arms as best as possible.
- Anaesthetic technician to assist the lead anaesthetist. Second Anaesthetist to help manage the anaesthetic.
- At completion of bronchoscopy, the surgeon pauses prior to removing bronchoscope to ensure anaesthetic team ready. As surgeon removes the bronchoscope, the anaesthetist detaches the circuit, reconnects the anaesthetic mask and as quickly as possible re-establishes a seal of the mask over the patient's airway. The suction is detached from the bronchoscope and free end placed in a plastic bag on suction console (in case still needed).
- The patient is then woken. Once the anaesthetist is happy the anaesthetic mask is exchanged for a Hudson mask. Patient can be placed on side (still under drape at this stage, so if coughing is still "contained").
- Once lead anaesthetist is happy to remove drape, the drape tape is removed and each corner of the drape to be held by a team member (not the lead anaesthetist). Drape to be slowly removed by rolling the under-surface inwards (under), to reduce contamination and aerosolising of virus on it's under surface into room.
- Everyone stays in the room in full PPE until at least 10 minutes has passed.
- When lead Anaesthetist is happy the airway is stable, standard procedures to commence for team doffing etc

Step 6: Team Debrief

- Team debriefing at the end of the case (after all have completed doffing process) to identify challenges and possible solutions, aiming to refine and improve the above process.
- Protocol to be amended as appropriate

Set up of suspension table, bar & suction: (placed after patient induction)



Large plastic suspension table

Anaesthetic bar

Open suction with towel clip

Securing of drape (whilst face mask held on patient)



C arm drape: metal strip aligned over bar at head of bed

(NB secure with drape tape not towel clip)

Securing of drape (drape tape sides and end of bed)



Securing of drape (drape tape sides and end of bed)



Rigid bronchoscope in situ



Transfer to hudson mask (remain under drape)



Careful slow removal of drape

Rolling inwards and under (dirty side in)

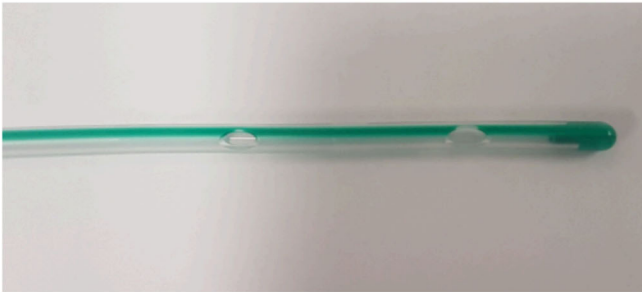


AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - SET UP OF SUCTION FOR NASOPHARYNX

CONTRIBUTOR: PAUL WALKER MD

Set up of suction for nasopharynx

(to run on continuous suction to evacuate aerosol during any nasal/sinus/pharyngeal/oral surgical cases)



Select appropriate sized Ryles catheter:

10, 12,14 French available

For placement via nose to sit in nasopharynx (consider placing via mouth if unsuitable for transnasal placement)



Components:

Ryles suction

Connector (in packet with Ryles tube)

Standard suction tubing



Stepped end of connector goes into Ryles catheter



Other end goes into blue suction

Check secure

Diluted betadine to be instilled in nose prior to passing Ryles tube

AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - USE OF TOPICAL IODINE FOR PREPARATION OF NOSE & OROPHARYNGEAL MUCOSA

CONTRIBUTOR: PAUL WALKER MD

(to reduce viral load prior to emergency ORL surgical procedures)



Half strength = 5%

Dilute to 0.5% by using 1:10 ratio



20 ml syringe:

2ml iodine + 20ml saline
(for nose)

60 ml syringe:

5ml iodine + 50 ml saline
(for oral cavity/oropharynx)

AUSTRALIAN NEW ZEALAND SOCIETY OF PEDIATRIC OTOLARYNGOLOGY (ANZSPO) - TRACHEOSTOMY (ADAPTED EXTRA PRECAUTIONS DURING COVID PANDEMIC)

CONTRIBUTOR: PAUL WALKER MD

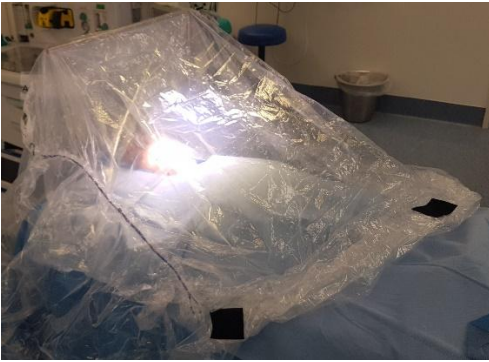
In addition to Standard Set-up:

- Equipment:
 - Plastic Cover for the Keyboard and Mouse
 - Drape Bar x1 with Clamp x1
 - Head light adaptor to fit Visor Mask
 - ORL Suction Carousel x2 with only 2 x liners in each
 - x1 for Negative Pressure Vacuum under the clear drape
 - x1 for Suctioning
- Sterile Supplies:
 - C-Armor Drape x1 (M112537) Ref: 5523
 - Universal Split Pack (M72623) Ref: MD-TB29132CE
 - Drape towels x2 packets (M11175) Ref: MD-TB7554CE
 - Fluoroscopy Drape 1012 x1 (M107655) Ref: 70200417882
(*placed over the top of the Drape Bar)
 - Drape tape x2 packets (M124707) Ref: MD-3550CEA
 - Suction Tubing 7mm x1 (M70950) Ref: MEJ063
 - Towel Clips
 - Cuffed Endotracheal Tube (Appropriate size for age) – Ready and available
 - Tracheostomy Tube (Appropriate size for age) – Ready and available

The following is suggested in addition to routine covid theatre protocols and precautions



Once airway secure: Neck marked & local injected
Drape bar secured at head of bed
Patient draping as per standard technique.
Clear drape at head goes over bar
Standard surgical technique up to point for incising trachea



Sterile C-Arm drape placed over patient. Drape end at foot of bed has tape strip removed and can be rolled to shorten (as shown in picture). Top and sides of drape secured with drape tape to enclose as possible when access not needed

Place open suction under drape on continuous suction, secure with towel clip



Have trachy tube, cuffed endotracheal tube and end of sterile circuit ready under drape.

Surgeon and surgical assistant have access with arms under drape

Stay sutures placed

Tracheal incision performed then either:

- The in situ cuffed endotracheal tube advanced past opening by anaesthetist or
- Cuffed endotracheal tube placed via stoma

Inferior maturation sutures placed

Tracheostomy tube placed & held by surgeon.

Oral/nasal ETT removed

Wait for appropriate time for aerosol to settle

C-armor drape removal & other drapes removed

Trachy tapes placed to secure position

BAMBINO GESÙ CHILDREN'S HOSPITAL

ENT SURGICAL ACTIVITY

CONTRIBUTORS: SERGIO BOTTERO MD, MARILENA TROZZI MD, DUINO MEUCCI MD

Indication during COVID-19 pandemic

- Emergency and urgent surgery
- Elective non-deferrable surgical procedures, with life or permanent organ damage risk.

OTOSURGERY

- Acute complicated otomastoiditis with surgical indication
- Cholesteatomatous complicated otitis media
- Cochlear implant in patient with risk of cochlear ossification (i.e. hearing loss after meningitis)

NASAL AND SINUS SURGERY

- Acute complicated sinusitis with surgical indication
- Bilateral choanal atresia
- Nasal foreign body

ADENOTONSILLECTOMY

- Severe OSAS
- Histological exam (suspected lymphoproliferative disease)

AIRWAY SURGERY

- Diagnostic airway endoscopy for severe respiratory problems
- Treatment of severe laryngeal and tracheal obstructive diseases
- Inhalation of foreign body

We have increased the use of Digital Flexible Single-Use Bronchoscope

NECK SURGERY

- Neck abscess
- Lymph node biopsy

EVERY ONCOLOGICAL DISEASES (HOWEVER RARE IN PEDIATRIC PATIENTS)

HOSPITAL MAIN INDICATIONS

- Bambino Gesù Children's Hospital is in the list of Italian Covid center.

- Among the 4 different hospital locations, one (Palidoro) is dedicated to the management and treatment of patients with suspected or confirmed SARS-CoV-2 infection.
- It's important to avoid the movement of patients and staff between the hospital locations.
- The patients with symptoms indicative of possible SARS-CoV-2 infection have a dedicated Triage and Emergency Room.
- The laboratory is open 24h for the analysis of Covid swabs in 2 hours.

Before surgery

- Telephone screening for planned admissions.
- Screening for each access to the hospital (body temperature detection and a specific survey)
- Swab for SARS-Cov-2 before surgery for every patient.
- When the test can't be performed, consider the patient as positive.
- The patient wears a surgical mask, if not intubated.
- If programmable, perform the procedures of positive patients as last in the list.

Operating room

- Room with mechanical ventilation that ensures air exchange or possibly a negative pressure room.
- If possible dedicate an operating room for COVID+ patients
- Minimize room staff (no more than two surgeons) and surgical times (expert surgeons can guarantee fast and effective surgery).
- During intubation and extubation, and in the following 20 minutes, non-essential staff (including surgeons) should remain outside the operating room
- If possible avoid: debriders, drills, powered instruments, electrocoagulation.
- Prefer to use the Digital Flexible Single-Use Bronchoscope
- Use only closed circuit for suction systems.
- Keep the doors closed.
- After the procedure, ensure the ventilation of the room before the next procedure and ensure the necessary time for an effective removal of airborne contaminants (99% of the air particles, with times defined on the characteristics of the room)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Water repellent single use surgical gown
- Double gloves
- Filter mask FFP3 + Surgical mask
- Surgical cap
- Safety goggles or face shield
- Dedicated shoe cover

No special indications about PPE for negative patients.

It is recommended that any patient with unknown infectious state is considered positive, taking every precautions indicated for patients positive for Covid-19.

TRACHEOTOMY

Establish a dedicated tracheostomy team (avoiding too many rotating shifts), considering that expert surgeons can guarantee fast and effective procedure).

Surgical steps

1. Normal procedure of the tracheostomy until the exposure of the trachea (avoiding diathermy to limit the spread of vapors containing viral particles).
2. **Before tracheal incision:** Pre-oxygenation of the patient using a PEEP and then stop ventilation. Move the cuff beyond the point of the tracheal incision. Hyper-insufflate the cuff and restore oxygenation using a PEEP. When the patient is sufficiently oxygenated, communicate clearly with the anesthesiologist to stop ventilation before opening the trachea.
3. **Tracheal incision:** tracheal incision taking care to avoid the cuff. Set up the tracheal flap preferring Metzembraum scissors instead of the blade N°11. The incision should be large enough to allow an easy insertion of the cannula, without damaging the cuff. Create the stoma with non-absorbable sutures and a needle with small curvature (to limit the risk of damaging the tube).
4. Turn off the flows and wait for passive expiration. Deflate the cuff of the endotracheal tube, clamp it and pull it back proximal to the tracheal incision, under direct vision. Insert a non-fenestrated cuffed tracheostomy tube (non fenestrated). Inflate the cuff and connect the circuit to restore ventilation. Remove endotracheal tube.

After tracheotomy

- Don't deflate the cuff.
- Use only closed circuits for suction.
- Do not change dressings if not essential.
- Perform the first change of the tracheal tube not before 10 days and always using PPE.

BOSTON CHILDREN'S HOSPITAL

EMERGENCY/URGENT ORL SURGERY PROTOCOLS IN THE SETTING OF COVID-19

CONTRIBUTORS: SARA GALLANT MD, ANDREW BLUHER MD, ELIOT SHEARER MD, PHD, ERIKA MERCIER MD
ANNE HSEU MD, DENNIS POE MD, EELAM ADIL MD, GREG LICAMELI MD, JACOB BRODSKY MD, KAREN WATTERS MD,
MARK VOLK MD, ROGER NUSS MD, MICHAEL CUNNINGHAM MD

ENDOSCOPIC SINUS SURGERY (ESS)

NOTE: COVID-19 SAFETY PRECAUTIONS SHOULD BE UNDERTAKEN AS PART OF SURGICAL TIME-OUT AND DISCUSSED WITH SURGERY, ANESTHESIA AND NURSING TEAMS.

- A. Indications
 1. Acute sinusitis with orbital complication such as ophthalmology documented signs of impending vision loss / elevated intraocular pressure
 2. If intracranial complication of acute sinusitis is encountered, there should be a clear indication as to the benefit of emergent ESS as opposed to IV antibiotics or IV antibiotics and craniotomy alone
- B. Medications
 1. Avoid aerosolized medications
 2. Afrin should be applied only on nasal pledgets
- C. PPE
 1. As per hospital protocol – due to the high viral load within the nasal cavity/nasopharynx and the potential for droplet creation/exposure, N95 mask, face shield, gown, double gloves should be worn by surgeon and scrub nurse
 2. In room surgical team should be limited to an attending surgeon and fellow (if available) with video monitor available for other trainees to view the procedure from outside the OR suite
- D. Prep/drape
 1. Drape in normal clean fashion, but consider clear plastic drapes or similar to isolate the nose and prevent aerosolized droplets.
- E. Equipment considerations
 1. Avoid powered instrumentation such as the microdebrider and Endoscrub
 2. If Endoscrub is used, it should be primed within the nose and all irrigation flow should cease before it is removed from the nose at any time during the procedure

DIRECT LARYNGOSCOPY / BRONCHOSCOPY (DLB) WITH OR WITHOUT INTERVENTION

- A. Indications
 1. Airway foreign body
 2. Acute airway obstruction or known difficult airway requiring intubation
- B. Medications
 1. Avoid aerosolized medications
- C. PPE
 1. As per hospital protocol for aerosolized procedures– N95 mask, face shield, gown, double gloves should be worn by surgeon and scrub nurse
 2. Consider limiting to a single surgeon with scrub nurse and second surgeon gowned and ready to assist in anteroom.
- D. Prep/drape
 1. Clear drape overlying patient's face and chest to limited aerosolized droplets.
- E. Anesthesia discussion
 1. Intubation via safest method as decided by anesthesia team and surgeon
 2. Confirm ETT placement with end-tidal CO₂ and chest rise. Consider avoiding auscultation to decrease exposure.

ESOPHAGOSCOPY

- A. Medications
 - 1. Avoid aerosolized medications
 - 2. None typically needed after intubation (at anesthesia discretion)
- B. PPE
 - 1. As per hospital protocol – due to the high viral load within the oropharynx and the potential for droplet creation/exposure, N95 mask, face shield, gown, double gloves should be worn by surgeon and scrub.
 - 2. Consider limiting to single surgeon with video monitor available for outside observers
- C. Anesthesia discussion
 - 1. Intubation via safest method as decided by anesthesia team and surgeon. If clear that no airway foreign body, intubation should occur prior to esophagoscopy
- D. Equipment considerations
 - 1. Avoid direct visualization, favoring video laryngoscope to introduce esophagoscope, and using video rigid esophagoscope.
 - 2. Consider flexible esophagoscopy where appropriate.

EAR SURGERY

IF COMPLICATIONS OF ACUTE MIDDLE EAR DISEASE ARE ENCOUNTERED, THERE SHOULD BE A CLEAR INDICATION AS TO THE BENEFIT OF EMERGENT SURGERY AS OPPOSED TO IV ANTIBIOTICS.

- A. Urgent conditions
 - 1. Acute mastoiditis
 - 2. Otitis media or cholesteatoma with complications, eg. severe pain, evidence of facial nerve weakness, sigmoid
- B. PPE
 - 1. As per hospital protocol – due to the high viral load within the nasal cavity/nasopharynx and respiratory mucosa in middle ear/mastoid and the potential for droplet creation/aerosolization and exposure, N95 mask, face shield, gown, double gloves should be worn by surgeon and scrub. Consider using PAPR if available
 - 2. Surgery should be limited to a single surgeon with video monitor available for outside observers
- C. Prep/drape
 - 1. Consider creating a “tent” by using a clear drape to go from microscope over patient head/neck. This should especially be considered if drilling is needed, to capture splatter, akin to use for oral endoscopies.
- D. Equipment considerations
 - 1. If possible, avoid drilling, consider mastoidectomy with curettes from ORL or orthopedics
 - 2. Consider use of hand drill burr hole equipment if available
 - 3. Consider use of endoscope to minimize need for drilling if available
- E. Anesthesia discussion
 - 1. Intubation via safest method as decided by anesthesia team and surgeon.
 - 2. For myringotomy/tubes, will need to discuss with anesthesia safest mode of ventilation

POST TONSILLECTOMY HEMORRHAGE

- A. Medications
 - 1. Consider holding steroids given potential for immunosuppressive affects
 - 2. Afrin should be applied via tonsil balls if needed; avoid spraying directly into nose
- B. PPE
 - 1. Due to the high viral load within the pharynx and the potential for droplet creation/exposure during induction/intubation as well as during insertion of the mouth gag and during cautery, N95 mask, face shield, gown, double gloves should be worn by anesthesiologist, surgeon and scrub nurse
 - 2. Surgery should be limited to a single surgeon
- C. Anesthesia discussion
 - 1. Intubation via safest method as decided by anesthesia team and surgeon.

D. Intra-operative

1. Care should be taken when moving instruments in and out of the mouth to avoid unnecessary projection of droplets off of the instruments; particular care should be taken when removing any catheters being used for soft palate retraction from the nose and when removing the OG suction catheter

TRACHEOSTOMY

TRACHEOSTOMY IS A HIGH-RISK PROCEDURE BECAUSE OF AEROSOL-GENERATION.

A. Timing

1. If not emergent, perform COVID-19 testing on all patients prior to elective tracheostomy.
2. If emergent and COVID status unknown, manage patient as such COVID-19 positive
3. If performing a tracheostomy in a COVID-19 positive patient, a multidisciplinary discussion should be held with the ICU staff to discuss the best timing for tracheostomy.

B. Staff

1. Reduce unnecessary team members to essential staff only.
 - Surgery: Should be performed, if possible, by teams that regularly perform tracheostomy to ensure procedure is safe and efficient. Main surgeon with a skilled assistant. Clear discussion pre-operatively with the team as to the role of each person.
 - Anesthesia: Experienced anesthesiologist, clear discussion prior to the procedure regarding airway management, especially regarding control of ventilation/positive pressure at the time of entry into the trachea and tracheostomy placement.

C. PPE

1. As per hospital protocol.
2. Due to known aerosolization during the procedure, N95 mask, full-face shield, fluid-resistant gown, and double gloves should be worn by all individuals in the operating room.

D. Intra-operative Considerations

- Prep/drape:
 - Drape in normal clean fashion with adequate access to the trachea.
 - Ensure the mouth and nose are covered, but with a drape that will allow anesthesia easy access to the endotracheal tube.

BOSTON CHILDREN'S HOSPITAL

CONSIDERATIONS FOR PERFORMING INPATIENT DYSPHAGIA (SWALLOWING) EVALUATION IN PATIENTS WITH COVID-19 AND PATIENTS UNDER INVESTIGATION (PUIS)

CONTRIBUTORS: KAYLA HERNANDEZ MS, CCC-SLP, BCS-S AND KELSEY SIGG MS, CCC-SLP

- Speech-language pathologists (SLPs) performing dysphagia evaluations must be aware of the COVID-19 status of the patient prior to evaluation.
- COVID-19 patients who require prolonged intubation could be at risk for post-extubation dysphagia. Specific concerns may include:
 - Pharyngeal, laryngeal and tracheal pathologies
 - Altered motor function and sensory input in the pharynx and larynx
 - Delayed pharyngeal swallow response
 - Impaired swallow safety and aspiration risk
- COVID-19 patients may demonstrate difficulty with swallowing safety and efficiency related to:
 - Poor oral care
 - Lethargy/sedation
 - Respiratory compromise
 - ICU delirium
- Risk assessment should be completed, including discussion with the referring physician and bedside nurse, to determine the necessity of in-person evaluation prior to each patient contact. Consider alternatives to in-person services to reduce exposure (e.g., audio/visual telehealth, indirect exam, chart review and verbal consultation only), when appropriate.
- Dysphagia/swallowing assessments involve the potential to trigger a cough reflex and subsequent induction of sputum. This includes clinical swallowing assessment, cough testing, instrumental swallowing assessments (FEES and MBS/VFSS), and close examination and care of the oral cavity. Appropriate PPE should be donned if these services are deemed necessary after risk assessment.
- Instrumental swallowing evaluations:
 - Fiberoptic Endoscopic Evaluation of Swallowing (FEES): Consider avoiding with all patients.
 - Modified Barium Swallow (MBS) study / Videofluoroscopic Swallowing Study (VFSS): Consider avoiding on all COVID-19 positive patients and delaying for PUIs. For all other patients, provide emergent and time sensitive studies only.

WEBSITES FOR ADDITIONAL INFORMATION:

- American Speech-Language-Hearing Association (ASHA): <https://www.asha.org/About/Coronavirus-Updates/>
- Royal College of Speech & Language Therapists (RCSLT): <https://www.rcslt.org/learning/covid-19/rcslt-guidance>
- [SwallowStudy.com](https://swallowstudy.com) A Dysphagia Resource for Professionals and People with Difficult Swallowing: <https://swallowstudy.com/are-we-ready-for-post-extubation-dysphagia/>

BOSTON CHILDREN'S HOSPITAL

INPATIENT AUGMENTATIVE COMMUNICATION PROGRAM: COVID-19 SERVICE GUIDELINES

CONTRIBUTORS: RACHEL SANTIAGO MS, CCC-SLP AND MEREDITH SAGER MS, CCC-SLP

SERVICES:

- Bedside speech, language, and communication assessments
- Bedside intervention to support communication enhancement
- Provision of augmentative and alternative communication (AAC) and assistive technology strategies

PATIENT CONSULTS:

- **Patients on regular contact or droplet precautions:** Perform consults per usual, donning appropriate PPE per hospital guidelines.
- **COVID PUI (Patients Under Investigation):** Provide phone consult or Zoom consult with patient, family, and/or RN until results are confirmed. If clinically or medically indicated to perform bedside assessment before test results are back (after discussion with consulting physician), follow BCH guidelines re: PPE.
- **COVID positive patients:** Preference is to wait until patient tests negative or COVID precautions are discontinued before providing in person bedside encounters. Provide phone consult or Zoom consult as able. If clinically or medically indicated to perform in person bedside assessment (after discussion with consulting physician), follow BCH guidelines re: PPE.

BEDSIDE COMMUNICATION CONSIDERATIONS:

- Patients who use augmentative and alternative communication (AAC) at baseline should continue to access personal tools and equipment during hospitalizations.
- AAC tools should be provided to patients who require them in the event of a nonspeaking, wakeful condition. This includes patients with acute speech and language challenges associated with respiratory insufficiencies related to COVID-19.
- Patients with sensory related needs should have access to personal aids (e.g. glasses, hearing aids, processors, etc.). As able and available, utilize personal protective equipment (PPE) that supports these needs (e.g. clear face masks).
- Given difficulties seeing and hearing providers while wearing PPE, consider these strategies to enhance interactions:
 - Use of gestures, pictures, and visual aids
 - Communication boards (with text labels and picture icons)
 - [English](#)
 - [Other languages](#)
 - Tone of voice that matches facial expression
 - Establish eye contact before speaking to patients
 - A picture of the provider without PPE for reference
 - Use social stories, schedules, and other visuals to promote young patients' understanding and participation of novel events.
- Tips when interacting with patients:
 - Use clear, concise, developmentally appropriate, and culturally sensitive language
 - Slow rate of speech

- Loud volume (especially when wearing n95 masks)

COMMUNICATION RESOURCES:

- Patient-Provider Communication Forum: <https://www.patientprovidercommunication.org/>
 - Free health care communication boards to support patients of different ages, abilities, and languages
 - Instructions on how to present tools at bedside
 - Additional considerations to support patient-provider communication for wakeful, nonspeaking patients requiring ventilation
 - Additional resources to COVID-19 related materials, training videos, and other organizations providing free or discounted tools
- Clear face masks
 - <https://safenclear.com/>
- [ASHA guidelines for SLPs in healthcare settings](#)
- CommunicationFIRST: Patients “in a hospital or other health care setting, [still] have communication and other civil rights under Titles II and III of the Americans with Disabilities Act (ADA), Section 504 of the Rehabilitation Act, and Section 1557 of the Affordable Care Act (ACA)—**even during a pandemic.** <https://communicationfirst.org/covid-19/>

BRITISH ASSOCIATION FOR PEDIATRIC OTOLARYNGOLOGY (BAPO) STATEMENT ON SARS COV2 AND PAEDIATRIC OTOLARYNGOLOGY PROVISION

CONTRIBUTORS: MICHAEL KUO MD AND STEVEN POWELL MD

BAPO STATEMENT ON SARS COV2 AND PAEDIATRIC OTOLARYNGOLOGY PROVISION

This statement is to be read in conjunction with other guidance published by ENTUK, particularly those with respect to PPE, tracheostomy, endoscopy and aerosol-generating procedures, all of which are fully endorsed by BAPO. For avoidance of repetition, it is intentionally brief. As this is a rapidly evolving situation, updates of this document will be posted on the ENTUK Covid-19 resource page.

This statement is based on international expert opinion, published literature and guidance from other professional bodies. Many of the enquiries for paediatric otolaryngologists have been directed at the management of specific conditions. It would be impossible to address every possible permutation of primary pathology, Covid-status, comorbidity, local facilities and available multi-professional expertise. Recommendations herein have been made to ensure that the risk of spread of the life threatening COVID19 infection is minimised among patients, families and staff. They are also guided by the current knowledge of Covid-19 characteristics in the paediatric population, namely that 13% of infected children are asymptomatic and those symptomatic infected children have mild symptoms, that there are subpopulations at increased risk of more significant illness and that children may play a major role in community-based viral transmission including faecal-oral transmission.

MANAGEMENT OF ELECTIVE AND SEMI-ELECTIVE PAEDIATRIC OUT-PATIENT CLINIC AND SURGERY

The majority of paediatric ENT conditions will not result in serious harm or life threatening situations over a period of 3 months, therefore operating and face-to-face clinics must cease to prevent harm. There is a recognition that a small amount of paediatric ENT pathology may rarely pose a risk to life or cause serious harm to health, including rapidly enlarging neck masses. These conditions must be recognised and treated.

The management of obstructive sleep apnoea related to adenotonsillar hypertrophy has been the subject of most enquiries and debate. There are no specific objective parameters which can be used to determine whether at this time, adenotonsillectomy can be justified. As a general rule, adenotonsillectomy should be delayed unless despite maximal medical treatment, delaying surgery would result in irreversible cardiopulmonary complications or necessitate endotracheal intubation. The chosen technique should depend on available expertise. In the absence of any evidence that intracapsular tonsillectomy causes any increase in aerosolisation over conventional dissection tonsillectomy, it would be the preferred method to adopt due to the considerably reduced incidence of secondary haemorrhage. Full AGP-PPE precautions should be taken during surgery.

MANAGEMENT OF PAEDIATRIC OTOLARYNGOLOGICAL EMERGENCIES

In addition to the observations above, as capacity in hospitals reaches saturation, the management of emergencies in children should be directed at simultaneously minimizing admission and risk of harm.

Foreign bodies

Retained button batteries remain an absolute emergency with respect to removal. Ingested foreign bodies causing absolute dysphagia will require removal. Otherwise, foreign bodies in the ear, nose and throat should be treated conservatively unless there is significant risk to the airway or may cause long term sequelae if removal is delayed (e.g. sharp objects). There will be many children who develop a cough and have a soft history of “playing with small toy parts/food etc”. Unless they have stridor, dyspnoea or localizing signs these should be observed and the CXR repeated. If available, a local CT scan may help differentiate foreign body from other pathologies.

Periorbital abscess

Where vision is at risk, and conservative measures have failed, an external approach is recommended. This is in line with recommendations by the SBNS.

Fractured nose In the absence of a nasal septal haematoma, it is recommended that manipulation of fractured nasal bones should not be carried out at the present time.

Acute mastoiditis

Acute mastoiditis should be managed medically, and if appropriate by needle aspiration of a subperiosteal abscess and a CT scan acquired only if symptoms progress despite conservative management. A ventilation tube should not be used to manage intratemporal complications. If surgery is required due to life-threatening complications, it should be carried out in line with the BSO guidelines using curettage instead of drilling and after full Covid testing.

Neck abscess Infective neck masses should be managed as outpatients as far as it is possible to. Progressively enlarging cervical or retropharyngeal collections may require surgical treatment with full PPE.

Airway compromise

Inevitably, a small number of children will require urgent endoscopic airway assessment. The infective risk of outpatient endoscopy is not likely to be justifiable and a telephone discussion with your local paediatric airway service would be more appropriate after maximal medical treatment which may include empirical treatment with anti-reflux medication and oral steroids

MANAGEMENT OF CHILDREN WITH TRACHEOSTOMY

In line with ENTUK guidance, elective tracheostomy should be avoided at this time. Unavoidable tracheostomy should be carried out with full PPE using a cuffed unfenestrated tracheostomy tube. Tracheostomy tube changes should be minimized. Tracheostomy training of parents of children who underwent tracheostomy prior to Covid-19 should have their training accelerated to permit discharge as soon as it is safe to do so.

CHILDREN'S HOSPITAL OF IRELAND (CRUMLIN)

URGENT MANAGEMENT OF PEDIATRIC ENT CASES

CONTRIBUTORS: JOHN RUSSELL MD, RANIA MEHANNA MD, STEPHEN HONE MD, COLLEEN HEFFERNAN MD,
EIMEAR PHELAN MD

Inside/Outside/Referrals

- Phone consultation by Consultant ENT to Consultant/GP to decide a plan
 - Trainees should take calls but should discuss with consultant about best approach before seeing a patient
 - Avoid transfer of children from outside unless absolutely necessary!
- Feeding Difficulties/Aspiration can wait
- Chronic stridor: Defer to GP or paediatrician to monitor
- Weak cry post cardiac sx/vincristine: Defer/presume VC palsy
- Congenital neck lesions: Defer, Antibiotics for infections
- OSAP: No surgery, unless severe with complications, pulmonary hypertension/needing intubation, Covid Test pre-op, Tosillotomy with cold steel, avoid coblator, diathermy/use ties haemostasis, Full PPE protection

Rhinology

- FB Nose: if not button batteries/sharp or have potential to obstruct airway – Defer
- FB Nose: **Button batteries** – Endoscopic removal with plastic see-through cover, Full PPE protection (FFP3 mask, Visor, Waterproof Gown, double Gloves)
- Complicated sinusitis:
 - Eye in danger – Open decompression with Covid test pre-op, Full PPE protection
 - Intracranial abscess – Neurosurgical MDM
- Fractured nose – defer unless concern re septal haematoma
- Pierre Robin: Avoid NPA, avoid CPAP/Bipap if Covid Positive
 - If severe airway obstruction – MDM Resp/ICU, Covid test if time, Intubation, ?mandibular advancement, avoid trach if possible
 - Epistaxis: No Cautery, Merocel pack for severe cases only, Full PPE

Otology

- Mastoiditis: Medical rx, Needle Aspiration, subperiosteal abscess
 - No grommets
 - Avoid drill. If surgery required, use curette, Covid test pre-op
 - Full PPE protection
- Any cholesteatoma: Defer unless developing complications
- All other Otology: Defer

Head and Neck

- Tumour/Lymphoma Neck
 - Very high suspicion: U/S/CT, Open bx, Covid test pre-op, Full PPE protection
 - Fresh specimen cannot be sent if COVID+, must be in formalin and sent down immediately
- Neck Abscess: Medical treatment
 - U/S confirmed, if enlarging or child status not improving/deteriorating clinically: Aspiration/Incision /Drainage (I/D) with Covid test pre-op and Full PPE Protection
- Suspected Retropharyngeal abscess: Plain xray
 - No Airway Issues: IV antibiotics

- No Improvement: CT +/- GA, Covid test pre- op, I/D, Full PPE Protection
- Foreign Body in Oesophagus: Xray, Covid test pre-op, Rigid oesophagoscopy/Intubation, Full PPE Protection
- If specimen to be sent to lab, they must be made aware patient is COVID +

Severe Airway Problem

- Severe acute stridor with Desats / increased work of breathing: HDU/ICU/O2
 - Prepare for Urgent MLB and definitive management, If possible same GA
 - Covid test if possible pre-op, Full PPE protection
- 3 common scenarios
 - Severe Laryngomalacia / Supraglottoplasty /cold steel /avoid suction/diathermy, if possible /Adrenaline swabs
 - Bilateral VC Palsy /cold steel cordotomy / Intubation / preparation as above
 - Subglottic Stenosis /Cold steel split/ balloon /Intubation / Mitoycin C Preparation as above

Airway Foreign Body

- Consultant referral only, consider CT scan or locally prior to transfer
- Involve Respiratory Consultant in decision to do Bronchoscopy
 - Covid test pre-op if decision to proceed to theatre
- Rigid Bronchoscopy: Plastic drape/Full PPE Protection
- Flexible scope to be avoided
 - Unless going to influence management
 - Full PPE Protection
- Tracheostomy to be avoided if possible!
 - Emergency airway Only or Elective need for PICU bed
 - Preferably Covid –ve

Airway

- RRP: Defer Surgery if possible
 - Phone consultation to determine severe voice / airway symptoms developing
 - Defer /Regular phone consultation /if debridement necessary
- If MLB Required
 - Covid Test pre-op
 - Full PPE Protection/plastic drape
 - No Microdebrider. No laser! Consider cold steel debulking

CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER

GUIDELINES COVID19-APPROPRIATE PPE FOR SURGICAL CASES AND AIRWAY MANAGEMENT

CONTRIBUTOR: MICHAEL RUTTER MD

For all OR procedures all efforts should be made to limit the number of people in the OR and those coming and going to only those essential for the procedure.

KNOWN COVID19

- N95 precautions for all staff
- Priority for OR 21 or 22
- Guidelines for Anesthesia
 - Avoid aerosolizing procedures including bag-mask ventilation; use of nasal cannula
 - Spontaneous ventilation with good mask seal should not result in aerosolization
 - Recommendation is for intubation using rapid sequence if no anticipated risk (e.g., difficult airway, mediastinal mass, etc.), avoiding bag-mask ventilation; if bag-mask ventilation cannot be avoided, use lowest peak inspiratory pressures as possible
 - Laryngeal Mask Airway (LMA) is generally a preferable stopgap measure to bag-masking when airway cannot easily be secured
 - When checking for a leak, inflate balloon first, then listen for leak while deflating
 - Extubation in the operating room (if applicable). Placement of a clear drape over the patient's head/neck is recommended to contain droplet spread during extubation.

PERSONS UNDER INVESTIGATION (PUI) for COVID19

- N95 precautions for all staff
- Priority for OR 21 or 22
- Guidelines for Anesthesia
 - Avoid aerosolizing procedures including bag-mask ventilation; use of nasal cannula
 - Spontaneous ventilation with good mask seal should not result in aerosolization
 - Recommendation is for intubation using rapid sequence if no anticipated risk (e.g., difficult airway, mediastinal mass, etc.), avoiding bag-mask ventilation; if bag-mask ventilation cannot be avoided, use lowest peak inspiratory pressures as possible
 - Laryngeal Mask Airway (LMA) is generally a preferable stopgap measure to bag-masking when airway cannot easily be secured
 - When checking for a leak, inflate balloon first, then listen for leak while deflating
 - Extubation in the operating room (if applicable). Placement of a clear drape over the patient's head/neck is recommended to contain droplet spread during extubation.

High Risk Airway/Sinus Procedures

- Negative COVID-19 tested patients should proceed per routine care
- Positive COVID-19, suspicious, or asymptomatic not tested should be cared for using PAPR for non-sterile cases or N95 for sterile cases (PAPRs should be used by the surgeon, anesthesia provider and scrub; other members of the team should use N95 masks)

- High Risk Airway/ Sinus procedures include: Open airway surgery (tracheostomy, laryngotracheoplasty, tracheal resection, cricotracheal resection, slide tracheoplasty, sinus surgery, nasal endoscopy, lung resection/biopsy, TEF repair, empyema drainage/decortication); Microlaryngoscopy with removal of papilloma; Microlaryngoscopy with balloon dilation; Microlaryngoscopy with intervention as indicated; flexible bronchoscopy; whole lung lavage

Bedside Scopes

- For confirmed, suspicious or symptomatic as described above, procedures should be performed in the OR (rooms 21/21) utilizing N95 or PAPR as described.
- For asymptomatic patients, efforts should be made to coordinate the procedure in the OR with limited staff utilizing N95 or PAPR precautions.
- For asymptomatic patients that cannot be transferred to the OR the procedure should be performed with the use of N95 or PAPR for those that must be present during the procedure and for an additional 60 minutes after the procedure.

PATIENTS WITH URI SYMPTOMS (to be followed if the case must proceed *)

- If patient is presenting from out-of-state and is able to be tested for COVID19, it is reasonable to request COVID19 pre-screening to help staff with decision making regarding PPE.
- Most common symptoms with COVID19 are sore throat, fever, cough, shortness of breath. If patient has any of these symptoms, COVID19 testing is unavailable or limited, and no other virus is found as a diagnosis on respiratory panel, then patient is to be treated as a PUI for COVID19 (see above)
- If patient has symptoms per above, no respiratory panel has been performed and there is no time to perform a panel, then patient is to be treated as PUI for COVID19
- If no respiratory panel has been performed and there is time to perform a respiratory panel, then it should be ordered. These results are available in usually <6-8 hours. If results show a diagnosis of another virus, and has no other explanation for symptoms (including but not limited to empyema or pleural effusion and being treated with antibiotics), then patient to be treated with droplet precautions as it is extremely rare to have co-infection with another virus and COVID19.

In an abundance of caution:

- Avoid aerosolizing procedures including bag-mask ventilation or use of nasal cannula
- For patients requiring sedation only with low flow nasal cannula routine contact/droplet precautions should be utilized and place surgical mask over patient's mouth and nose.
- Spontaneous ventilation with good mask seal should not result in aerosolization
- Recommendation is for intubation using rapid sequence if no anticipated risk of difficult airway, avoiding bag-mask ventilation; if bag-mask ventilation cannot be avoided, use lowest peak inspiratory pressures as possible
- Laryngeal Mask Airway (LMA) is generally a preferable stopgap measure to bag-masking when airway cannot easily be secured
- When checking for a leak, inflate balloon first, then listen for leak while deflating
- Intubation should be performed with minimal personnel in OR as needed for intubation (e.g., Anesthesiologist, CRNA, Circulator) and wearing N95 masks. All others participating in case should stand outside the OR until 10 minutes after intubation for appropriate air exchanges in OR and can wear contact/droplet precautions. Team wearing N95 will remain in N95 as (1) they should not touch their face unnecessarily to doff the mask and (2) in the event of an unexpected extubation and need for reintubation.
- Extubation in the operating room (if applicable) with minimal staff present in N95 per above. Placement of a clear drape over the patient's head/neck is recommended to contain droplet spread during extubation.

ASYMPTOMATIC PATIENTS

- Standard universal precautions for staff not performing airway manipulation or in room during intubation/extubation.
- Recommendation is for intubation using rapid sequence if no anticipated risk of difficult airway, avoiding bag-mask ventilation; if bag-mask ventilation cannot be avoided, use lowest peak inspiratory pressures as possible
- Intubation should be performed with minimal personnel in OR as needed for intubation (e.g., Anesthesiologist, CRNA, Circulator) and wearing N95 masks. All others participating in case should stand outside the OR until 10 minutes after intubation for appropriate air exchanges in OR and can wear contact/droplet precautions. Team wearing N95 will remain in N95 as (1) they should not touch their face unnecessarily to doff the mask and (2) in the event of an unexpected extubation and need for reintubation.
 - Extubation in the operating room (if applicable) with minimal staff present in N95 per above. Placement of a clear drape over the patient's head/neck is recommended to contain droplet spread during extubation.
- For patients requiring sedation only with low flow nasal cannula routine contact/droplet precautions for all providers should be utilized and place surgical mask over patient's mouth and nose.

APPROPRIATE USE OF N95 MASKS

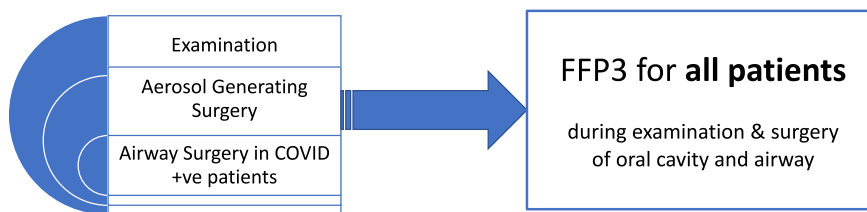
- These recommendations have been made with the acknowledgement that there is a limited supply of N95 masks. We are awaiting formal recommendations regarding the appropriateness of repeated use of the same N95 mask. In the interim please use 1 N95 mask per above recommendations per case. At this time, we ask that a surgical mask not be placed on top of an N95 mask as that can limit airflow.

* Children presenting with URI symptoms may be canceled unless it is deemed that canceling will adversely affect patient health and safety

GREAT ORMOND STREET HOSPITAL HIGH RISK AEROSOL GENERATING PROCEDURES & EXAMINATIONS THE DURING COVID-19 PANDEMIC

CONTRIBUTOR: MICHELLE WYATT MD

Key messages:



Personal Protective Equipment:

Public Health England have updated recommendations to include PPE as for aerosol generating procedures for ***all examinations of nasal and oral cavity REGARDLESS of infection status*** on 26/3/2020

Testing:

COVID-19 testing remains at the discretion of the GOSH Microbiology & Infection control teams & we recognize the limited resources for testing

ENT/dental/maxillofacial teams would advocate for screening of COVID status of **all** patients undergoing procedural or surgical interventions in the oral cavity and airway as **ONLY** urgent procedures are being performed and **ALL** are high risk by definition

Tracheostomy tube changes:

Tracheostomy tube change for inpatients should be considered an aerosol generating procedure and limited to only when required, with use of full PPE

Document Aim

To discuss appropriate measures for examination and surgical procedures involving the nose, oral cavity, oropharynx and airway in children. It addresses all patients requiring urgent examinations and surgery, regardless of infection status.

Principles of patient treatment during COVID-19 pandemic

- Protection of staff, patient and future patients
- **Only most urgent examinations & procedures to be performed**
- Appropriate use of PPE at all times
- Where no appropriate PPE available, no oral cavity and invasive respiratory tract examination or procedure should be undertaken

Rationale

Information and guidance for PPE utilisation by ENT/dental/maxillofacial clinicians during the COVID-19 pandemic is being updated daily.

The current COVID-19 pandemic requires paediatric otolaryngology/dentists/maxillofacial surgeons to carefully consider any operative procedures undertaken during this time. The urgent nature of many conditions treated by this group necessitates examination and intervention within the airway and oral cavity.

Current data suggests that 15% of paediatric COVID positive cases are asymptomatic and only 25% present with features of an upper respiratory tract infection(Lu 2020). There is also a disproportionate number of ENT/dental/maxillofacial practitioners who have been infected during the course of their clinical work. Given this risk and the fact that children continue to require non-COVID related ENT/Dental/Maxillofacial procedural intervention, this document has been developed.

Patient assessment for risk of COVID-19 - Testing

Patient COVID-19 status is being confirmed via testing, however not all patients requiring urgent surgical treatment of the oral cavity and respiratory tract will have been tested. Currently, testing should be considered for a patient if there are:

- new respiratory symptoms or fever without another cause
- worsening of a pre-existing respiratory condition

Recommendations on whether to test other patients should be directed by the Trust Microbiology team, however the ENT/Dental/Maxillofacial teams request screening of all patients requiring procedures as only urgent work is being undertaken, and ALL procedures are high risk.

Regardless of infection status, **ALL** patients examined or operated on require PPE recommended for Aerosol Generating Procedures in COVID patients.

“High-risk” aerosol generating procedures (AGPs) in theatre – AGP and airflow

Asymptomatic patients are at risk of viral shedding during examination and procedural work involving these areas. ALL paediatric patients undergoing urgent ENT/dental/maxillofacial examination and procedures should be treated as suspected COVID-19 cases due to the higher proportion of asymptomatic children carrying COVID-19.

Intubation of the airway is widely recognised as a high-risk intervention for respiratory virus transmission to healthcare workers. Procedural work undertaken in oral cavity and respiratory tract is also recognised to generate an equally high volume of viral-laden aerosols, if not higher.

Minimum PPE for High Risk ENT/Maxillofacial/Dental procedures

- FFP3 or Powered Air Purifying Respirator (PAPR) if fit test not achievable
- Long sleeved gowns
- Gloves
- Disposable eye protection

Particular attention should be paid during donning and doffing PPE. Where patients have tested negative for COVID-19, there should be no change in level of PPE used due to the risk of false negative results from current forms of testing.

Procedural Principles

Management of the airway during urgent ENT/dental/maxillofacial procedures should aim to keep aerosol generation and gas escape from the airway to a minimum. Airway circuits should be closed where possible and minimal airway instrumentation should be performed.

Procedures should be restricted to urgent components only and any suitable modifications or abbreviations to usual procedure should be employed, with the goal of limiting staff exposure to operating time and aerosol generation. No powered instrumentation should be used for soft tissue (e.g. microdebrider or laser). Minimal power should be used where drills or burs are required for bone. If possible, curettage should be used in preference powered instruments where possible.

Microlaryngobronchoscopy (MLB) & Rigid Bronchoscopy

MLB and rigid bronchoscopy should be considered very high-risk over the entirety of the procedure due to the combination of aerosol-generation and prolonged gas flow. The requirement for an open circuit delivery of gas/oxygen via the nasopharynx or oropharynx combined with the manipulation of mucosa distributes a higher aerosol volume than any other procedure.

As these 2 procedures involve oxygenating the patient via a nasopharyngeal or oropharyngeal airway, without any containment of aerosols, the follow advice applies:

- Only urgent cases should be performed
- All patients should be treated as infective
- Procedural time should be kept to a bare minimum with an expert provider performing the case
- Consider minimal 2 person operators given additional challenges of PPE
- Insertion of an LMA at induction of anaesthesia and prior to commencement of MLB/rigid bronchoscopy should be considered
 - Contains aerosols
 - Allows for preparation of equipment, clinician positioning, WHO surgical safety checklist etc while minimizing time with an open airway

Flexible bronchoscopy via airway-adjunct or ETT

Flexible bronchoscopy should continue to be performed via an LMA or ETT with minimal opening or disconnection of the ventilatory circuit to prevent spread of aerosol.

Paediatric Tracheostomy

Tracheostomy is a high-risk procedure because of aerosol-generation and any elective tracheostomy should be delayed until active COVID-19 disease has passed in keeping with current ENT-UK guidance. Any tracheostomy should proceed with PPE as for an AGP:

- Cuffed non-fenestrated tracheostomy should be used to avoid aerosolizing the virus
- Endotracheal tube should be advanced distal to the site of tracheal incision prior to opening the airway to limit aerosol spread
- Ventilation to cease prior to tracheostomy tube insertion and ensure swift and accurate placement of tracheostomy tube with prompt inflation of the cuff
- Ensure there is no leak from the cuff and the tube is secured in position
- Post-operative tube changes should only be limited to the initial tube change. If tube change is delayed to post-operative day 10, even a COVID-19 positive patient is likely to have a lower viral load or ceased being contagious

Humidification via tracheostomy tube following new paediatric tracheostomy should continue to be utilised to avoid crusting within the tube. The patient should be nursed in a side room to minimise the low-risk aerosol spread associated with humidified circuits to other patients and staff. Unlike adult patients, paediatric tracheostomy tubes have no inner cannula for removal and without humidification, are more likely to occlude. An occluded tube would necessitate urgent disruption of the circuit in as an emergency, increasing likelihood of spread.

Tracheostomy Tube Changes

Tracheostomy changes by staff should be minimized during the current COVID pandemic. Where possible the time to the next tracheostomy tube change should be extended or avoided until no active COVID disease present, or negative status is clear. If essential, any tracheostomy change should proceed with PPE as for an AGP *for all patients*.

Nasal and sinus surgery & Peri-orbital cellulitis

Non-urgent nasal or sinus surgery should not be undertaken during the COVID-19 pandemic. Peri-orbital cellulitis threatening vision or intracranial complication that requires urgent drainage, should be approached externally where possible.

Throat packs should be used with caution as insertion risks aerosol generation, however debris and secretions in the pharynx are likely to stimulate coughing on emergence from anaesthesia.

Nasal bone fracture reduction should be reserved only for septal haematoma and instrumentation of mucosa kept to a bare minimum.

Dental Treatment

Non-urgent dental treatment should not be undertaken during the COVID-19 pandemic.

Urgent treatment will generate an aerosol and operators should be provided with and use appropriate PPE (including FFP3 masks) when undertaking urgent dental treatment. Extractions, dressing of teeth, incising and draining dental abscesses, repositioning and restoring traumatized teeth should all be undertaken with appropriate PPE.

Maxillofacial procedures

These should be minimised and simplified. There is an anticipated increase in facial infection and trauma patients arriving from other sites. Drainage should be achieved via extra oral incision wherever appropriate. Increased usage of conservative and closed treatment methods should be a priority for facial fractures. Patients will be assessed via e-triage then validated and treated in a single day wherever possible.

Other procedures

- Other urgent ENT/dental/maxillofacial procedures should be performed with a cuffed or micro-cuff ETT where possible
- Tube-selection should be targeted to minimising a leak around the tube
- Operating time should be kept to a minimum

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GOSH Maxillofacial Consultants: Caroline Mills, Nadeem Saeed

GOSH Dental Consultants: Simon Critchlow

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Appendix:



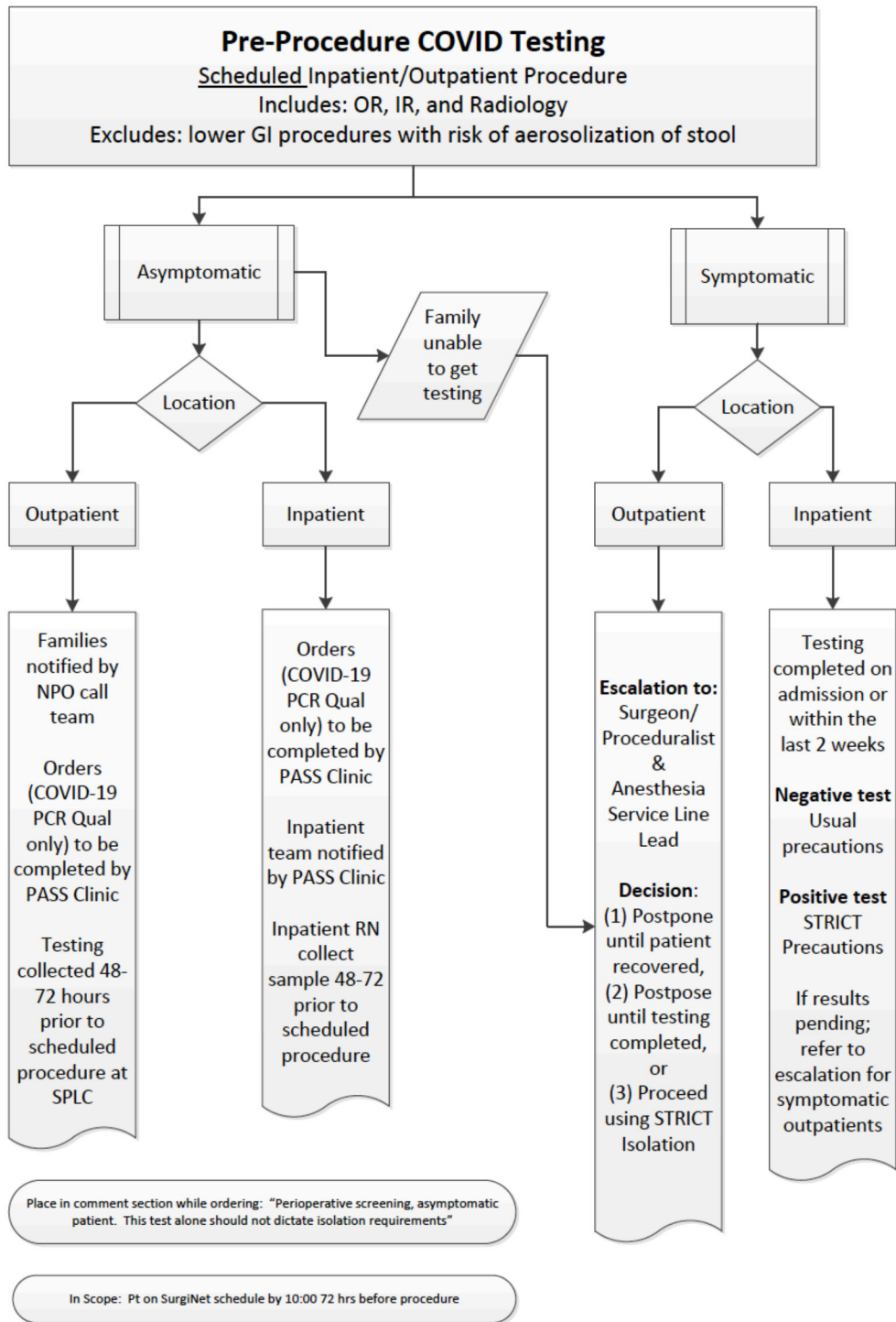
When to use a surgical face mask or FFP3 respirator

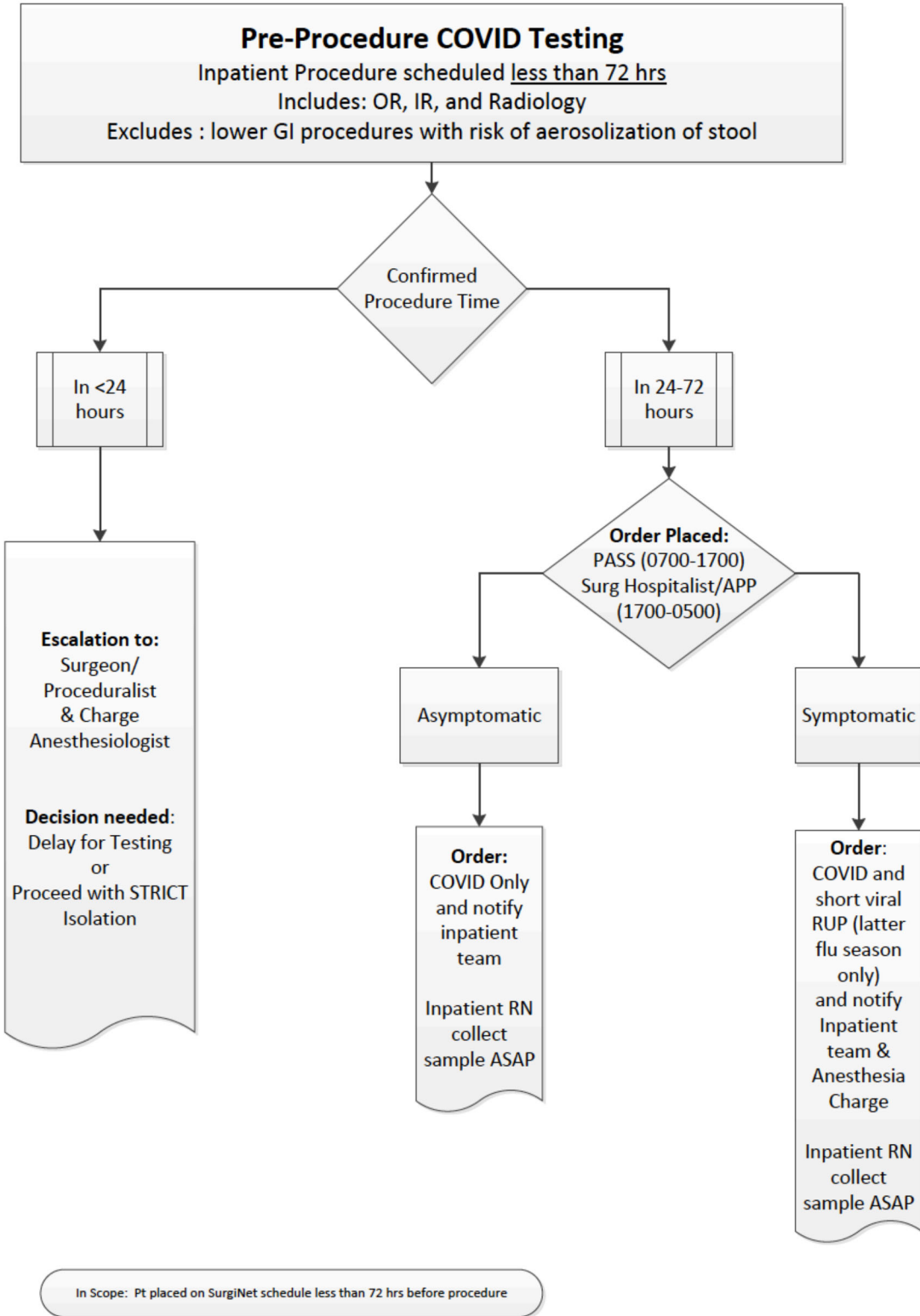
When caring for patients with **suspected or confirmed COVID-19**, all healthcare workers need to – prior to any patient interaction – assess the infectious risk posed to themselves and wear the appropriate personal protective equipment (PPE) to minimise that risk.

When to use a surgical face mask	When to use an FFP3 respirator
<p>In cohorted area (but no patient contact)</p> <p>For example: Cleaning the room, equipment cleaning, discharge patient room cleaning, etc.</p> <p>PPE to be worn (along with other designated PPE for cleaning)</p> <ul style="list-style-type: none"> • Surgical face mask 	<p>Close patient contact (within one metre)</p> <p>When carrying out aerosol generating procedures (AGPs) on a patient with possible or confirmed COVID-19</p> <p>In high risk areas where AGPs are being conducted (eg: ICU)</p> <p>The AGP list is:</p> <ul style="list-style-type: none"> • Intubation, extubation and related procedures such as manual ventilation and open suctioning • Tracheotomy/tracheostomy procedures (insertion/open suctioning/removal) • Bronchoscopy • Surgery and post-mortem procedures involving high-speed drills • Some dental procedures (such as high-speed drilling) • Non-Invasive Ventilation (NIV) such as Bi-level Positive Airway Pressure (BiPAP) and Continuous Positive Airway Pressure ventilation (CPAP) • High Frequency Oscillating Ventilation (HFOV) • High Flow Nasal Oxygen (HFNO), also called High Flow Nasal Cannula • Induction of sputum <p>PPE to be worn</p> <ul style="list-style-type: none"> • FFP3 respirator • Long sleeved disposable gown • Gloves • Disposable eye protection <p>Always fit check the respirator</p>
<p>REMEMBER</p> <ul style="list-style-type: none"> • PPE should be put on and removed in an order that minimises the potential for self-contamination • The order for PPE removal is gloves, hand hygiene apron or gown, eye protection, hand hygiene, surgical face mask or FFP3 respirator, hand hygiene <p><small>These images are for illustrative purposes only. Always follow the manufacturer's instructions.</small></p>	

SEATTLE CHILDREN'S HOSPITAL PRE-PROCEDURE COVID TESTING ALGORITHM

CONTRIBUTOR: KATHLEEN SIE MD





STANFORD UNIVERSITY PEDIATRIC OTOLARYNGOLOGY

PROCEDURE GUIDELINES

CONTRIBUTOR: DOUGLAS R. SIDELL MD

Endoscopic exams of the nose, sinuses, oropharynx, hypopharynx and larynx are among the most common head and neck diagnostic procedures and are routinely performed by a wide variety of practitioners and trainees. These procedures are considered Aerosol Generating Procedures (AGP). The nose and nasopharynx have been shown to be reservoirs for high concentrations of the COVID-19 virus.

For COVID-19-negative and non-PUI patients:

All endoscopic procedures must be:

- 1) Discussed on an individual basis between requesting attending and OHNS attending (and OT/SLP if applicable)
- 2) Performed one time (if a resident performs scope in the ER, this is done only at the discretion of Attending on call) with minimal number of family members and personnel in an enclosed room (see 4).
- 3) PPE use for all airway procedures and intubations to follow [Guidelines for PPE Use](#). Currently high risk interventional procedures on low risk patient population (asymptomatic patients or COVID-19 negative tested in last 72 hours) as follows:
 - Surgical mask with goggles or face shield
 - May choose reuse N95 mask and MUST use face shield to allow for reuse of mask
 - Gown
 - Gloves
- 4) If COVID-19 negative tested >72 hours and repeat testing is desired prior to procedure, please obtain an COVID-19 Infectious Disease consult
- 5) Unnecessary personnel will not be present. Essential personnel include:
 - a. Single ENT
 - b. Single RT (if applicable)
 - c. Single RN
 - d. MD (eg, ICU provider) at their discretion
 - e. Single parent if needed/in clinic. In the ICU, parent should be requested to leave the room.
- 6) Following any high-risk procedure in a patient on contact/droplet or airborne isolation, personnel should avoid using the room for 1 hour following the procedure.

GENERAL CONSIDERATIONS:

1. Endoscopic procedure should be anticipated to significantly change management in the patient's acute course in the coming 2-4 weeks.
2. If endoscopy is being performed to provide an aid to decision making regarding an operation, that operation or intervention should be considered urgent enough to be performed in the coming 2-4 weeks.
3. Favor transoral route over transnasal route when possible as to avoid the nasopharynx
4. For equipment transported to the floor, consider disinfection with a red sponge cleaner prior to transport. Alert our SPD colleagues that all scopes have a high chance of viral contamination and should be handled with proper PPE.
5. Consider alternative exam to render the same information, such as ultrasound or cross-sectional imaging

6. Consolidate locations for procedures, and consider a private room if possible (difficult in NICU) with closure of the door. For example, if the patient will have an awake flexible laryngoscopy on the floor, and an MDLB in the OR, then perform all procedures in the OR to minimize locations of exposure and transport of equipment.
7. Use gel or topical anesthesia delivered via pledget versus aerosolized sprays.

Special considerations for active COVID+ patient, influenza-like symptoms or patient under investigation (PUI):

1. Consider disposable endoscopes/bronchoscopes (eg, Ambu). This must be weighed against the optics, expedience and quality of the exam afforded by reusable scopes.
2. Procedure should be performed in a negative pressure room with minimal personnel as above.
3. All PPE must be worn by personnel involved in the room per [Guidance for Aerosol Generating Procedures](#):
 - Single use N95 mask with goggles or face shield
 - Gown
 - Gloves
4. For invasively ventilated patients, use sedation and neuromuscular blockade where indicated
5. Following any high-risk procedure, personnel should avoid using the room for 1 hour following the procedure.
6. Parent must stay in the room per ICU policy for PUI/COVID+ patients.
7. If the endoscopic tower is used, then the tower must be terminally cleaned by SPD or personnel capable of terminally cleaning hard surface equipment.
8. The Division Chief will be made aware of all procedures in COVID-19 positive/PUI procedures

SPECIFIC PROCEDURES:

Nasal endoscopy:

- Concern for foreign body
- Concern for neoplasm
- Evaluating for atypical source of epistaxis in pt with severe/recurrent epistaxis (eg, JNA)
- Infant with respiratory distress (rule out obstructive lesion, encephalocele, stenosis, atresia, NLD cyst)
- Urgent/emergent intubation

Transnasal Laryngoscopy:

-Concern for airway obstruction warranting intervention. **Examples** might include:

- Severe Laryngomalacia (Failure to thrive, respiratory events)
- Bilateral true vocal fold immobility/paralysis
- Stridor of unknown etiology
- Obstructive mass or lesion such as neoplasm or cyst
- Post-extubation airway obstruction of unknown etiology; prior to or attempting to avoid reintubation

-Concern for UTVCP in a patient with high pretest probability of UTVCP in whom aspiration sequelae would be potentially life-threatening in the next 30 days and in whom transcervical ultrasound did not or would not provide an acceptable diagnosis (discretion of OHNS MD)

Pulmonary Bronchoscopy or Rigid Bronchoscopy:

- Acute respiratory failure requiring urgent intervention (eg, pulmonary hemorrhage, acute airway obstruction)
- Procedure will allow the patient to progress toward extubation and/or avoid escalation of ventilatory support
- ECMO patients requiring therapeutic aspiration of the tracheobronchial tree

Specific Bronchoscopy Considerations:

- Procedures should not be repeated by Pulm or OHNS respectively if one service already performed (eg, choose one technique only – videos can be shared amongst services)
- In a clinically stable patient, try recruitment maneuvers for atelectasis or opacification prior to bronchoscopy.
- No trainees

Emergent ENT Intubation:

- Follow guidelines for PICU intubation
- No trainees
- Minimal personnel in the room; all with appropriate PPE
- PPE category: High risk procedure

FEES/Endo swallow evaluation. Pt must have:

- High risk of developing adverse sequela in the setting of aspiration* within the next 30 days (eg single ventricle with concern for vocal fold paralysis)
- Must have appropriate symptoms to warrant evaluation of anatomy during the swallow.* ENT attending will be final arbiter of this.
- Evaluation results will guide the patient toward discharge* from the inpatient arena (eg, if a patient may avoid or undergo a Gtube and therefore DC home earlier)
- Other options are higher-risk and/or will not provide necessary information to:*
 - 1) expedite patient discharge or
 - 2) prevent negative sequale
- No trainees

SLP/OT Necessary/essential tasks:

- All procedures/tasks must be agreed upon as essential by the provider performing the treatment and the requesting attending physician as necessary and appropriate considering exposure risk
- Bedside feeding and swallowing evaluations with appropriate PPE based on hospital/rehab exposure risk protocol.

SLP:

Speaking and swallowing valve trials **when deemed essential by SLP and ENT.**

Cognitive communication assessments for discharge purposes. **Necessity must be agreed upon by SLP and requesting attending.**

Augmentative communication assessments for intubated patients. **Necessity must be agreed upon by SLP and requesting attending.**

STANFORD UNIVERSITY COVID-19 GUIDELINES FOR PPE USE

CONTRIBUTOR: DOUGLAS R. SIDELL MD



COVID-19 GUIDELINES FOR PPE USE—Updated 4/3/20

Purpose: To provide clear guidance on appropriate use of personal protective equipment (PPE)

As we stop the spread of COVID-19, the safety of our staff, providers, and patients is our top priority

CURRENT RECOMMENDATIONS

Our current practice meets and/or exceeds the current CDC and state guidelines. These guidelines do **not** recommend the use of an N95 mask when treating asymptomatic patients. Most of the evidence suggests that this is transmitted only by droplet. Decisions regarding the use of additional personal protective equipment (PPE) must be made based upon the best use of available resources.

Recommendations prioritize healthcare worker safety and PPE preservation over education during the COVID-19 pandemic. The ABSOLUTE minimum number of providers involved in care requiring PPE MUST be observed for any encounter.

Please note the distinction between *single use* and *re-use* for masks of all types.

Ambulatory and Inpatient *Non-Procedure* Patient Encounters Non-immunocompromised patients

Risk of Exposure to Providers/Staff			
High—In-patient and Ambulatory	Moderate—Ambulatory	Moderate	Low
<ul style="list-style-type: none"> • Patient confirmed with COVID-19 • Patient under investigation (PUI) 	<ul style="list-style-type: none"> • Influenza-like symptoms but not PUI for COVID-19 (e.g. Cancer Center) 	<ul style="list-style-type: none"> • Exam involving asymptomatic patients 	<ul style="list-style-type: none"> • Non-direct patient care roles • Non-clinical environments
Patient			
Procedure mask	Procedure mask	Nothing	N/A
Provider/Staff			
<ul style="list-style-type: none"> • Single use N95 mask* • Goggles • Gown • Gloves 	<ul style="list-style-type: none"> • Procedure mask • Goggles/Face Shield* • Gown • Gloves 	<ul style="list-style-type: none"> • Procedure mask* • Gloves 	<ul style="list-style-type: none"> • Social Distancing Recommended • Optional: Procedural mask with re-use* • Refer to PPE Decision Tree for non-clinical roles

* Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document for guidance for extended use in drive-thru testing centers and/or dedicated COVID-19+ units or re-use in moderate risk for exposure

** Homemade masks are not recommended by any regulatory agency

Immunocompromised patients

Includes patients undergoing active chemotherapy, active radiation, active immunotherapy, lung transplant, ≤ 1 y of other solid organ transplant or bone marrow transplant, rejection treatment, neutropenia), both patient and provider/staff should wear a procedure mask unless patient falls into high risk exposure category, then the provider should wear an N95 mask.

COVID-19 GUIDELINES FOR PPE USE

Purpose: To provide guidelines on the appropriate use of PPE for specific patient encounters

As we stop the spread of COVID-19, the safety of our staff, providers, and patients is our top priority

INTERVENTIONAL PROCEDURES

High-Risk Procedures

Intubation & Extubation, procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.

Risk of Exposure to Providers/Staff	
High Risk of Exposure	Low Risk of Exposure
<p><i>**Must be approved by chair of primary surgical dept. SHC: Dr. Pearl and Dr. Wald LPCH: Surgeon-in-Chief Dr. Dunn and Dr. Fehr</i></p> <ul style="list-style-type: none"> • Patient confirmed with COVID-19 • PUI 	<ul style="list-style-type: none"> • Asymptomatic patients • or COVID-19 negative tested in last 72 hours
Patient	
Procedure mask	Nothing
Provider/Staff	
<ul style="list-style-type: none"> • Single use N95 mask* or PAPR if EMERGENT procedure when aerosolization is most difficult to control • Goggles or Face Shield • Gown • Gloves 	<ul style="list-style-type: none"> • Surgical mask with goggles or face shield • May choose re-use N95 mask; <u>MUST</u> use face shield to allow for mask re-use*** (see pic B pg 3) • Gown • Gloves

*PAPR available if provider/staff failed N95 fit test

*** Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document

Low-risk Procedures[^]:

[^]*These recommendations do not apply to the intubation portion of the procedure*
Non-aerosol generating procedures of the aero-digestive tract and all other procedures

Risk of Exposure to Providers/Staff	
High	Low
<p><i>**Must be approved by chair of primary surgical dept. SHC: Dr. Pearl and Dr. Wald LPCH: Surgeon-in-Chief Dr. Dunn and Dr. Fehr</i></p> <ul style="list-style-type: none"> • Patient confirmed with COVID-19 • PUI 	<ul style="list-style-type: none"> • Asymptomatic patients
Patient	
Procedure mask	Nothing
Provider/Staff	
<ul style="list-style-type: none"> • Single use N95 mask* • Goggles or Face Shield • Gown • Gloves 	<ul style="list-style-type: none"> • Surgical mask • Goggles or face shield • Gown • Gloves

*PAPR available if provider/staff failed N95 fit test

Please note the distinction between *single use* and *reuse* for masks of all types.

COVID-19 GUIDELINES FOR PPE USE

Purpose: To provide guidelines on the appropriate use of PPE for specific patient encounters

Please note the distinction between *single use* and *reuse* for masks of all types.

A. Procedure Mask and Face Shield



Asymptomatic patients undergoing nose, mouth, throat exam

B. N95 Mask and Face Shield



Aerosol Generating Procedures in Low-Risk Asymptomatic Patients and Exams ONLY

Examples of PPE: Supply appearance subject to change based on availability

N95 Masks



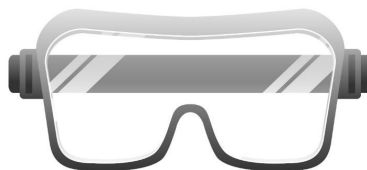
Procedural Masks



Face Shield



Goggles



Gown



Gloves



COVID-19 N95 and FACE MASK EXTENDED USE AND RE-USE GUIDELINES

Purpose: To provide guidelines on the appropriate extended use and re-use of masks

Definitions

Types of PPE use:

Normal use	The practice of using PPE for one encounter with one patient and then disposed.
Extended use	Per CDC: Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several patients, without removing the respirator between patient encounters.
Re-use	Per CDC: Re-use refers to the practice of using the same PPE for multiple encounters with patients but removing it after each encounter.

Types of masks:

Face mask, including procedure mask and surgical mask	Mask covering nose and mouth to protect the wearer and/or the environment from respiratory droplets. Face masks are rated level 0-3 based on their fluid resistance; Level 2-3 are prioritized for use in the OR and for patient care involving risk for fluid exposure.
N95 mask	Respirators used to protect the wearer from airborne particulates. These masks are also rated for fluid resistance. These require fit testing and fit checking.

Implementation:

Re-use of procedure masks in direct patient care areas

Safe re-use of procedure masks—re-use in settings with low risk of exposure is critical to conserve PPE: below is the guidance to reduce the risk of self-inoculation.

- Care must be taken to ensure that the health care provider does not touch the outer surface of the mask during care.
 - Perform hand hygiene before and after touching **OR** adjusting the procedure mask
- Mask removal and replacement must be done in a careful and deliberate manner to avoid self-inoculation.
- The mask must be discarded if soiled, damaged, difficult to breathe through, or at the end of a single shift.
- Masks should be carefully folded for storage so that the outer surface is held inward and against itself.
 - Perform hand hygiene after touching the mask.
- The mask must be stored in a clean paper bag labeled with the user's name.
- Re-use of procedure masks may be used with a face shield during low- or moderate-risk exposure patient encounters to help protect the mask from moisture

COVID-19 N95 and FACE MASK EXTENDED USE AND RE-USE GUIDELINES

Purpose: To provide guidelines on the appropriate extended use and re-use of masks

Re-use of procedure mask in non-direct patient care areas

- Masks must be discarded if they become soiled, damaged, or difficult to breathe through
- Masks should not be touched with the wearer's hands while being worn
- If the employee touches the mask, hand hygiene should be performed immediately
- If the employee needs to remove the mask (e.g. lunch break)
 - Masks should be carefully folded for storage so that the outer surface is held inward and against itself
 - Perform hand hygiene after touching the mask
- The mask must be stored in a clean paper bag labeled with the user's name.

Extended use of N95 respirators and face shields

- N95 Respirators may be used for extended periods of time only if:
 - Staff are working in a COVID-19 testing area **OR**
 - Staff are working in an inpatient COVID-19 landing zone with all confirmed COVID-19 patients
- Respirators must be used with a full face shield, in order to decrease the likelihood of contaminating the respirator
- Respirators and face shield may be used for continuous use for the entire shift, unless grossly soiled or compromised
- Discard N95 respirators that have become grossly soiled or compromised
 - Full Face shield (see cleaning & disinfection tip sheet) must be cleaned after each aerosol generating procedure
- Perform hand hygiene before and after touching **OR** adjusting the respirator or face shield

Re-use of N95 respirators

- Re-use of N95s in combination with a face shield may occur for use during low-risk exposure encounters for patients who are not suspected or confirmed COVID-19, as defined in the "Recommendations for PPE Use" document
- N95 respirators may be re-used for patients with suspected or confirmed TB
 - The mask should be removed in the anteroom (hallway for LPCH) and stored in a paper bag with the user's name
 - The mask may be re-used for one healthcare worker for one shift
 - If mask becomes grossly soiled or compromised during use, dispose of mask
- COVID-19 and other respiratory pathogens may also be transmitted by contact, therefore respirator re-use is **NOT** recommended

References:

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/face-masks.html>

<https://www.cdc.gov/coronavirus/2019-ncov/hcp/respirators-strategy/index.html>

PPE Decision Tree: Ambulatory & Inpatient Non-Procedure Patient Encounters

Purpose: guide staff and providers in the selection of appropriate PPE based on patient status to prioritize healthcare worker safety and conserve PPE

The following decision tree **ONLY** applies to direct patient care in the outlined scenarios. When employees are not providing direct patient care to these specific patient populations, social distancing must be followed with procedure mask for re-use

PATIENT STATUS

PPE GUIDELINES

- COVID-19 positive or
- Patient Under Investigation (PUI)

YES

Patient: Procedure Mask
Provider/Staff: Use Contact, Droplet, and Airborne precautions

- Gloves
- Gown
- Goggles
- Single use N95 mask*
- Post all 3 precaution signs on door

NO

Influenza like symptoms but not PUI for COVID-19

YES

Patient: Procedure Mask

Provider/Staff:

- Gloves
- Gown
- Goggles
- Procedure mask

NO

Other exam in asymptomatic patient

YES

Patient: Procedure Mask

Provider/Staff:

- Gloves
- *Procedure mask with re-use**

NO

When not providing direct patient care

YES

Provider/Staff:

- Social Distancing Required
- *Procedure mask with re-use**

*Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document



PPE Decision Tree: Interventional Procedures

Purpose: guide staff and providers in the selection of appropriate PPE based on patient status to prioritize healthcare worker safety and conserve PPE

The following decision tree **ONLY** applies to direct patient care in the outlined scenarios. When employees are not providing direct patient care to these specific patient populations, social distancing must be followed with procedure mask for re-use

PATIENT STATUS/PROCEDURE

PROVIDER/STAFF PPE GUIDELINE

COVID-19 positive or PUI or Unable to assess patient status (i.e. unresponsive trauma patient), unable to delay **and is having a HIGH-RISK PROCEDURE:**

- Intubation & Extubation
- Procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.
- Endoscopic nasal skull base surgery or mastoid surgery involving powered instrumentation



Use **Contact, Droplet, and Airborne** precautions

- Gloves
- Gown
- Eye protection/Face Shield
- Single use N95 mask OR
 - PAPR if
 - unable to wear N95 **OR**
 - **EMERGENT procedure when aerosolization is most difficult to control**
- Post "Contact, Droplet, and Airborne precaution signs on door for the duration of the procedure

NO

Asymptomatic or COVID-19 Negative within last 72 hours, and is having a HIGH-RISK PROCEDURE:

- Intubation & Extubation
- Procedures involving the upper respiratory tract and gastrointestinal tract with risk for aerosolization, such as endoscopy, bronchoscopy, and laryngoscopy.
- Endoscopic nasal skull base surgery or mastoid surgery involving powered instrumentation



Use **High Exposure Risk PPE**

- Gloves
- Gown
- Eye protection/Face shield
- Surgical mask
- May choose re-use N95 mask*. Must wear full face shield with re-use mask
- Post "High Exposure Risk" sign on door for the duration of the procedure

NO

Asymptomatic or Covid-19 Negative within last 72 hours, and is having a LOW-RISK PROCEDURE:

- Non-aerosol generating procedures of the aero-digestive tract and all other procedures



Use **Universal Precautions & Aseptic Technique**

- Surgical/Procedural team:
 - Gloves
 - Gown
 - Eye protection/face shield
 - Surgical mask
- Circulator:
 - Surgical mask
 - Eye protection
 - Don gloves for direct patient care
- Anesthesiologist:
 - Don High Risk PPE during intubation & extubation. Use full face shield if wearing re-use N95 mask*.
 - Use regular PPE during the Low-Risk surgical/interventional procedure

*Refer to "Recommendations for N95 and Face Mask Extended Use and Re-use" Document

TEXAS CHILDREN'S HOSPITAL

OTOLARYNGOLOGY CASE CLASSIFICATION

CONTRIBUTOR: ANNA MESSNER MD

TIER 1 (EMERGENT)

IMMEDIATE THREAT OF LOSS OF LIFE, LIMB, ORGAN, OR PERMANENT DISABILITY

1. Airway foreign body
2. Button battery ingestion
3. Post-tonsillectomy hemorrhage

TIER 2 (URGENT)

THREAT TO LOSS OF LIFE, LIMB, ORGAN, OR PERMANENT DISABILITY AND/OR NECESSARY FOR TREATMENT W/IN 30 DAYS

1. Esophageal foreign body
2. Abscess
3. Complication of AOM (mastoiditis, CNS involvement)
4. Complication of sinusitis (orbital cellulitis, SPA, CNS involvement, invasive fungal)
5. Endoscopic airway (supraglottoplasty in severe laryngomalacia, RRP, symptomatic subglottic stenosis/other airway lesion)
6. Tracheostomy
7. Biopsy to establish cancer diagnosis
8. Resection of malignancy (thyroid, neck dissection, etc)
9. Myringotomy/tubes in select patients (age <2 with severe infections, febrile seizures)
10. Cochlear implant in select patients
11. Mastoidectomy for cholesteatoma in select patients.

TIER 3 (ELECTIVE)

CLINICALLY NECESSARY BUT CAN SAFELY BE DELAYED AT LEAST 30 DAYS WITHOUT NEGATIVELY AFFECTING HEALTH

1. T&A
 - a. Recurrent strep: should not be done in absence of complicating factors
 - b. OSA: may depend on severity and comorbidities
2. Myringotomy/tubes in uncomplicated patients
3. Congenital neck masses (TGDC, branchial cleft anomalies, pre-auricular cysts)
4. Tympanoplasty, tube removal, myringoplasty
5. Tympanomastoidectomy for chronic OM, uncomplicated cholesteatoma (select cases may be tier 2)
6. Routine DLB (e.g. removal of suprastomal granuloma in trach patients, recurrent croup eval, etc.)
7. Endoscopic sinus surgery for chronic sinusitis, AFS, polyps

UNIVERSITY OF TEXAS SOUTHWESTERN - SURGICAL SERVICES AND ENDOSCOPY N95 RESPIRATOR AND FACE SHIELD PROTOCOL

CONTRIBUTOR: RON B. MITCHELL MD

HIGH EXPOSURE RISK surgery/procedures

Some operations/procedures may generate aerosols or droplet nuclei in high concentrations, potentially increasing the risk for airborne/droplet transmission of pathogens. This document is to provide guidelines for those operations and procedures (**Appendix 1**: List of High Exposure Risk operations and procedures).

The team of providers (Surgery, Anesthesiology, Operating Room Staff) involved in the High Exposure Risk operation/procedure will be provided with the following and expected to adhere to the extended use protocol:

- One N95 Respirator
- One Face Shield: If a Face Shield is not suitable for the surgery/procedure being performed, then the Provider will wear protective goggles and a surgical mask should be placed over the N95 respirator

Expectations regarding issuance and possession of N95 Respirator and Face Shield:

- Provider will be given one N95 and one Face Shield – issuance will be documented & tracked
- Provider will be responsible for following the CHST **extended** use guidelines for N95
- Provider will be issued replacement N95 should the Respirator be damaged (or exposed)
- Unless residents/fellows are essential to a patient's care, they should avoid participating in the patient care or encounters that require the use of PPE. Every effort should be made to minimize the overall number of providers in the OR in order to conserve N95 respirator and Face Shield.

It is recommended that all patients undergoing **high exposure risk** operations/procedures are **tested for COVID-19** prior to their day of surgery/procedure **ONLY if** the patient will be 1) a same day admit or 2) you anticipate the patient will be admitted after surgery **AND** the patient will remain a high exposure risk source. The patient should be tested 48 hours in advance of the day of the surgery/procedure so that results may be available ideally before the patient's arrival to the hospital or leaving the OR so that COVID-19 status is known prior to the patient entering the PACU and subsequent ICU/inpatient floor admission (see **Appendix 2**).

- If the test is **negative**, surgery/procedure will proceed with **Routine** (standard OR) **PPE**
- If the test is **positive**, surgery/procedure will proceed with **Full** (standard OR + N95/Face Shield) **PPE**
- If the patient is **not** expected to be admitted nor remain a high exposure risk source to the admitting floor/team, **no testing** for COVID-19 will be done but **Full PPE** will be used

ALL Other surgery/procedures (NON-HIGH EXPOSURE RISK)

Patients will be screened per the Infection **Risk Screening Tool** on the day of surgery/procedure (see **Appendix 3**)

- If the patient 'passes' the screening tool, the surgery/procedure will proceed with **Routine** PPE
- If the patient 'fails' the screening tool (has fever or recent changes in respiratory symptoms for viral infection), then the surgery/procedure will need to be canceled and rescheduled once testing results are available. The Attending faculty must contact the ID Attending on service **AND** the Surgeon-in-Chief for an approval to order COVID-19 testing and await results before proceeding with the intended surgery/procedure. If testing is not available, then the surgery/procedure will need to be postponed for a period of 14 days.
- If the Attending surgeon/proceduralist does not feel the operation/procedure can be delayed for testing and/or 14-day self-isolation, then the matter should be escalated to the Children's Command Center for further discussion and resolution.

PROTECTION OF THE OR TEAM (staff and providers) – The anesthesiology provider will wear **Full (standard OR + N95/Face Shield) PPE** because of their proximity to the airway and their potential for high exposure. It is the responsibility of the anesthesia team to ensure a process that protects all members of the OR Team.

Induction

- Trainees will not manage the airways of PUI or COVID+ patients.
- The patient should be adequately premedicated to minimize crying and facilitate induction.
- After the anesthesia time out, only those individuals necessary for the induction of anesthesia should remain in the room (this will vary based on the child and their disposition).
 - There should be a minimum of two OR team personnel in the room during intubation.
- Clear plastic drape from Bair hugger with adhesive on chest (or Acrylic plate) will be placed creating a barrier that comes up over the patient's face (positioned as soon as feasible)
- All team members will remain caudad to the drape/barrier to protect from possible coughing.
- The patient will be preoxygenated where feasible and every effort will be made to maintain mask seal throughout the induction (regardless of whether induction is mask or IV).
- Use of muscle relaxant is preferred where not contraindicated, with minimal mask ventilation and with mask remaining over the patient's face until muscle relaxant is in full effect.
- Intubations will be performed using video laryngoscopy where feasible (preferably disposable blade) to maximize distance from the patient.
- If an LMA is used, propofol will be used, either as the induction agent or as an adjunct to mask induction, to ensure a depth of anesthesia that will prevent coughing or bucking.
- Once the airway is secured drapes can be moved/removed as needed for surgery with care not to contaminate the outside (caudad surface).
- OR team can return to room 15 min after the airway is secured to allow for air turnover in room

Emergence

- Before extubation, all surgical team and staff will exit the OR, leaving only the anesthesiologist in OR
- A clear plastic drape (or Acrylic plate) will be put back into place and every effort will be made to limit exposure of those team members not directly participating in the extubation.
 - Those assisting in non-airway patient tasks (helping to ensure patient restraint or finalizing dressings must be caudad to the plastic drape or acrylic plate.
 - Non-participants should stand **6 feet** away from the patient's head or step out of OR.
- Deep extubation, after administration of glycopyrrolate and suctioning of the stomach and oropharynx, is the preferred process, where not contraindicated.
- The patient will be placed in a lateral recovery position to avoid coughing on secretion.
- OR team may re-enter OR 15 min after the stable airway is established

Recovery

- Assuming a stable airway, the low-risk patient may be moved to PACU with routine PPE.
- Patients who remain intubated postop may go directly to the ICU (preferably sedated and paralyzed to protect against airway loss during transfer).
- Patients that are PUI or COVID+ and extubated if
 - Inpatient will recover in OR and go directly to the floor wearing an isolation mask.
 - Outpatient will recover in neg pressure PACU room and discharge home wearing an isolation mask.

Appendix 1: List of High Exposure Risk Operations and Procedures

Gastroenterology Procedures

- EGD, ERCP, EUS

Pulmonary Procedures

- Bronchoscopy

Otolaryngology Surgery

- Operations
 - Tracheostomy
 - Any case involving endoscopic manipulation of the sinuses (e.g., emergency sinus surgery, essential trans-sphenoidal hypophysectomy)
 - Airway management procedures
 - Mastoid or middle ear surgery
 - Drainage of abscess in the oropharyngeal cavity
- Ambulatory procedures
 - Tracheostomy change/manipulation (e.g., suction)
 - Nasal endoscopy/debridement
 - Control of epistaxis
 - Drainage of peritonsillar abscess
 - Fiberoptic laryngoscopy

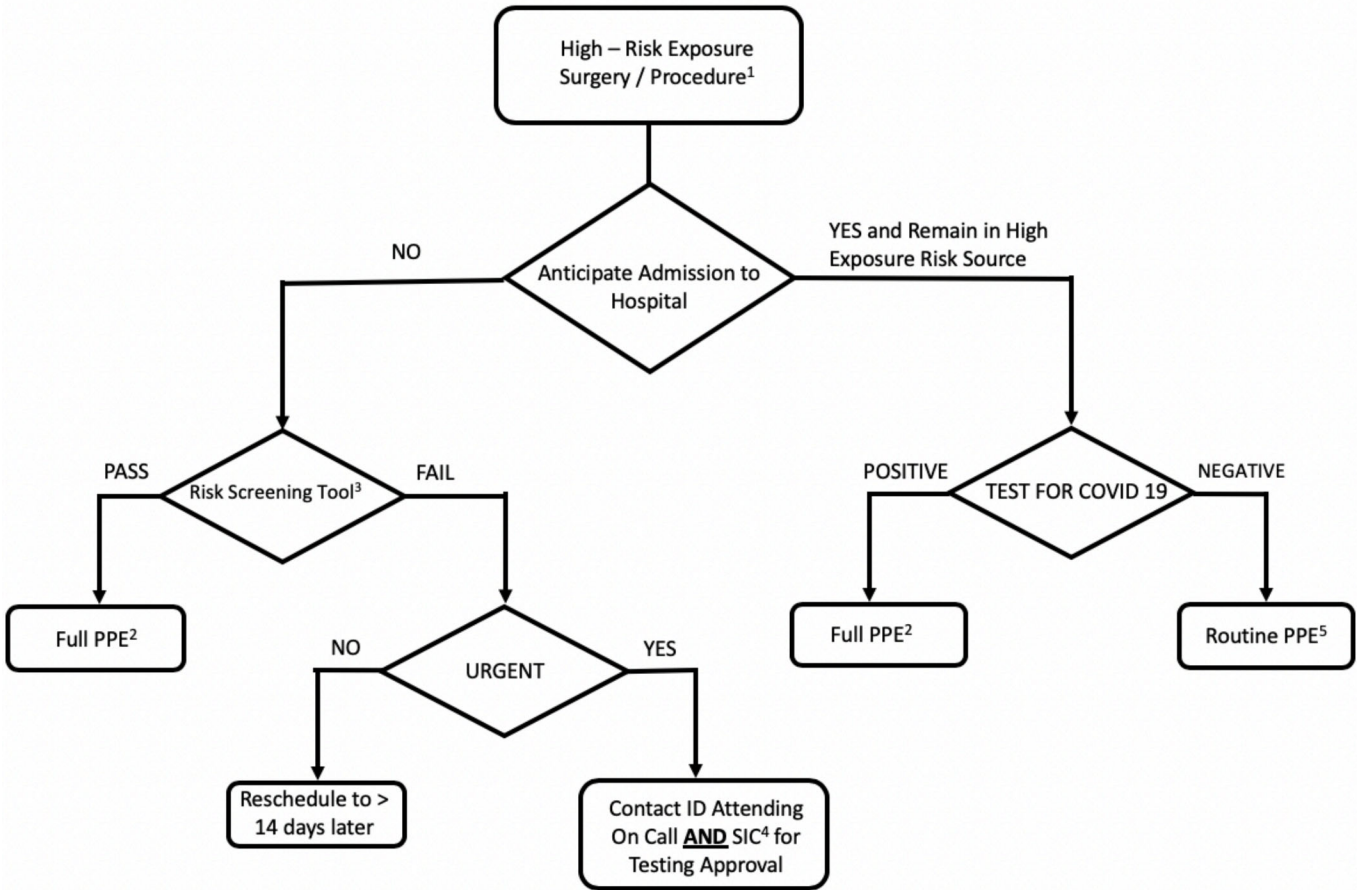
Oral Maxillofacial Surgery

- Tooth extraction with use of drill
- ORIF of mandible or midface fractures
- Resection of tumors, cysts, or other bone pathology involving the use of saws/burs
- Tracheostomy

Cardiology

- Transesophageal echocardiography

Appendix 2: High Exposure Risk Operation/Procedure



¹ High Exposure Risk Operation / Procedures: See Appendix 1

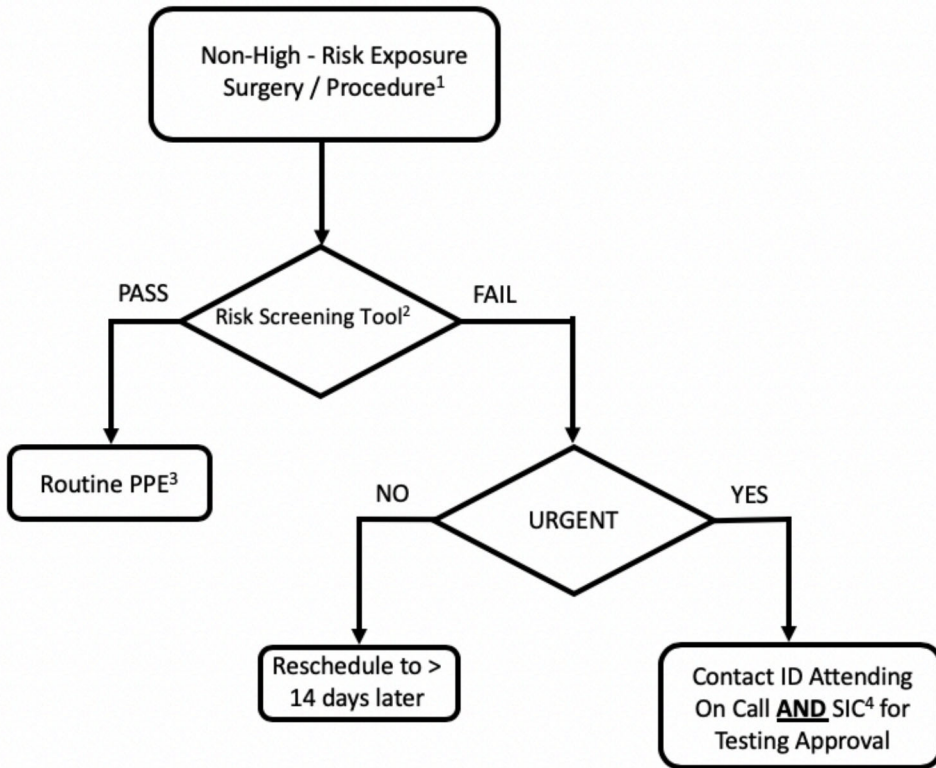
² Full PPE = N95 Mask, Eye Shield, Gloves, Gown

³ Risk Screening Tool =

⁴ SIC = Surgeon in Chief

⁵ Routine PPE = Surgical Mask, Eye Shield, Gloves, Gown

Appendix 3: Non-High Exposure Risk Operation/Procedure



¹ High Exposure Risk Operation / Procedures: See Appendix 1

² Risk Screening Tool =

³ Routine PPE = Surgical Mask, Eye Shield, Gloves, Gown

⁴ SIC = Surgeon-in-Chief

ASSOCIATION FRANÇAISE D'ORL PÉDIATRIQUE (AFOP) - COVID19 ET ORL PÉDIATRIQUE: CONSEILS DE BONNE PRATIQUE DE L'AFOP ET DU CNP ORL

CONTRIBUTOR: VINCENT COULOIGNER MD, FRANÇOISE DENOYELLE MD, NOËL GARABEDIAN MD

Ces propositions sont issues de l'expérience clinique, de recommandations gouvernementales, locales, de celles d'autres sociétés savantes, des études cliniques en cours, et peuvent donc évoluer quotidiennement.

Messages clés:

- Faible incidence de cas pédiatriques symptomatiques (1-5% séries internationales)
- Nombreux cas asymptomatiques ou paucisymptomatiques; cas sévères exceptionnels surtout chez les plus jeunes ; bon pronostic
- Précautions d'hygiène particulièrement importantes à surveiller chez les enfants en bas âge qui n'ont pas encore acquis les bons comportements dans ce domaine
- Les précautions à prendre en cas de fibroscopie ORL sont les mêmes que chez l'adulte, avec notamment nécessité d'une réduction drastique des indications et le port d'un masque FFP2, d'une surblouse, de lunettes protectrices, d'une charlotte, de gants, l'utilisation d'une caméra et si possible d'une gaine de fibroscope, le nettoyage soigneux du fibroscope sur toute sa longueur après retrait de la gaine, ainsi que des surfaces alentour. Une alternative à l'utilisation de gaines est la décontamination du fibroscope selon la procédure habituelle après chacune de ses utilisations.
- Lavages de nez au sérum sal : ils ne sont indiqués que dans les obstructions nasales invalidantes, notamment chez les nourrissons; pour ces lavages, aucune précaution spécifique n'est nécessaire lorsqu'ils sont réalisés à domicile par les parents; en hospitalisation, afin de prévenir la contamination des soignants, il est en revanche conseillé de porter un masque chirurgical, des gants, des lunettes protectrices, une surblouse.
- Indications d'endoscopie ORL sous anesthésie générale pour suspicion de corps étranger inhalé réduites aux cas cliniquement évidents et à ceux pour lesquels le scanner thoracique montre des signes directs ou indirects en faveur d'un tel corps étranger
- Indications chirurgicales: les limiter aux urgences et aux cas ne pouvant être déplacés à plus de 2 mois. Décisions de report idéalement collégiales et inscrites dans le dossier médical (possible aide du comité éthique du CNP d'ORL: ceorl@sforl.org)
- Adapter les techniques chirurgicales pour limiter les risques de dissémination virale dans l'air ambiant : pour la chirurgie endonasale, éviter les fraises et microdébrideurs et préférer les abords externes aux voies endonasales pour les drainages d'abcès orbitaires sur ethmoïdites; effectuer les mastoïdectomies aux instruments (gouge, curette) plutôt qu'au moteur ; placer une aspiration en continue à proximité du champ opératoire ; le bistouri monopolaire et le laser seraient peut-être à risque majoré de telles disséminations
- Protection des soignants durant la chirurgie: en cas de Covid-19 confirmé ou suspect, ou pour certains centres à titre systématique, port d'un masque FFP2 par toute personne présente dans la salle.

Particularités de l'infection à SARS-CoV-2 chez l'enfant

Une mise au point sur ce sujet rédigée par INFOVAC-FRANCE est disponible à l'adresse suivante:

<https://www.infovac.fr/actualites/bulletin-supplementaire-22-mars-2020- mise-au-point-sur-le-covid-19-en-pediatrie>.

1.1 Prévalence de l'infection SARS-CoV-2 chez l'enfant

- Beaucoup plus rare que chez l'adulte:
 - Série chinoise de 44.672 cas confirmés: 2% de patients de moins de 19 ans et 0,9% de moins de 10 ans (1)
 - Série coréenne: 4,8% de patients de moins de 19 ans et parmi eux, seulement 15,9% en deçà de 9 ans (2).
 - En Italie, sur 22.000 cas confirmés: 1,2% de patients de moins de 18 ans (3).
 - Aux États-Unis, sur 4000 cas confirmé : 5% d'enfants (4).
- Survenue à tout âge: âge médian de 7 ans (5-7).

1.2 Transmission / contagiosité

- Comme chez l'adulte, transmission directe, interhumaine, via la projection de gouttelettes, par voie manuportée ou via une surface inerte.
- Virus viable jusqu'à plusieurs jours sur certaines surfaces (plastique 72h et inox 48h) : les enfants en bas âge ayant tendance à toucher à tout, il est conseillé de désinfecter régulièrement les différentes surfaces des cabinets et locaux de consultation, ainsi que des chambres d'hospitalisation accueillant des enfants. Les méthodes de désinfection classiques sont efficaces (8).
- Selles potentiellement contaminantes: les enfants en bas âge n'ayant pas les réflexes d'hygiène d'un adulte, il est recommandé, après que les enfants ont été aux toilettes, de nettoyer toutes les surfaces ayant potentiellement été en contact avec l'enfant (rebord de cuvette, bouton de chasse d'eau, poignée de porte...). Bien que de l'ARN viral ait été retrouvé dans les selles, aucune transmission oro-fécale n'a été documentée (8bis, 8ter).
- Aucun cas décrit de transmission materno-fœtale du virus chez des femmes enceintes porteuses du SARS-CoV-2 (9,10).
- Durée d'incubation chez l'enfant: 2 à 10 jours (11).
- Durée de contagiosité: pas de données pédiatriques spécifiques. Chez l'adulte, la médiane de durée de présence d'ARN viral dans les sécrétions respiratoires hautes des adultes est de 10,5 jours (6-12j) (12) et il est habituel de mettre les sujets atteints en quarantaine pendant 15 jours. La même attitude est recommandée chez un enfant Covid+.

1.3 Symptomatologie, pronostic, tests diagnostiques

- Symptômes évocateurs: fièvre, toux sèche, céphalées, myalgies, troubles digestifs, anosmies sans obstruction nasale, dysgueusies aiguës, mais aussi les complications ORL infectieuses telles que les mastoïdites, rhino-sinusites, collections cervicales ou péripharyngées. La paralysie faciale unilatérale pourrait être un signe associé. Il est recommandé, même en contexte d'épidémie de COVID-19, de traiter les formes sévères de paralysies faciales aiguës (grades 5 ou 6 de la classification de House – Brackmann) par une corticothérapie orale de courte durée (5 à 7 jours) (<https://www.sforl.org/wp-content/uploads/2020/03/CORTICOTHERAPIE-EN-ORL-3.pdf>).
- Selon série pédiatrique chinoise (5), 90% d'enfants asymptomatiques ou paucisymptomatiques, dont 5,2% avec désaturation et 0,6% en détresse respiratoire aiguë.
- Les enfants les plus jeunes semblent les plus susceptibles de présenter des formes graves. La prévalence des formes les plus sévères était de 10,6% pour les enfants de moins de 1 an Covid+ dans la série de Dong *et al.* (5). Le cas symptomatique le plus précoce rapporté est celui d'un enfant de 55 jours (13).
- Bon pronostic: pas de décès d'enfants rapportés en Italie ou en Chine (3,5,6,14)

- Diagnostic:
 - Possibles anomalies biologiques évocatrices sur les bilans habituels: lymphopénie, élévation de la CRP
 - Sensibilité de la RT-PCR sur prélèvements rhinopharyngés:
 - Pas de données pédiatriques spécifiques; chez l'adulte: environ 60% (15,16)
 - Scanner thoracique: sensibilité supérieure à 90%, les premières lésions à apparaître étant des nodules pulmonaires (16). Ce scanner était anormal pour toutes les formes sévères d'infections à SARS-CoV-2 chez l'enfant (17).

Précautions en consultation

2.1 Indications

Elles sont limitées aux cas suivants:

- Urgences
- Impossibilités de traitement sans examen clinique
- Soins post-opératoires indispensables

Dans l'idéal des locaux dédiés seront réservés, avec le moins de matériel possible afin de faciliter le nettoyage entre chaque consultation (rappel: recommandations générales du CNP d'ORL <https://www.sforl.org/wp-content/uploads/2020/03/R%C3%B4le-du-sp%C3%A9cialiste-1.pdf>).

2.2 Fibroscopies ORL

- Indiquées seulement si indispensable car à haut risque de dissémination virale dans l'air ambiant (22).
 - Ne pas les réaliser notamment pour un bilan d'obstruction des voies aériennes supérieures si celle-ci est cliniquement bien tolérée.
- Conditions de réalisation:
 - Protection du médecin: masque FFP2, surblouse, charlotte, lunettes de protection. Tous ces équipements sont jetés dans des poubelles DASRI (déchets d'activités de soins à risques infectieux) dans la salle d'examen sauf les lunettes qui peuvent être décontaminées et réutilisées (<https://www.sforl.org/wp-content/uploads/2020/03/Rôle-du-spécialiste-1.pdf>).
 - Fibroscope posé sur une table bien séparée, housse camera si utilisée.
 - Utilisation d'une gaine. Après son retrait, nettoyage minutieux de l'intégralité du fibroscope, y compris sur les parties proximales qui n'ont pas été en contact direct avec les fosses nasales. Une alternative à l'utilisation de gaines est la décontamination du fibroscope selon la procédure habituelle après chacune de ses utilisations.
 - Nettoyage soigneux de toutes les surfaces de la salle d'examen
 - Délai d'au moins 30 min avant de réutiliser cette salle pour un autre patient
 - Anesthésie locale par spray de lidocaïne déconseillée
 - Lien vers un document relayant les précautions d'habillement: <https://www.openpediatrics.org/assets/document/donning-and-doffing-personal-protective-equipment-high-resolution-color>

3. Dépistage auditif en maternité

- Autorisé si pratiqué par personnel ne côtoyant pas de patients et mère asymptomatique.
- Protection du testeur: masque chirurgical + lavage des mains avant et après chaque test + gants après chaque test, puis décontamination du matériel.
- Ne pas perdre de vue les enfants à re-tester après la sortie de maternité (établir des listes d'enfants à reconvoquer une fois la crise terminée)

4. Traitements médicamenteux

- Lavages de nez au sérum salé:
 - Réservés aux obstructions nasales invalidantes, en particulier chez le nourrisson
 - Précautions:
 - Aucune précaution particulière à la maison car de toutes façons, même en l'absence de lavages de nez, un enfant contaminé a de très grandes chances de contaminer sa fratrie et ses parents
 - En hospitalisation, le risque est la contamination du personnel soignant. Des précautions sont donc conseillées dans ce cadre: port de masque chirurgical, de gants, de lunettes de protection, d'une surblouse
- Corticoïdes: indications de la corticothérapie en ORL évoquée dans deux documents du CNP d'ORL (<https://www.sforl.org/wp-content/uploads/2020/03/CORTICOTHERAPIE-EN-ORL-2.pdf> et <https://www.sforl.org/wp-content/uploads/2020/03/AFR-SFORL-COVID-19-V2.pdf>).
 - Elle est possible *per os* en courtes cures dans des formes sévères de paralysies faciales aiguës (grades 5 et 6 de la classification de House Brackmann) et de surdités brusques (seuls supérieurs à 60 dB)
 - Elle n'est pas conseillée dans la polypose, les sinusites infectieuses et l'anosmie.

5. Chirurgie ORL pédiatrique

5.1 Indications chirurgicales

- Ne sont à maintenir dans le programme que les interventions strictement impossibles à décaler de plus de 2 mois et pour lesquelles il n'existe aucune alternative thérapeutique médicale.
- Dans les cas difficiles (exemples: cholestéatomes, hypertrophie amygdalienne avec SAOS sévère), la décision est idéalement prise collégialement avec un rapport de décision écrit. Pour les cabinets libéraux, il est possible de s'adresser pour avis au Comité d'éthique du CNP d'ORL (ceorl@sforl.org)
- Amygdalectomies ou adénoïdectomie dans les SAOS sévères:
 - Indications à limiter au maximum car les sécrétions salivaires, le rhinopharynx et probablement les tissus amygdaliens (tropisme du virus pour les lymphocytes) sont à densité virale élevée
 - Si indication thérapeutique urgente: privilégier l'amygdalectomie à la ventilation non invasive, cette dernière étant à risque élevé de dissémination virale dans l'air ambiant et bloquant un lit d'hospitalisation, souvent en unité de soins continus, pour plusieurs jours
 - En l'absence de données sur le sujet, il n'est pas recommandé d'utiliser une technique d'amygdalectomie particulière.
- Chirurgie endonasale:
 - Indications rigoureusement restreintes car densité virale élevée dans les fosses nasales et de risques de dissémination de particules virales dans l'air ambiant
 - Exemples d'indication: atrésies choanales bilatérales, sténose congénitale des orifices piriformes mal tolérées malgré un traitement médical maximal
- Aérateurs trans-tympaniques
 - Présence ou non du virus dans le liquide d'otite séro-muqueuse non encore documentée
 - Intervention **non recommandée** durant la période épidémique du fait du caractère non urgent de ce geste
- Tympanoplasties pour poches de rétraction et cholestéatomes
 - Indications à discuter au cas par cas en fonction des extensions et d'éventuelles complications : exposition méningée, fistule labyrinthique, paralysie faciale
 - Report possible dans la grande majorité des cas
- Endoscopies des voies aériennes pour suspicion d'inhalation de corps étranger

Trois situations peuvent être distinguées:

 - Corps étranger très fortement suspecté cliniquement (parents témoins de l'inhalation d'un corps

étranger, syndrome de pénétration franc, toux persistante, dyspnée): indication à une endoscopie directe sans tomodensitométrie préalable

- Cas douteux [syndrome de pénétration franc sans anomalie clinique par la suite, ou à l'inverse clinique compatible (toux, dyspnée, anomalies auscultatoires asymétriques), mais sans syndrome de pénétration franc ni autre étiologie évidente de ces symptômes]: tomodensitométrie thoracique suivie d'une endoscopie si le scanner renforce la suspicion (corps étranger visualisé; piégeage expiratoire unilatéral; anomalies de la ventilation systématisées); le radiologue recherchera aussi sur ce scanner des signes en faveur d'un Covid-19.
- Cas très peu suspect (ni syndrome de pénétration franc, ni anomalies cliniques évocatrices) : ni scanner ni endoscopie des voies aériennes
- Autres indications d'endoscopies des voies aériennes ou de l'œsophage:
 - Pile bouton enclavée (œsophage, fosses nasales)
 - Ingestion de produit caustique
 - Échecs répétés d'extubation, en coordination et après concertation avec les réanimateurs ou néonatalogistes
- Trachéotomie: indications très limitées à discuter collégialement au cas par cas du fait d'un risque élevé de dissémination de particules virale durant le geste et en peropératoire, durant les changements de canule de trachéotomie
- Chirurgie oncologique ORL: les indications résiduelles sont définies dans un document de conseils de bonne pratique disponible sur le site de la Société Française d'ORL à l'adresse suivante: <https://www.sforl.org/wp-content/uploads/2020/03/SFCCF-SFORL-COVID-19-V4.pdf>
- Mastoïdites, sinusites compliquées, abcès cervicaux ou péripharyngés: essayer autant que faire se peut un traitement exclusivement médical basé sur l'antibiothérapie intraveineuse guidée par des prélèvements bactériologiques, et des ponctions locales sous MEOPA (abcès rétro-auriculaires des mastoïdites, collections cervicales). Privilégier les abords externes plutôt qu'endoscopiques quand ils sont possibles (ex: clou de Lemoine).

5.2 Bilan préopératoire à la recherche d'une infection COVID-19

- RT-PCR sur prélèvement rhinopharyngé dans les 48h préopératoires:
 - Faux négatifs : 30 à 40% (voir paragraphe 1.3)
 - Indications:
 - Souhaitable dans tous les cas
 - Indispensable en présence de signes évocateurs d'infection Covid-19 (voir paragraphe 1.3)
 - Son résultat ne doit pas différer la prise en charge des interventions très urgentes : dyspnées sévères ou progressives, hémorragies, infections sévères
- Tomodensitométrie thoracique:
 - Sensibilité de plus de 90% (voir paragraphe 1.3)
 - **Si scanner nécessaire dans le bilan préopératoire (mastoïdite, sinusite compliquée, abcès cervical ou péripharyngé, exérèse tumorale), ajouter systématiquement un scanner thoracique**
 - Dans les autres situations: discussion au cas par cas en fonction de l'âge, des symptômes et de la disponibilité du scanner
- Le diagnostic préopératoire d'infection Covid-19 doit faire rediscuter le report de la chirurgie d'au moins 15 jours (durée habituelle de quarantaine chez les sujets infectés)

5.3 Précautions chirurgicales

- Précautions quels que soient le geste et le statut Covid-19 du patient
 - Nombre minimal d'intervenants en salle d'opération et particulièrement à proximité de la tête de l'enfant
 - Lunettes de protection, en raison du risque de projections oculaires de liquides biologiques contaminés; ces lunettes doivent être décontaminées
 - Geste le plus rapide possible: réalisé par un senior expérimenté.

- Masques:
 - Toujours nécessaires
 - Selon les dotations des centres, soit FFP2 systématiques (attitude tenant compte des pourcentages élevés d'enfants asymptomatiques et de faux négatifs de la PCR) soit indications du FFP2 restreinte à des cas spécifiques liés aux symptômes, au statut COVID et au type de chirurgie (voir ci-dessous).
- Patient Covid-19+ confirmé ou suspecté (fièvre, toux, pharyngite, myalgies, céphalées, anosmies, sinusites, mastoïdites, phlegmon): masque FFP2 pour tout le personnel présent en salle
- Précautions spécifiques supplémentaires lors de gestes portant sur les voies aériennes, quel que soit le statut Covid-19 du patient
 - Gestes concernés: intubations/extubations, endoscopies, chirurgies endonasales, adénoïdectomies/amygdalectomies, mais aussi par extension chirurgies d'oreille moyenne puisque celle-ci est tapissée de muqueuse respiratoire
 - Précautions conseillées:
 - Masque FFP2 systématique pour tout le personnel présent en salle d'opération
 - Si possible salle d'opération en pression négative, avec parfois traitement de l'air à discuter avec le médecin hygiéniste de sa structure de soins
 - Éviter autant que faire se peut les techniques favorisant la mise en suspension de micro-fragments tissulaires infectés: fraissage, microdébrideur et possiblement aussi bistouri électrique monopolaire, laser, pointe de radiofréquence, sonde de coblation, lame de microdébrideur.
 - Placer si possible une aspiration continue à proximité du champ opératoire
 - Envisager pour certains gestes, afin de limiter la dissémination virale, une installation chirurgicale spécifique en complément du drapage habituel reposant sur l'utilisation d'un arceau souple et de champs transparents (Photos 1 et 2).
 - Pour les drainages des abcès périostés sous-orbitaires sur ethmoïdites: privilégier les abords externes paracantaux aux voies endoscopiques endonasales



Photos 1 et 2. Exemple d'installation utilisant des arceaux et des draps transparents pour limiter la diffusion dans l'atmosphère de la salle d'opération de suspensions de microfragments tissulaires chargés de virus au cours de certains gestes ORL à risque (Service ORL, Hôpital Necker – Enfants Malades, AP-HP, Paris).

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Documents from the Société Française d'Otolaryngologie (SFORL) :

- COVID-19 information and documentation : <https://www.yoifos.com/covid-19-information-and-guidance>

HÔPITAL NECKER-ENFANTS-MALADES (PARIS)

PROCÉDURE DE PRISE EN CHARGE PÉRIOPÉRATOIRE DES PATIENTS CHIRURGICAUX PÉDIATRIQUES EN PÉRIODE D'ÉPIDÉMIE SARS-COV2

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Procédure de prise en charge périopératoire des patients chirurgicaux pédiatriques en période d'épidémie SARS-CoV2

Enfants chirurgicaux semi urgents programmés

- Les interventions non urgentes sont annulées. Il est demandé de contacter les familles des patients programmés 48 à 72h avant l'hospitalisation pour vérifier l'absence de signe évocateur d'infection COVID-19 ou de contage familial récent. En cas de symptômes COVID et avec l'accord du chirurgien, la chirurgie est reprogrammée 3 semaines après. (procédure valable pour les patients en hospitalisation conventionnelle ou en UCA).
- Tout patient chirurgical programmé qui présente à l'entrée en hospitalisation un symptôme de type rhinite (même claire), fièvre, toux, anosmie-agueusie, troubles digestifs doit être récusé avec accord du chirurgien et l'intervention reprogrammée 3 semaines après (procédure valable pour les patients en hospitalisation conventionnelle ou en UCA).
- Une hospitalisation la veille à 11h permet la réalisation du prélèvement nasopharyngé dans le service de chirurgie, avec envoi au run PCR de 13h ou à celui de 17h (résultat 5h après, disponible pour le bloc du lendemain).
- Dans l'attente du résultat du test de dépistage, les mesures de protection Covid-suspect/Covid+ (habillage/déshabillage) doivent être mises en œuvre en pré- et postopératoire.

Enfants programmés en Unité de Chirurgie Ambulatoire (essentiellement patients semi-urgents d'Ophthalmologie)

- Même procédure que ci-dessus pour les patients symptomatiques ou avec contage familial récent.
- Pour les patients asymptomatiques, pas de prélèvement nasopharyngé pour PCR COVID au bloc en raison du délai de résultat qui arriverait après la sortie.

Enfants nécessitant une chirurgie urgente

- Tout enfant qui doit être opéré en urgence est considéré comme COVID-suspect, jusqu'à obtention du résultat du test de dépistage. Si l'intervention est prévue dans les heures suivant l'admission, le prélèvement nasopharyngé pour PCR COVID sera effectué par le chirurgien pendant l'anesthésie générale (tous les chirurgiens ont reçu le tutoriel pour réaliser ce prélèvement après l'intubation et les IBODES ont été formées au circuit de prélèvement. Pour les chirurgies courtes, il est conseillé de faire le prélèvement en fin de chirurgie, ce qui limitera la consommation d'équipement de protection). La majorité des patients opérés en urgence nécessite un scanner préopératoire : il doit comprendre des coupes thoraciques (à ajouter sur la demande). Si le patient présente une toux ou gêne respiratoire avant une intervention chirurgicale urgente, un scanner thoracique bases doses sans injection est souhaitable en pré-opératoire.
- Concernant l'orientation postopératoire des patients :
 - L'état clinique du patient requiert la réanimation ou l'USC : il est transféré en USC ou Réanimation de la FRC (éventuellement de la Réanimation Médico-Chirurgicale).
 - L'état clinique ne requiert pas les soins critiques : il retourne en hospitalisation conventionnelle :
 - o soit dans son service de chirurgie comme COVID suspect (test en attente) ou COVID free (test négatif et scanner si disponible normal).
 - o soit dans le service centralisé COVID+ de Véronique Abadie si tests COVID positif et/ou scanner typique.
 - o Si une expertise particulière chirurgicale est indispensable en postopératoire, on peut exceptionnellement garder le patient en chambre COVID+ dans le service chirurgical.

NATIONAL PEDIATRIC HOSPITAL GARRAHAN (NPHG)

PROCESO DE DECISIONES PARA PERSONAL SOSPECHOSO/POSITIVO DE INFECCIÓN POR SARS-COV-2 COVID-19

CONTRIBUTOR: HUGO RODRÍGUEZ MD

1. DEFINICIONES:

2.

Caso sospechoso	Caso Confirmado	Contacto
Agente con sintomatología de caso sospechoso (según definición del MSN), ya realizó la consulta médica y se le indico o realizo el hisopado para diagnostico COVID-19	Resultado de laboratorio positivo para SARS-CoV-2 covid-19	<p>Persona que tuvo contacto directo/ estrecho con un caso sospechoso/ confirmado.</p> <p><u>Contacto directo/estrecho</u> es aquel que comparta lugares comunes dentro del sector.</p> <p>(Aquellas personas dentro del sector que no compartan espacios comunes de descanso y/o atención no forman parte de este grupo).</p>

3. ACCIONES

Agente:

Llama al 107

Informa a su Jefe y a Medicina Laboral.

Jefe del Sector

1. Confecciona una lista con las personas que hayan estado en contacto **estrecho** y fecha del último contacto.
2. Informa el caso sospechoso/ positivo y lista de contactos a:
 - Dirección/ Gerencia de la cual depende.
 - Infectología
 - Medicina Laboral
3. Averigua lugar de internación del caso.

Medicina Laboral

1. Mantiene comunicación con el caso sospechoso/confirmado durante toda la evolución.
2. Indica el período de cuarentena a los contactos y realiza seguimiento.
3. Realiza informe diario de listado de casos y contactos, con período de cuarentena restante.
4. En conjunto con Infectología indica fecha de reintegro a las tareas del caso índice y los contactos.

Dirección/ Gerencia

1. Verifica que todos los contactos hayan sido notificados, y rastrea otros posibles contactos de otras dependencias.
2. Mantiene conocimiento continuo sobre el caso y los contactos.
3. Mantiene comunicación fluida con Infectología.
4. **Comunica a la comunidad hospitalaria.**

NPHG - NORMATIVA RELATIVA A ATENCION Y CIRCULACION DE PACIENTES Y PADRES

CONTRIBUTOR: HUGO RODRÍGUEZ MD

Recordemos que:

Los turnos programados están suspendidos durante este período. El Hospital se comunicará con el paciente y su familia.

Si la familia requiere mas información acerca de cómo continuar con la medicación, consultas al Médico Orientador o preguntas específicas relativas a la patología del paciente, puede comunicarse a: consultareprogramaciongarrahan@gmail.com o a los mail o mecanismos de comunicación de cada servicio, como ya lo tienen habitualmente.

En el área ambulatoria:

-Se autoriza el ingreso de UN SOLO ACOMPAÑANTE. Tienen prioridad la madre, el padre o la persona responsable.

-Para circular por el hospital, se deben sostener las medidas de prevención: se solicita que nos ayuden a observar esto en el movimiento de los padres y pacientes y en las salas de espera. Evitemos que los pacientes y padres deambulen.

En el área de internación:

-Los pacientes internados deben estar acompañados las 24 horas, permitiendo la presencia de UNA SOLA PERSONA : madre, padre o persona responsable. Asegurar que el cuidador del paciente sea menor a 65 años en lo posible y no presente comorbilidades.

-Salvo excepciones, NO HAY RELEVO mientras dure la epidemia. Se debe solicitar a la familia que decida el cuidador que permanecerá en la Institución porque no se permitirán relevos durante el período de cuarentena para salvaguardar los riesgos de contagio comunitario de los padres, pacientes y personal evitando situaciones de riesgo y de posible transmisión de virus que podrían producirse en los traslados. Las excepciones deberán ser definidas por la Coordinación de CIM/UCI/NEO.

-NO ESTAN PERMITIDAS LAS VISITAS en el Hospital mientras dure la pandemia. El personal de Vigilancia ha sido notificado por las autoridades y es responsable de su cumplimiento; son a quienes debemos avisar si se detectan desvíos de la misma.


-Dado que el Hospital no permite intercambios de cuidadores, no es necesario realizar certificaciones para ningún acompañante que se retire del Hospital, excepto que el mismo realice egreso a su domicilio y tenga reemplazo por otro en forma definitiva hasta el levantamiento de la cuarentena.

-Instar a cuidadores y pacientes a no deambular por la institución, permaneciendo en la habitación .

-Instar a acompañantes de pacientes a no retirarse del Hospital para realizar compras. El Hospital en su mayoría está cubriendo las necesidades.


NPHG - PROTOCOLO DE ASISTENCIA ANESTESICO – QUIRURGICO DE PACIENTE CON CORONAVIRUS (EPP)

CONTRIBUTOR: HUGO RODRÍGUEZ MD

		CENTRO QUIRURGICO: PROTOCOLO PARA EL INGRESO A QUIROFANO DE PACIENTES CON COVID-19		PICALLO/PAEZ VERSION 5. PG/FF/AH 20/03/2020 - 15:06
Paso N°	Descripción de las actividades	Responsable	Soporte/Registro	Observaciones
1	SOLICITAR EQUIPO DE PROTECCION PERSONAL (EPP)	TECNICO DE ANESTESIA E INSTRUMENTADORAS	PLANILLA DE INSUMOS	SOLICITAR EN EL DEPOSITO 2136 JUNTO CON INSUMOS HABITUALES Y EQ ALTA DENSIDAD
2	ARMAR MESA QX Y ANESTESICA	TECNICO DE ANESTESIA E INSTRUMENTADORAS		REALIZAR LAVADO SOCIAL O QX SEGUN FUNCION. COLOCAR FILTROS TANTO EN LA VIA INSPIRATORIA COMO EN LA ESPIRATORIA DEL CIRCUITO ANESTESICO
3	LAVADO DE MANOS PREVIO A LA COLOCACION DE EPP Y OTRAS VERIFICACIONES	ANESTESIOLOGO/ TEC. DE A/CIRUJANOS		ANESTESIOLOGO: VERIFICAR LA MESA Y DROGAS CIRUJANO: POSICIONAR DE SER NECESARIO AL PTE Y/ O COLOCAR Sonda VESICAL.
4	PREPARACION PARA COLOCACION DE EPP	ANESTESIOLOGO/ TEC. DE A/ IQ/CIRUJANOS		RETIRAR JOYAS, RECOGER CABELLO, VACIAR BOLSILLOS, AJUSTAR CALZADO Y SUJETAR LENTES PERSONALES PREVIO A COLOCACION DE EPP.
5	COLOCACION DE EPP	ANESTESIOLOGO/ TEC. DE A/ IQ/CIRUJANOS	CHECK- LIST	TODOS LOS INTEGRANTES: COLOCARSE CAMISOLIN, GUANTES, COFIA DOBLE (MUJER /VARON) PARA CUBRIR TODO EL CABELLO, BARBIJOS N95 O QUIRURGICOS SEGUN FUNCION, ANTIPARRAS Y MASCARA DE PROTECCION, SEGUN PROTOCOLO DE COVID19 – (Ver Anexo I)
6	INGRESO DEL PACIENTE	ANESTESIOLOGO/ IQ/CIRUJANO	CHECK- LIST	INGRESAR EL PACIENTE AL QX 8. LAS PERSONAS DEBEN SER LAS IMPRESCINDIBLES, CORRECTAMENTE VESTIDAS CON EPP Y SE DEBEN MANTENER LAS PUERTAS CERRADAS PARA ASEGURAR LA PRESION NEGATIVA. LOS INSUMOS QUEDARAN EN LA ANTESALA Y SOLO LOS INDISPENSABLES PERMANECERAN DENTRO DEL MISMO.
7	CIRUGIA EN CURSO	EQ. QUIRURGICO		SOLICITAR A LA IQ VOLANTE CUALQUIER REQUERIMIENTO DE INSUMOS

Combate de los Pozos 1881 (C1245AAM) | Ciudad Autónoma de Buenos Aires | República Argentina
Acceso pacientes: Pichincha 1890 | Teléfono: (54-11) 4122-6000 | www.garrahan.gov.ar

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		CENTRO QUIRURGICO: PROTOCOLO PARA EL INGRESO A QUIROFANO DE PACIENTES CON COVID-19		PICALLO/PAEZ VERSION 5. PG/FF/AH 20/03/2020 - 15:06
Paso N°	Descripción de las actividades	Responsable	Soporte/Registro	Observaciones
8	DESPERTAR DEL PACIENTE	ANESTESIOLOGO/CIRUJANO/ IQ		SOLICITAR CAMILLERO
9	SALIDA DEL PACIENTE	ANESTESIOLOGO/CIRUJANO/ IQ		DESCARTAR TODO EL MATERIAL EN BOLSA ROJA ROTULADA INCLUIDO RECEPTAL Y DESCARTADOR DE CORTO PUNZANTES
10	RETIRO DE EPP	TODO EL EQUIPO QUIRURGICO	CHECK- LIST	RETIRAR EL EPP SEGUN PROTOCOLO: RETIRAR GUANTES-HIGIENE DE MANOS- RETIRAR MASCARA FACIAL (SUMERGIR EN BATEA CON LT8) RETIRAR ANTIPARRAS-HIGIENE DE MANOS- COLOCACION DE MANOPLAS-RETIRAR CAMISOLIN, BOTA Y COFIAS-HIGIENE DE MANOS
11	LIMPIEZA Y DESINFECCION	PERSONAL DE LIMPIEZA E IQ RESPONSABLE DE TURNO		COLOCAR EL EPP Y REALIZAR LA LIMPIEZA SEGUN PROTOCOLO HABITUAL CON LT8. DESCARTAR TODO EN BOLSA ROJA ROTULADA: FECHA COVID- 19
13	TRASLADO DE MUESTRAS DE LABORATORIO /ANATOMIA	IQ Y AYUDANTE DE SERVICIO	LIBRO DE MUESTRAS	COLOCAR EL FRASCO EN BOLSA ROTULADA Y ENVIAR EN EL MOMENTO, DE NO SER POSIBLE SE COLOCA DOBLE BOLSA CON ROTULO VISIBLE COVID-19.

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Anexo I - Preparación, Colocación y Retiro del Equipo de Protección Personal (EPP)

PEGAR AQUÍ ETIQUETA DE IDENTIFICACIÓN DEL PACIENTE	Leg:	Apellido y Nombre:	QUIRÓFANO Nº

PASOS PREVIOS ANTES DE LA COLOCACION DE EPP

ANTES	ORDEN	DESCRIPCIÓN	REALIZADO
	1	RETIRAR JOYAS	<input type="checkbox"/>
	2	RECOGER EL PELO	<input type="checkbox"/>
	3	VACIAR BOLSILLOS	<input type="checkbox"/>
	4	AJUSTAR CALZADOS	<input type="checkbox"/>
	5	SUJETAR LENTES PERSONALES	<input type="checkbox"/>

COLOCACION DEL EPP

COLOCACION	ORDEN	DESCRIPCIÓN	REALIZADO
	1	HIGIENE DE MANOS	<input type="checkbox"/>
	2	COLOCACION DE BOTAS	<input type="checkbox"/>
	3	COLOCACION DE BARBIJO	<input type="checkbox"/>
	4	COLOCACION DE ANTIPARRAS	<input type="checkbox"/>
	5	COLOCACION DE MASCARA FACIAL	<input type="checkbox"/>
	6	LAVADO DE MANOS QUIRURGICO	<input type="checkbox"/>
	7	COLOCACION DE CAMISOLIN IMPERMEABLE	<input type="checkbox"/>
	8	GUANTES POR ENCIMA DEL CAMISOLIN	<input type="checkbox"/>
	9	VERIFICAR LA CORRECTA COLOCACION DEL EPP	<input type="checkbox"/>

RETIRO DEL EPP

RETIRO	ORDEN	DESCRIPCIÓN	REALIZADO
	1	RETIRAR GUANTES	<input type="checkbox"/>
	2	HIGIENE DE MANOS	<input type="checkbox"/>
	3	RETIRAR DE ATRÁS HACIA ADELANTE MASCARILLA FACIAL	<input type="checkbox"/>
	4	RETIRAR ANTIPARRA	<input type="checkbox"/>
	5	HIGIENE DE MANOS	<input type="checkbox"/>
	6	COLOCACION DE MANOPLAS	<input type="checkbox"/>
	7	RETIRAR CAMISOLIN	<input type="checkbox"/>
	8	RETIRO DE BOTAS Y COFIA	<input type="checkbox"/>
9	HIGIENE DE MANOS	<input type="checkbox"/>	

SOCIEDADE PORTUGUESA DE OTORRINOLARINGOLOGIA E CIRURGIA DE CABEÇA E PESCOÇO (SPORL-CCP) - ANOSMIA COMO SINTOMA DE COVID-19

CONTRIBUTOR: JORGE SPRATLEY MD, PHD



Comissão de Rinologia e Cirurgia da Base do Crânio, SPORL-CCP

ANOSMIA COMO SINTOMA DE COVID-19

As infeções respiratórias superiores são uma das principais causas de perda ou diminuição do olfato (anosmia ou hiposmia). São inúmeros os vírus que podem causar esta perda de olfato pós-infecciosa, onde se incluem os vírus da família do coronavírus.

Não raras vezes a anosmia associa-se a alterações do paladar (disgeusia).

O aparecimento de um número inusitado de doentes com anosmia *de novo* e consequentes alterações do paladar, sem outros sintomas, no contexto da pandemia COVID-19, levantou a suspeita da associação entre a infeção pelo novo coronavírus (SARS-Cov-2) e a anosmia.

A possibilidade desta associação foi reforçada com o relato de séries de doentes com COVID-19 da Coreia da Sul, país onde a taxa de testes na população é elevada, que revelaram a presença de anosmia em 30% dos doentes,¹ ou no caso da Alemanha em que 2/3 dos doentes positivos para COVID-19 apresentavam anosmia.²

Acrescentam-se, ainda, posições de várias sociedades científicas emitidas nas duas últimas semanas alertando também para esta associação: Société Française d'ORL et de Chirurgie de Face et du Cou,³ European Rhinologic Society,⁴ ENT UK,¹ American Academy of Otolaryngology-Head and Neck Surgery,⁵ Associação Brasileira de Otorrinolaringologia e Cirurgia Cérvico-Facial,⁶ Sociedad Española de Otorrinolaringologia y Cirurgia de Cabeza y Cuello,⁷ entre outras.

Em resumo, há evidência crescente que:

- a anosmia ou a hiposmia pode ser o único sintoma de COVID-19, e não raras vezes a sua manifestação clínica inicial
- um doente com anosmia de instalação aguda recente, associada ou não a outros sintomas virais, deve ser considerado suspeito de infeção COVID-19
- o quadro clínico de doentes com anosmia por COVID-19 é habitualmente ligeiro
- a anosmia e disgeusia associadas à infeção COVID-19 têm, habitualmente, uma evolução favorável com muitos doentes a recuperarem o olfato e o paladar em 7 a 14 dias

Recomendações

- assumir a anosmia aguda como um dos sintomas de infeção COVID-19 e incluí-la como sintoma no algoritmo de abordagem de pessoas com suspeita de Covid-19, evitando deste modo que portadores do vírus circulem sem diagnóstico da infeção
- prescrever teste diagnóstico para COVID-19 aos doentes com aparecimento de anosmia aguda no contexto da pandemia COVID-19
- aconselhar o isolamento no domicílio por um período de 14 dias, aos doentes que refiram o aparecimento de anosmia aguda acompanhada ou não de outros sintomas virais
- evitar o uso de corticosteroides sistémicos e tópicos nasais em doentes com aparecimento de quadro clínico agudo que inclua anosmia ou disgeusia no contexto da pandemia COVID-19
- aconselhar os doentes com patologia nasossinusal crónica a manter a sua medicação habitual, nomeadamente os corticosteroides tópicos nasais; nestes casos, a sua descontinuação poderá levar ao agravamento dos sintomas nasais dificultando a posterior identificação de sintomas de COVID-19⁸
- prescrever treino olfativo se a anosmia pós-infecciosa for persistente e acompanhar a sua evolução

A SPORL-CCP defende que, com a inclusão da **anosmia como sintoma sugestivo de infeção COVID-19**, poderá ser identificado um maior número de pacientes com infeção COVID-19, mesmo que com doença ligeira. Se aplicadas as atitudes de diagnóstico e isolamento desse grupo de doentes, serão possíveis uma menor propagação e um melhor controlo da infeção na comunidade.

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SPORL-CCP - RECOMENDAÇÕES RELATIVAS AO RISCO DE INFECÇÃO PELO COVID-19

CONTRIBUTOR: JORGE SPRATLEY MD, PHD



RECOMENDAÇÕES RELATIVAS AO RISCO DE INFECÇÃO PELO COVID-19

Sociedade Portuguesa de Otorrinolaringologia e Cirurgia da Cabeça e Pescoço (SPORL-CCP)

20 de Março de 2020

1. RECOMENDAÇÕES BÁSICAS PARA OS CUIDADOS ORL

A – Uso de máscara:

- Máscara cirúrgica:

- Uma vez que indivíduos infetados podem ser assintomáticos e provavelmente capazes de transmitir a doença^{1,2}, e porque os médicos ORL estão muito próximos da via aérea do paciente durante a consulta, o uso sistemático da máscara cirúrgica é a **proteção mínima** recomendada nas consultas ou observações urgentes de ORL.³ Mas a máscara cirúrgica só está indicada nos doentes sem sintomas respiratórios e em que não seja necessária uma observação da via aérea (fossas nasais, cavidade oral, faringe, laringe). Sempre que haja sintomatologia respiratória e/ou observação da via aérea, o nível de proteção da máscara tem que aumentar⁴ (ver adiante).
- O uso de máscara cirúrgica está recomendado nos outros profissionais de saúde que não vão observar o doente mas que contactam com o paciente nas instalações da consulta ou da urgência de ORL (secretárias, assistentes, enfermeiros, entre outros).⁴
- A colocação de uma máscara cirúrgica no próprio doente também deve ser realizada, nesta fase, o mais cedo possível logo que se identifique a presença de sintomas respiratórios (por exemplo no serviço de urgência deveria ser logo no registo administrativo ou, no máximo, na triagem). Da mesma forma os doentes com sintomas respiratórios devem manter uma distância de 1 metro dos outros indivíduos, por exemplo, na sala de espera.⁴
- **Em resumo, a máscara cirúrgica na consulta / urgência de ORL é o nível mínimo de proteção e só deve ser utilizada quando não se vai observar a via aérea e o doente está assintomático.**

- Máscara FFP2: o seu uso está indicado:

- Pelo médico ORL, quando vai observar a via aérea (cavidade oral, observação da orofaringe com abaixa-língua, rinoscopia anterior, exame endoscópico da via aérea superior ou entubação).³
- Pelo médico ORL, quando vai observar doentes que tenham sintomas respiratórios agudos, mesmo que sejam ligeiros. 80 % dos doentes infetados com o COVID-19 apresentam sintomas ligeiros que não são incluídos nos critérios clínicos da DGS para o **caso suspeito**. Esses sintomas podem incluir, entre outros, sintomas que trazem o doente com facilidade ao ORL e que não são muitas vezes valorizados como suspeitos da infeção pelo COVID-19, tais como a coriza, congestão nasal e odinofagia⁵.
- Pela equipa de enfermagem que realize atos na via aérea nos mesmos doentes ou em pacientes infectados ou com suspeita de infeção.



- Preferencialmente, também pelos profissionais de saúde que permanecerem no mesmo compartimento onde o doente está a ser observado por um ORL que tem indicação para usar uma máscara FFP2.
- As máscaras FFP2 requerem uma colocação correta e têm a dificuldade de se usar durante várias horas.³
- **Em resumo, a máscara FFP2 na consulta / urgência de ORL é o nível mínimo de proteção quando se avaliam doentes com sintomas respiratórios agudos, mesmo que sejam ligeiros; quando se faz a observação da via aérea; ou em todas as situações em que se prestam cuidados mais invasivos.**

B – Óculos de proteção

- O seu uso é recomendado para qualquer gesto com risco de projeção ocular de líquido biológico, independentemente do status do paciente. Para o médico ORL, isso diz respeito, em particular, ao exame do doente com sintomas respiratórios agudos, mesmo que sejam ligeiros, ou quando se faz a observação da via aérea.⁴
- A viseira pode ser uma alternativa aos óculos de proteção.⁴
- **Em resumo, os óculos de proteção na consulta / urgência de ORL é o nível mínimo de proteção ocular quando se avaliam doentes com sintomas respiratórios agudos, mesmo que sejam ligeiros; quando se faz a observação da via aérea; ou em todas as situações em que se prestam cuidados mais invasivos.**

C – Luvas

- O uso de luvas está indicado em caso de contato com o doente ou quando houver contacto ou possibilidade de contacto com líquidos biológicos. As luvas, descartáveis, devem ser removidas imediatamente depois do procedimento ou da observação do doente.⁶ A única situação em que o médico de ORL prestará cuidados ao doente sem colocar luvas é no doente sem sintomas respiratórios que não será submetido a qualquer forma de exame objetivo.
- **Em resumo, devem usar-se luvas em caso de contato com o doente ou quando houver contacto ou possibilidade de contacto com líquidos biológicos.**

D – Bata

- O uso de bata descartável impermeável (ou bata descartável permeável por cima de avental de plástico, impermeável) está indicado quando for possível o contacto ou o salpico de líquidos biológicos. A bata, descartável, deve ser removida depois do procedimento ou da observação do doente.⁶
- Nos cuidados da nossa especialidade, o nível mínimo de cuidados que impõe a utilização de batas são as situações em que se faz o exame objetivo do doente com sintomas respiratórios agudos, mesmo que sejam ligeiros, ou quando se faz a observação da via aérea.⁴
- **Em resumo, devem usar-se bata impermeável descartável quando se avaliam doentes com sintomas respiratórios agudos, mesmo que sejam ligeiros; quando se faz a observação da via aérea; ou em todas as situações em que se prestam cuidados mais invasivos.**



E – Touca

- O uso de touca é recomendado quando for possível o contacto ou o salpico de líquidos biológicos.
- **Em resumo, a touca deve ser usada nas mesmas situações em que utiliza máscara, óculos ou viseira, batas e luvas.**

F – Lavagem das mãos

- Os cinco momentos para a higienização / lavagem das mãos são os seguintes⁷:
 - Antes do contacto com o doente
 - Antes de procedimentos limpos / assépticos
 - Após risco de exposição a fluidos orgânicos
 - Após contacto com o doente
 - Após contacto com o ambiente envolvente do doente
- As recomendações atuais relativas à utilização de luvas, mais exigentes, não invalidam a necessidade de higienizar as mãos, com água e sabão ou solução de base alcoólica, antes de colocar e depois de remover as luvas e a necessidade de lavar ou higienizar frequentemente as mãos independentemente destas recomendações.
- **Em resumo, as mãos devem ser lavadas / higienizadas nos 5 momentos tradicionais, nos casos em que utilizem luvas, antes da sua colocação e depois da sua remoção e na rotina habitual.**

G – Quadro resumo dos equipamentos de proteção individual (EPIs)

- O quadro seguinte resume a indicação para a utilização dos diferentes equipamentos de proteção individual nos diferentes tipos de prestação de cuidados de saúde da especialidade de ORL, em particular no atendimento das consultas e do serviço de urgência^{8,9}.

Quadro 1						
	Máscara cirúrgica	Proteção ocular	Máscara FFP2	Bata impermeável	Luvas	Touca
Doente sem sintomas respiratórios e sem exame objetivo	X					
Doente sem sintomas respiratórios e com exame objetivo que não inclui via aérea (ex.: só otoscopia)	X	X		X	X	X
Doente com sintomas respiratórios agudos		X	X	X	X	X
Doente que vai ter exame clínico da via aérea		X	X	X	X	X
Doente que vai ter exame endoscópico da via aérea		X	X	X	X	X



- Ordem de colocação dos EPIs¹⁰:
 1. Higienizar as mãos com solução antisséptica de base alcoólica
 2. Colocar bata
 3. Colocar máscara cirúrgica ou FFP2
 4. Colocar proteção ocular
 5. Colocar luvas
- Ordem de remoção dos EPIs¹⁰:
 1. Remover bata
 2. Remover luvas
 3. Higienizar as mãos com solução antisséptica de base alcoólica
 4. Remover proteção ocular
 5. Remover máscara
 6. Higienizar as mãos com solução antisséptica de base alcoólica
 7. Descartar todos os resíduos para o saco do Grupo III – risco biológico
- Estas recomendações são dirigidas à ORL, mas podem ser utilizadas por médicos de outras especialidades que realizem o mesmo tipo de avaliação dos doentes (exame da orofaringe com espátula, por exemplo), como os médicos de Medicina Geral e Familiar, Medicina Interna, Medicina de Urgência, e de outras especialidades.

H – Consultas, cirurgias, exame clínico

O adiamento de atividades é imprescindível, tendo em conta os riscos de propagação da pandemia devido à circulação das pessoas, a disseminação da infeção nas unidades de saúde e a provável redução no número de profissionais de saúde disponíveis por motivos de infeção, quarentena ou assistência à família. As recomendações são as seguintes:

- Consultas: **cancelar consultas não urgentes.** Os profissionais de saúde devem estar disponíveis para realizar teleconsultas nas quais é feita a avaliação e a orientação possível da situação de cada doente, evitando a sua circulação e deslocação ao hospital.
- Cirurgias: **adiar cirurgias não urgentes.** As cirurgias relacionadas com a patologia grave não devem ser adiadas (cirurgia de tumores e de obstrução da via aérea).
- Procedimentos invasivos e técnicas endoscópicas: dada a produção de aerossóis contaminantes gerada por eventos frequentes como a tosse e o espirro¹¹ e a produção de aerossóis maior em procedimentos tais como a laringoscopia e ainda maior em procedimentos como a traqueotomia, **a oportunidade e verdadeira imprescindibilidade de cada um destes procedimentos deve ser corretamente avaliada e ponderada.**
- Exame objetivo ORL completo: mesmo a avaliação mais simples da via aérea (ex: avaliação da orofaringe com espátula) aumenta o risco de infeção e eleva o nível de exigência na proteção individual, contribuindo para o esgotamento dos EPIs que podem vir a ser necessários para avaliações mais exigentes e arriscadas dos doentes num período mais dramático da pandemia. É razoável abdicar de um atendimento presencial do doente se a informação obtida sem encontro presencial for suficiente para o ajudar no imediato ou se a sua situação menos prioritária for compatível com o adiamento da consulta. Da mesma forma, mesmo numa avaliação com encontro presencial pode dispensar-se a avaliação da via aérea, por exemplo da orofaringe (poupano recursos preciosos) se a anamnese for suficiente para uma orientação terapêutica sem risco imediato para o doente⁸.



I – Outras recomendações

- Todos os doentes que irão ser avaliados pela ORL nas consultas e nas urgências devem ter uma **medição da temperatura à chegada**⁸.
- A avaliação dos doentes pela ORL nas situações que tenham critérios para se utilizarem EPIs além da máscara cirúrgica (ver Quadro 1) deve ser feita, sempre que possível, num compartimento onde não estejam outros doentes ou profissionais de saúde. Esta medida destina-se a minimizar o risco de infeção dos outros profissionais e reduzir o gasto de EPIs que seriam necessários para os outros profissionais de saúde⁸.
- Deve ainda evitar-se a presença e circulação de qualquer pessoa que não faça parte da equipa e cuja presença não seja essencial para o atendimento do paciente (visitante, acompanhante de paciente adulto autónomo)
- Na sala de espera, planeie medidas que permitam que os pacientes fiquem longe um do outro por uma distância de pelo menos 1,5 metros.
- As superfícies e equipamentos devem ser higienizados depois da observação de cada doente.

J – Discussão

- As recomendações aqui desenvolvidas podem ser melhor compreendidas se se compreender melhor como é que se faz a transmissão do vírus no contexto da prestação de cuidados na nossa especialidade.
- Com a evidência disponível, sabe-se que a transmissão do vírus faz-se predominantemente por **gotículas** (produzidas pela tosse, pelos espirros e pela fala) e pelo **contacto direto ou indireto** com superfícies ou equipamento contaminado. As gotículas viajam por curtas distâncias no ar, estão sujeitas à gravidade e geralmente atingem até 1 metro de distância. A máscara cirúrgica e os outros EPIs conferem uma proteção aceitável para esta forma de transmissão.^{6,11}
- Contudo, e isso é particularmente relevante na otorrinolaringologia e não tem sido reconhecido de forma clara a não ser em estudos e documentos mais recentes, a transmissão do vírus também se faz por **aerossóis** que são produzidos (mas em menos grau do que as gotículas) por **eventos** como a tosse ou o espirro, que são muitíssimo frequentes na observação clínica da ORL¹¹. O que era já reconhecido e valorizado era a geração de aerossóis relacionada com **procedimentos** tais como a laringoscopia, a entubação endotraqueal ou procedimentos mais invasivos como a traqueotomia ou a cricotirotomia. Por isso muitas recomendações, desatualizadas de acordo com o nosso ponto de vista, só elevava o nível de proteção para estes procedimentos e não para os eventos geradores de aerossóis que ocorrem na observação ORL da via aérea mais simples. Os aerossóis são pequenas partículas contendo vírus que permanecem suspensos no ar, viajam rapidamente, e podem atingir distâncias maiores. São facilmente aspirados passando pelo espaço entre a máscara cirúrgica e a face, pelo que esta não protege dos aerossóis. A máscara de proteção individual mínima capaz de conferir proteção é um respirador FFP2 (exemplo: “bico de pato”) ou FFP3, dispositivos em que o ar inspirado passa pelo tecido da própria máscara, que tem um filtro para partículas.^{6,11}



K – Considerações finais

- A ORL é uma especialidade de alto risco para a infeção por COVID-19. O primeiro médico a morrer na epidemia SARS em Hong-Kong em 2003 foi um ORL; o primeiro médico a morrer em todo o mundo de COVID-19 foi um ORL; e o primeiro médico a morrer em Itália de Covid-19 foi um ORL⁸;
- A ORL lida muito frequentemente por contacto próximo com a via aérea superior, local de alojamento e fonte de contaminação preferencial do COVID-19, mesmo nas avaliações clínicas mais rotineiras e simples da especialidade;
- As recomendações relativas aos equipamentos de proteção individual, mesmo as emitidas por diversas autoridades de saúde, não se debruçaram de forma suficiente sobre a especificidade e risco decorrentes da observação dos doentes pela nossa especialidade;
- Por outro lado, devido à escassez de equipamentos de proteção individual em muitas das instituições (resultante do não planeamento da sua aquisição pelas instituições mas também pelo desperdício e má utilização por parte dos profissionais) e devido à falta de consenso a nível internacional e científico sobre a matéria, muitos decisores, para controlar os gastos dos equipamentos, têm emitido opiniões ou orientações relativas aos *standards* para a utilização dos EPI que são um *downgrading* relativamente às melhores práticas;
- Esse *downgrading* (desvalorização) prejudica, em primeiro lugar, os especialidades com risco elevado ou em que o risco já foi bem identificado mas ainda não suficientemente divulgado, como é o caso da ORL (ou da oftalmologia).¹²
- A reação obrigatória dos ORL a esta situação é uma consciencialização e divulgação dos riscos de infeção pelo COVID-19 inerentes à prática da nossa especialidade, e uma maior exigência na proteção dos profissionais⁸. Terão que ser os otorrinolaringologistas a trazer o assunto à discussão e a emitir recomendações específicas para a sua prática, baseadas na evidência científica e suportadas pela sua experiência no terreno. Essa experiência inclui a verificação de que a nossa ORL é das especialidades com maior taxa de profissionais infetados pelo COVID-19 e fatalidades.
- Estas recomendações são válidas para a data atual, mas poderão ter que ser atualizadas em função da evolução da pandemia.

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SPORL-CCP - INFORMAÇÃO COVID-19

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Caros Colegas e Sócios da SPORL-CCP,

A Sociedade Portuguesa de Otorrinolaringologia e Cirurgia de Cabeça e Pescoço, tem acompanhado de perto a recente pandemia por coronavírus COVID-19, a qual e à data atual está numa fase de crescimento exponencial no nosso país e ainda sem perspectivas do seu controle no curto prazo.

O Otorrinolaringologista, pelo tipo de porta de entrada da infeção, é seguramente um dos profissionais de saúde mais exposto ao risco de contágio e também ao potencial de disseminação da doença, que se reveste de uma elevada taxa de transmissibilidade pela via respiratória.

Recorda-se que muitos dos doentes infetados com COVID-19, na fase inicial apresentam sintomas frustes e inespecíficos das vias aéreas superiores, que não devem ser desvalorizados, e que os levam a recorrer a uma observação por ORL.

É por isso premente que todos os Colegas estejam completamente esclarecidos sobre as medidas imediatas a tomar, de acordo com as diretivas divulgadas pela Ordem dos Médicos, Ministério da Saúde, Direção Geral da Saúde e outras entidades competentes nacionais e internacionais.

No presente contexto, é fortemente recomendado haver:

- Conhecimento apropriado dos equipamentos de proteção adequados e medidas de prevenção a observar
- Reconhecer quais os canais de referência para diagnóstico
- Suspender temporariamente os atos médicos não urgentes, sejam consultas ou cirurgias
- Respeitar técnicas seguras de observação e intervenção na via aérea.¹

Anexamos abaixo alguns links,¹⁻⁷ cuja consulta recomendamos, por os considerarmos úteis para uma atualização sobre o tema.

Deixamos um voto de esperança para que, com a colaboração de todos, esta crise venha a ser debelada o mais rapidamente possível.

A Direção da SPORL-CCP

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SPORL-CCP - RECOMENDAÇÕES PARA PROCEDIMENTOS ENDOSCÓPICOS ORL

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RECOMENDAÇÕES PARA PROCEDIMENTOS ENDOSCÓPICOS ORL

INTRODUÇÃO:

- Face ao desafio clínico que representa atualmente a infeção por SARS-Cov-2, e sabendo que a Otorrinolaringologia é das especialidades que apresenta maior risco de exposição¹ pela proximidade das áreas anatómicas que albergam focos de multiplicação ativa ou reservatório de cargas virais acentuadas, os procedimentos diagnósticos ou terapêuticos que interessam as vias aerodigestivas superiores revestem-se de particular risco.
- Por outro lado, confrontados com a evidência epidemiológica de uma fase de supressão que sucederá a fase de mitigação e, previsivelmente, um segundo pico epidémico, urge a tomada de medidas que, salvaguardando os profissionais de saúde, permitam a continuação da atividade assistencial e a prestação de cuidados da esfera ORL.
- Tendo em consideração a especificidade dos exames endoscópicos ORL, a Comissão de Laringologia e Voz da SPORL-CCP propõe as seguintes recomendações direcionadas a estes procedimentos.

CONSIDERAÇÕES IMPORTANTES

- A transmissão do vírus parece fazer-se predominantemente por gotículas/aerossóis (produzidas pela tosse, pelos espirros e pela fala) e pelo contacto direto ou indireto com superfícies ou equipamento contaminado. As gotículas viajam por curtas distâncias no ar e estão sujeitas à gravidade²
- Um estudo recente³ confirmou a exposição significativa e não reconhecida do rosto do endoscopista em contexto de Endoscopia Digestiva Alta, a amostras biológicas potencialmente infecciosas durante a endoscopia
- Os procedimentos de endoscopia exigem curta distância física dos pacientes para o clínico e, de acordo com estudos realizados durante o surto global de SARS de 2003, gotículas de pacientes infetados podem alcançar pessoas localizadas a cerca de 1,80m de distância da fonte⁴

- Caracteristicamente 80 % dos doentes infetados com o COVID-19 são assintomáticos ou apresentam sintomas ligeiros que não são incluídos nos critérios clínicos para o caso suspeito.⁵ Esta percentagem é ainda mais alta nos doentes em fase inicial de incubação, na qual já são transmissores da doença.

- A estratificação do risco e utilização de Equipamento de Proteção Individual (EPI) adequado, delineada genericamente pela OMS,^{6,7} tem vindo a ser revista e adaptada às especificidades da nossa especialidade pelas Sociedades Científicas e Colégios de Especialidade. Os procedimentos endoscópicos ORL carecem de recomendações específicas pelas sociedades de referência, relativas a critérios clínicos e indicações para procedimentos endoscópicos urgentes, momento apropriado e condições técnicas para a sua realização. Na ausência de consensos e evidências científicas, a metodologia seguida baseou-se na extrapolação da experiência dos que nos antecederam na evolução da pandemia e na revisão acelerada dos pilares de raciocínio clínico à luz do conhecimento atual. Este é naturalmente um documento que, nas circunstâncias atuais, não deve ser considerado com caráter definitivo, pelo que todo o aporte adicional de informação será bem recebido para atualizações futuras e delinear novas estratégias clínicas.

As medidas apontadas visam criar um ambiente seguro, tanto quanto possível, para todos os elementos envolvidos na realização dos procedimentos: os clínicos, os técnicos e os doentes.

A – EXAMES ENDOSCÓPICOS EM CONTEXTO DE CONSULTA EXTERNA ORL E SERVIÇO DE URGÊNCIA:

- CONSIDERAÇÕES GERAIS:

- Este é um procedimento **gerador de aerossóis**
- Deverão ser realizados apenas se urgentes ou inadiáveis (exemplo: estridor, avaliação de doentes oncológicos, obstrução das vias aéreas, corpos estranhos)
- Os exames endoscópicos não deverão ser realizados em contexto de Enfermaria, pelo risco de exposição de outros doentes
- Deverão permanecer na sala os elementos mínimos necessários à realização do procedimento
- O acompanhante não poderá permanecer na sala de endoscopia, salvo condições excecionais (exemplo: criança, limitação motora ou cognitiva)

- CONSIDERAÇÕES TÉCNICAS:

- Deverão ser **abolidas** as **laringoscopias rígidas** e **laringoscopias indiretas**, pelo maior risco de projeção de aerossóis sobre o médico
- Em alternativa deverão ser realizadas **nasofaringolaringoscopias (NFL)**
- A endoscopia deve ser realizada por **monitoração por vídeo**, e não pelo uso da ocular
- Deverão ser abolidos os sprays anestésicos ou vasoconstritores pelo risco de aerossolização
- Considerar, se necessário, o uso de mecha embebida em solução anestésica e/ou vasoconstritor, em vez de spray
- No caso de haver disponibilidade, o exame deverá ser preferencialmente realizado numa sala equipado com fluxo de ar laminar

- EQUIPAMENTO:

- O nível de proteção necessário é proporcional ao risco, contudo, em fase de mitigação e pelo anteriormente exposto, o risco atual é elevado
- **Equipamento de Proteção Individual:** o mínimo recomendável: **EPI-NÍVEL 2**
 - Bata descartável + Avental (se bata não for impermeável)
 - Touca
 - Proteção ocular: Óculos/ Viseira
 - 2 pares luvas
 - Máscara facial:
 - A proteção mínima no contexto é **FFP2**
 - A proteção recomendada será **FFP3**
 - FFP2 tem 94% de percentagem de filtração percentagem e vazamento máximo de 8% para dentro.
 - FFP3 possui 99% de percentagem de filtragem e vazamento de 2% para dentro.
 - Os **respiradores reutilizáveis** têm filtros que precisam ser trocados a cada 3-8 horas⁸
 - O paciente deve permanecer com máscara cirúrgica até ao início do procedimento e recolocá-la logo após o seu término
- A remoção do EPI é um momento de risco do procedimento e deve cumprir-se as recomendações para não contaminar o próprio ou terceiros durante esse processo
- Em caso documentado de infeção por **COVID-19** deve ser usado **EPI-NÍVEL 3** e o exame realizado, sempre que possível, em **sala de pressão negativa**⁹

- CONSIDERAÇÕES SOBRE A DESINFECÇÃO-HIGIENIZAÇÃO:

- Após cada procedimento o clínico deves abandonar a sala e proceder aos **registos clínicos noutra gabinete**
- Equipamentos de endoscopia deverão ser tratados pelo pessoal auxiliar da mesma forma que os **COVID-19 positivo** quer no transporte quer na desinfeção
- Forte recomendação para a manipulação e transporte do endoscópio pelo pessoal auxiliar cumprir os cuidados de assepsia máximos
- Deverá existir um tempo de **pausa mínimo de 30 minutos** para renovação do ar, impedindo que aerossóis ambientes permaneçam em suspensão
- A renovação de ar na sala deverá, se possível, ser realizada por teto de fluxo laminar com filtros H14 (filtragem de partículas 50-200 nanómetros) e o n.º de renovações por hora ser superior a 25.
- No final dos 30 minutos de renovação do ar, **todos os equipamentos fixos** da sala deverão ser submetidos a **desinfeção** antes de ser admitido outro doente, sobretudo se houve evidência de projeção de partículas
- A sala deve estar **o mais vazia possível**, apenas com o material essencial que deverá estar isolado por capas de plástico sempre que possível

- QUADRO RESUMO (Exames Endoscópicos Diagnósticos em contexto de Consulta Externa e Serviço de Urgência):

Indicações	Técnica	Equipamento (EPI)	Desinfecção
Limitar a urgentes e inadiáveis (exemplo: obstrução das vias aéreas, corpos estranhos, doentes oncológicos)	Recomendação contra: - Laringoscopia indireta - Laringoscopia rígida - Sprays	EPI Nível 2 - FFP2: mínimo recomendado - FFP3 fortemente recomendado	- Abandonar a sala após o procedimento - Registos clínicos noutra gabinete - Pausa 30 minutos, só depois desinfecção/ higienização ou - Sala com fluxo laminar - De acordo com as recomendações COVID-19+
	Recomendação a favor: - Nasofaringolaringoscopia - Monitorização por vídeo - Sala com fluxo laminar - Mecha nasal (se necessário)	Doente COVID-19 +	

B- EXAMES E INTERVENÇÕES CIRÚRGICAS ENDOSCÓPICAS EM CONTEXTO DE BLOCO OPERATÓRIO:

- LARINGOSCOPIA DIRECTA
- MICROCIRURGIA LARINGEA
- ESOFAGOSCOPIA RIGIDA

- CONSIDERAÇÕES GERAIS:

- No bloco operatório, como nas recomendações anteriores, deverão ser apenas realizadas se urgentes ou inadiáveis
- A não ser que o doente esteja comprovadamente infetado por SARS-CoV-2, as normas recomendam a **realização de 2 testes pré-operatórios**, sendo o último teste realizado nas 24-48 horas prévias ao procedimento¹⁰
- Contudo, dada a existência de uma percentagem significativa de testes negativos e a existência de casos relatados de positividade posterior, as recomendações desta Comissão são no sentido de manter um nível de proteção elevada mesmo com 2 testes negativos, no contexto epidemiológico atual
- A obtenção de um **teste COVID-19 positivo** deve fazer repensar a prioridade cirúrgica⁹ (agressão cirúrgica em doente infetado mesmo que assintomático com possível comprometimento do resultado cirúrgico; da proteção dos profissionais envolvidos e dos doentes com quem possa vir a ter contacto, na Unidade de Recobro Pós-Anestésico, Transporte, Enfermaria, etc.) e deferir a intervenção, se possível, até à obtenção da negatificação.

- CONSIDERAÇÕES TÉCNICAS:

- A **entubação e a extubação** devem ser sempre feitos dentro da sala de bloco operatório com os EPIs adequados (*vide* recomendações de TRAQUEOTOMIA)
- No momento da entubação e extubação, só deverá estar dentro da sala o **Anestesista e o Enfermeiro de Anestesia**
- A renovação de ar na sala deverá ser feita por **teto de fluxo laminar** com filtros H14 (filtragem de partículas 50-200 nanómetros) e o n.º de renovações por hora ser superior a 25 e **pressão negativa**
- Na impossibilidade de pressurização negativa na sala operatória, **NUNCA** poderá haver pressão positiva.
- Só após **10 min de concluída a entubação** é que a restante equipa cirúrgica poderá entrar na sala (passaram 3 ciclos de renovação do ar), para início da intervenção – inclui instrumentista e abertura de material
- O **cuff** deverá ter insuflação estanque impedindo aerossolização diretamente da via aérea inferior pela inexistência de tamponamento faríngeo nas microcirurgias laríngeas
- Deverá ser privilegiado o uso de **instrumentos cirúrgicos frios**
- Embora todos os nossos procedimentos endoscópicos das vias aerodigestivas superiores se enquadrem na categoria de alto risco, o uso de instrumentos quentes ou elétricos (laser, coblation, diatermia, microdebrider, etc.) aumenta o perigo de geração de aerossóis. A aspiração contínua de fumos/aerossóis endoluminais só é recomendável se for imprescindível o uso de uma destas técnicas.
- Devem permanecer o **mínimo de profissionais de saúde necessários** na sala onde decorre o procedimento cirúrgico
- A sala deve estar o mais vazia possível, apenas com o **material essencial** que deverá estar isolado por capas de plástico sempre que possível
- As **esofagoscopias rígidas** estritamente necessárias e inadiáveis (exemplo: extração de corpos estranhos, estadiamento neoplásico, etc.) devem cumprir as **mesmas recomendações** dos restantes procedimentos endoscópicos

- EQUIPAMENTO:

- No contexto epidemiológico atual, o Equipamento de Proteção Individual (EPI) deverá ser, como recomendado para a Traqueotomia, o **EPI – NÍVEL 3**

- QUADRO RESUMO (Exames e Intervenções Cirúrgicas Endoscópicas em contexto de Bloco Operatório):

Indicações	Técnica	Equipamento (EPI)	Desinfeção
-Limitar a urgentes e inadiáveis - Procedimentos abrangidos: <ul style="list-style-type: none"> • LARINGOSCOPIA DIRECTA • MICROCIRURGIA LARÍNGEA • ESOFAGOSCOPIA RÍGIDA 	- Entubação e extubação na sala só com Anestesista e Enfermeiro - Pausa 10 min. - entrada da restante equipe - Instrumentos cirúrgicos frios - Mínimo de profissionais e equipamentos na sala - Sala com fluxo laminar e pressão negativa (abolir pressão positiva)	- EPI Nível 3	- De acordo com as recomendações COVID-19+

COMENTÁRIOS FINAIS:

Aguardamos com expectativa meios técnicos que nos permitam de uma forma mais segura a avaliação e estratificação do risco. A sensibilidade dos testes, à data nos 70%, não nos permitem excluir a infeção por SARS-CoV2, mesmo na presença de dois testes negativos.

A disponibilidade de testes serológicos para avaliação do estado de imunidade, a possível imunidade de grupo, a suposta sazonalidade e por fim a tão aguardada vacina, serão meios técnicos que esperemos nos ajudem, no futuro, a reduzir as medidas agora propostas.

Estas recomendações procuram complementar outras divulgadas pela SPORL-CCP, são válidas à data atual, mas poderão ser atualizadas em função da evolução da presente pandemia por SARS-CoV-2.

Sociedade Portuguesa de Otorrinolaringologia e Cirurgia de Cabeça e Pescoço, Comissão de Laringologia e Voz

Nota: Este documento foi elaborado com o aval do Colégio da Especialidade de Otorrinolaringologia da Ordem dos Médicos

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SPORL-CCP - RECOMENDAÇÕES PARA A REALIZAÇÃO DE TRAQUEOTOMIA EM DOENTE COM COVID-19

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Colégio da Especialidade de Otorrinolaringologia da Ordem dos Médicos
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Contextualização

A COVID-19 é uma patologia extremamente contagiosa. O modo de transmissão é feito através de aerossóis, gotículas e superfícies, o que se traduz num risco significativo para os profissionais de saúde responsáveis pelo tratamento de doentes com esta patologia, especialmente quando se realizam procedimentos relacionados com a via aérea.

A traqueotomia cirúrgica, por ser um procedimento em que são produzidos muitos aerossóis, confere um **risco muito elevado de infeção dos profissionais de saúde** que participam na realização deste procedimento e também naqueles que contactam com o doente enquanto este tiver uma traqueotomia e infeção ativa. Por este motivo, recomenda-se que a traqueotomia seja realizada apenas quando considerada absolutamente necessária.

Perante o facto de Portugal se encontrar no nível três (mitigação) do Plano de Nacional de Preparação e Resposta à Doença por novo coronavírus (COVID-19), em que já se encontram estabelecidas cadeias de transmissão em território nacional, e pelo risco elevado de contaminação dos profissionais de saúde que participam na traqueotomia cirúrgica, é **obrigatória a correta proteção de todos os elementos diretamente envolvidos na realização do procedimento em todo e qualquer doente.**

A equipa médica e de enfermagem devem estar familiarizados com estas diretrizes, assim como com todos os equipamentos de proteção individuais adequados, que devem estar disponíveis para uso imediato.

Com este documento, pretende-se definir as normas orientadoras que os profissionais de saúde devem seguir para a realização de uma traqueotomia cirúrgica, nomeadamente:

- Equipamento de proteção individual;
- Constituição da equipa de profissionais de saúde;
- Material necessário;
- Recomendações para realização de traqueotomia cirúrgica eletiva (doente entubado):
 - Protocolo cirúrgico;
 - Indicações cirúrgicas;
- Recomendações para realização de traqueotomia cirúrgica em doente não entubado:
 - Protocolo cirúrgico;
 - Indicações cirúrgicas;
- *Check-list* peri-operatória;
- Cuidados no pós-operatório.

Recomendações Gerais

- Uma vez que Portugal está no nível três (mitigação) do **Plano de Nacional de Preparação e Resposta à Doença por novo coronavírus (COVID-19)**, as orientações destas recomendações devem ser cumpridas em todos os doentes, **a não ser que o doente esteja comprovadamente não infectado por SARS-Cov-2** (2 testes negativos, sendo o último teste realizado nas 24-48 horas prévias ao procedimento);

- Pelos riscos associados, a realização da traqueotomia cirúrgica deve ser cuidadosamente ponderada entre a anestesia, cuidados intensivos, otorrinolaringologia e infecciologia nos aspetos seguintes:
 - Discussão sobre o *timing* preferível para a realização do procedimento. Deve-se optar, sempre que possível, por efetuar a traqueotomia cirúrgica o mais tarde possível, idealmente num período sem infeção ativa, e enquanto se verificar que esta é benéfica para o doente;
 - Discussão sobre o local para a realização do procedimento: a traqueotomia cirúrgica deve realizar-se preferencialmente numa sala com sistema de pressão negativa e que obrigue à menor mobilização possível do doente (preferencialmente na Unidade de Cuidados Intensivos, quando existir quarto de isolamento com pressão negativa disponível);
- Devem permanecer o mínimo de profissionais de saúde necessários na sala onde decorre o procedimento cirúrgico;
- Devem participar na traqueotomia cirúrgica os profissionais de saúde com maior experiência na realização deste procedimento, de forma a demorar o mínimo tempo possível;
- A sala deve estar o mais vazia possível, apenas com o material essencial que deverá estar isolado por capas de plástico sempre que possível;
- Deve ser confirmado que todos os itens da *check-list* em anexo são cumpridos; caso isso não se verifique deve-se adiar o procedimento até que seja possível a sua realização cumprindo todos os pré-requisitos;
- A coordenação da sala deverá ser feita pelo anestesista e deverá ser respeitada por todos;
- Antes de entrar na sala e iniciar o procedimento, deve ser discutida e revista entre todos os intervenientes (anestesia, otorrinolaringologia, enfermagem) qual a função de cada um;
- O uso de equipamento de proteção individual (EPI) torna difícil a comunicação entre os elementos da equipa: a estratégia tem que ser definida de forma esclarecedora previamente;
- Para facilitar a comunicação entre os vários elementos da equipa, tem que se falar significativamente mais alto e é necessário usar linguagem corporal adicional;
- A qualidade do campo cirúrgico vai estar limitada, não só pelo EPI (que dificulta a visão), mas também pelo facto de o procedimento poder não ser realizado numa sala operatória;
- Deve ser ajustada a temperatura da sala, tendo em conta que todos os profissionais vão estar com múltiplas camadas de proteção;
- Tomar particular atenção à remoção do EPI no final do procedimento, para evitar a auto-contaminação; esta etapa deve ser supervisionada por um 2º elemento com pleno conhecimento do controlo de infeção.

Equipamento de Proteção Individual (EPI) – NÍVEL 3

Usar sempre as medidas de proteção apropriadas. Ao tratar doentes com doenças altamente contagiosas, é de extrema importância a proteção dos profissionais de saúde. Estes devem-se recusar a realizar a traqueotomia se não estiver disponível todo o equipamento de proteção individual necessário à sua realização.

Equipamento de Proteção Individual necessário para realização de traqueotomia cirúrgica

- Fato do bloco (descartável, se disponível);
- Fato completo e botas tipo Barrier Man;
- Se fato completo e botas tipo Barrier Man não disponível:
 - Cógula;
 - Perneiras e proteção de calçado;
 - Bata impermeável
- Máscara de alta proteção (FFP2 ou FFP3);
- Proteção ocular (óculos ou viseira);
- Touca;
- Bata cirúrgica impermeável;
- Dois pares de luvas cirúrgicas.

Colocação do Equipamento de Proteção Individual

Um profissional de saúde com pleno conhecimento do controle de infecção e na presença do protocolo de colocação do EPI deve ler e supervisionar a colocação do EPI.

O equipamento de proteção individual é colocado em duas fases, fora da sala operatória e dentro da sala operatória.

Fora da sala operatória:

1. Fato do bloco (descartável, se disponível);
2. Remover todos os adornos (relógio, anéis, brincos...);
3. Primeira higienização das mãos;
4. Colocar a touca (deve tapar os pavilhões auriculares e a maior área possível da testa);
5. Colocar máscara de alta proteção tipo FFP2 ou FFP3 (os elásticos não podem ficar cruzados);
6. Colocar o primeiro par de luvas;
7. Neste ponto há duas opções:
 - a. Vestir o fato completo e botas tipo Barrier Man;
 - b. Caso o fato tipo Barrier Man não esteja disponível devem ser utilizadas por esta ordem: proteção de calçado, perneiras, cógula, bata impermeável;
8. Colocar óculos de proteção ou viseira;
9. Segunda higienização das mãos.

Dentro da sala operatória:

9. Vestir segunda bata cirúrgica impermeável;
10. Calçar segundo par de luvas cirúrgicas.

Remoção do Equipamento de Proteção Individual

Um profissional de saúde com pleno conhecimento do controle de infecção e na presença do protocolo de colocação do EPI deve ler e supervisionar a colocação do EPI.

Durante a remoção do EPI, os movimentos devem ser os mais suaves possíveis de forma a libertar o mínimo de aerossóis.

O equipamento de proteção individual é removido em duas fases, dentro da sala operatória e fora da sala operatória.

Dentro da sala operatória:

1. Remover o segundo par de luvas cirúrgicas e substituir por um par de luvas limpo;
2. Remover a segunda bata cirúrgica e o segundo par de luvas ao mesmo tempo, inclinando o tronco para a frente com um movimento suave em abraço; durante a remoção da bata esta deve ir sendo dobrada **sempre com a parte externa para dentro;**
3. Higienizar as luvas;
4. Abandonar a sala;

Fora da sala operatória:

5. Remover a primeira bata cirúrgica e o primeiro par de luvas ao mesmo tempo, inclinando o tronco para a frente com um movimento suave em abraço; durante a remoção da bata esta deve ir sendo dobrada **sempre com a parte externa para dentro;**
6. Higienizar as mãos;
7. Remover as perneiras e proteção de calçado (sempre com as mãos por dentro);
8. Higienizar as mãos;

9. Remover óculos de proteção ou viseira;
10. Remover a cógula, máscara e touca (todos estes elementos de proteção podem ser removidos simultaneamente; devem ser colocadas as mãos por dentro da touca na zona da nuca e remover os elementos de proteção com um movimento de trás para a frente);
11. Os profissionais de saúde devem ir diretamente ao vestiário para tomar um banho;
12. Devem gargarejar com solução salina em abundância e limpeza da cavidade nasal com cotonete embebido em álcool a 70%.

Constituição da Equipa de Profissionais de Saúde

Os profissionais de saúde envolvidos na realização da traqueotomia cirúrgica devem ser os mínimos indispensáveis. Os profissionais de saúde envolvidos na realização da traqueotomia cirúrgica devem ser os mais experientes na realização deste procedimento, dentro dos profissionais que estão disponíveis no momento para a sua realização. O objetivo é que o procedimento cirúrgico seja realizado de forma segura e no mínimo tempo possível.

Assim, a equipa deverá ser constituída por:

- 2 médicos de otorrinolaringologia (o cirurgião principal deve ser o médico com maior experiência);
- 1 médico anestesista/médico especialista em cuidados intensivos;
- 1 enfermeiro instrumentista;
- 1 enfermeiro anestesista/circulante;
- 1 elemento de apoio fora da sala, mas em comunicação com esta e que deverá estar sempre disponível.

Material Necessário

- Material cirúrgico padrão para traqueotomia cirúrgica (idealmente descartável);
- Material cirúrgico padrão para cricotirotomia (idealmente descartável);
- Cânula de traqueotomia **não fenestrada e com cuff e filtro antiviral**;
- Plano duro;
- Pantof;
- Sistema de aspiração em circuito fechado com filtro antiviral;
- Balas de adrenalina para uma infiltração extensa;
- Rolo para colocação baixo dos ombros;
- Métodos de hemostase alternativos (surgicel®, spongostan®, fio tipo vycril® para laqueação).

Nota: Uma vez que a coagulação com diatermia pode produzir pequenas partículas que podem atuar como veículo de transmissão do vírus, deve-se evitar o uso de sistemas de eletrocoagulação (como o eletrocautério monopolar ou bipolar). Esta recomendação diz especialmente respeito à utilização dos sistemas de eletrocoagulação na traqueia, sobretudo depois da incisão na mucosa traqueal. Não existem evidências definitivas de que a recomendação relativa à evicção da utilização de sistemas de eletrocoagulação se deva estender para todos os tecidos, no entanto a sua evicção deve ser ponderada pela equipa cirúrgica desde a pele até à incisão na traqueia, dada a evidência de que o vírus circula nos vasos sanguíneos demonstrada pela deteção do RNA viral no plasma e no soro dos doentes infetados.

Recomendações para realização de traqueotomia cirúrgica eletiva (doente entubado)

Protocolo cirúrgico

Evitar o uso de sistemas de eletrocoagulação (como eletrocautério monopolar ou bipolar). A coagulação com diatermia pode produzir pequenas partículas que podem atuar como veículo de transmissão do vírus (ver recomendação descrita na secção material necessário).

Utilizar métodos alternativos de hemostase, tais como a laqueação com fio de sutura ou a utilização de materiais hemostáticos absorvíveis (surgicel®, spongostan®).

Evitar a aspiração de sangue durante toda a cirurgia e a aspiração de secreções de secreções endotraqueais após a abertura da traqueia. Estes gestos aumentam muito o risco de infeção dos profissionais de saúde que participam no procedimento.

Utilizar sempre cânulas de traqueotomia não fenestradas com *cuff*.

1. Cumprir as recomendações gerais previamente descritas;
 2. Posicionar o doente, desinfetar o campo operatório e colocar os campos cirúrgicos de acordo com a técnica cirúrgica habitual;
 3. Estabelecer uma pré-oxigenação adequada para o doente (100% de oxigénio durante 5 minutos);
 4. Realizar o relaxamento muscular completo do doente durante todo o procedimento para evitar o reflexo de tosse ou qualquer movimento do doente;
 5. Antes do início da técnica cirúrgica, deve-se parar a ventilação mecânica; se não for possível, esta deve ser reduzida ao mínimo necessário e ser **obrigatoriamente interrompida desde o momento em que se abre a traqueia até ao momento em que a cânula de traqueotomia está corretamente posicionada e com o *cuff* insuflado com de filtro antiviral corretamente acoplado;**
 6. A aspiração das secreções deve ser feita pelo anestesista pelo tubo endotraqueal e a aspiração deve ser mantida intraluminal **para evitar manipulação adicional. A aspiração deve ser em circuito fechado e com filtro antiviral;**
 7. Uma vez cumpridos os passos anteriores, pode ser iniciada a técnica cirúrgica;
 8. Abrir a traqueia (**confirmar sempre que a ventilação mecânica foi interrompida; não romper o *cuff* do tubo endotraqueal durante a abertura da traqueia;**);
 9. Realizar o retalho de Björk*ou referenciar a traqueia com fios de sutura para facilitar a colocação da cânula de traqueotomia e a sua recolocação no caso de descanulação acidental no pós-operatório; os fios de sutura utilizados devem ser reabsorvíveis, para evitar posterior manipulação da via aérea e minimizar mais uma vez o risco de contaminação;
 10. Remover parcialmente o tubo endotraqueal (3 cm);
 11. Colocar a cânula de traqueotomia e insuflar o *cuff* e colocar de filtro antiviral;
 12. Conectar o swivel à cânula de traqueotomia e confirmar a correta conexão de todo o sistema de ventilação.
Somente depois disto a ventilação pode ser reiniciada;
- *Retalho de Björk: suturar o retalho anterior da traqueia à pele e tecido celular subcutâneo.
13. Confirmar o correto posicionamento da cânula e ventilação do doente através da avaliação da curva de capnografia e visualização da expansão do tórax do doente (**não fazer auscultação pulmonar do doente;**);
 14. Remover o tubo endotraqueal (colocar imediatamente em lixo adequado que deve ser selado);
 15. Fixar a cânula de traqueotomia à pele através de suturas reabsorvíveis e colocar fita de nastro;
 16. Remover o material de proteção do cirurgião dentro da sala onde decorreu a intervenção de acordo com as normas vigentes;
 17. Deixar a sala onde decorreu a cirurgia de acordo com as regras.

Indicações cirúrgicas

A realização de traqueotomia cirúrgica eletiva deverá cumprir todos os requisitos descritos nas recomendações gerais, equipamento de proteção individual, equipa cirúrgica e material necessário e deve ser recusada, tanto quanto possível, em condições inadequadas.

Devido ao elevado risco de infeção dos profissionais de saúde que participam na realização da traqueotomia cirúrgica, a decisão de realizar este procedimento de forma eletiva deve resultar de uma discussão multidisciplinar entre os médicos de anestesia, cuidados intensivos, otorrinolaringologia e infecciologia. A decisão deve ser tomada após avaliação de cada caso em particular.

Em termos gerais, a traqueotomia cirúrgica eletiva nos doentes com COVID-19 deve ser realizada nos seguintes casos:

- Doente com entubação endotraqueal prolongada em que não é previsível remover a ventilação mecânica invasiva num curto prazo de tempo;
- Doente em que a ventilação mecânica invasiva por tubo endotraqueal é difícil devido por exemplo a acumulação de secreções no tubo endotraqueal;
- Em todos os casos, quando a traqueotomia ofereça um benefício efetivo para o doente que justifique o risco do procedimento para os profissionais de saúde envolvidos na sua realização e no acompanhamento do peri-operatório.

Recomendações para realização de traqueotomia cirúrgica em doente não entubado

Protocolo cirúrgico

Evitar o uso de sistemas de eletrocoagulação (como eletrocautério monopolar ou bipolar). A coagulação com diatermia pode produzir pequenas partículas que podem atuar como veículo de transmissão do vírus (ver recomendação descrita na secção material necessário).

Utilizar métodos alternativos de hemostase, tais como a laqueação com fio de sutura ou a utilização de materiais hemostáticos absorvíveis (surgicel®, spongostan®).

Evitar a aspiração de sangue durante toda a cirurgia e de secreções endotraqueais após a abertura da traqueia. Estes aumentam o risco de infeção dos profissionais de saúde que participam no procedimento.

Utilizar sempre cânulas de traqueotomia não fenestradas com *cuff*.

Se se realizar a cricotirotomia cirúrgica devem ser utilizadas duas caixas independentes de material cirúrgico, uma para a cricotirotomia e outra para a traqueotomia (que vai ser efetuada logo após a cricotirotomia).

1. Cumprir as recomendações gerais previamente descritas;
2. Posicionar o doente, desinfetar o campo operatório e colocar os campos cirúrgicos de acordo com a técnica cirúrgica habitual (caso seja possível);
3. Estabelecer uma pré-oxigenação adequada para o doente (100% de oxigénio durante 5 minutos, se possível);
4. Realizar um relaxamento muscular completo para evitar tosse e os movimentos do doente;
5. Se se realizar traqueotomia, deve-se seguir os passos previamente descritos na secção anterior;
6. Se se realizar cricotirotomia cirúrgica devem ser seguidos os seguintes passos (se for utilizado kit de cricotirotomia devem ser seguidas as regras de utilização de cada kit):
 - a. Identificar as referências anatómicas (cartilagem tiroide e cricóide) e estabilizar a laringe com a mão não dominante;
 - b. Realizar uma incisão vertical na pele, na linha média e interessando a área entre a cartilagem tiroide e cricóide;
 - c. Identificar a membrana cricotiroideia e abrir a mesma através de incisão horizontal;
 - d. Abrir o espaço entre a cartilagem tiroide e cricoide (por exemplo com pinça hemostática ou pinça de três ramos) e colocar a cânula de traqueotomia;
 - e. Insuflar *cuff* da cânula de traqueotomia;
 - f. Conectar o swivel à cânula de traqueotomia e confirmar a correta conexão de todo o sistema de ventilação. **Somente depois disto a ventilação pode ser iniciada;**
 - g. Confirmar o correto posicionamento da cânula e ventilação do doente através da avaliação da curva de capnografia e visualização da expansão do tórax do doente (**não fazer auscultação pulmonar do doente**);
 - h. Após estabilização do doente, e no mesmo tempo operatório, avançar para traqueotomia cirúrgica; mais uma vez, antes do início desta técnica cirúrgica, deve-se parar a ventilação mecânica; se não for possível,

esta deve ser reduzida ao mínimo necessário e ser **obrigatoriamente interrompida desde o momento em que se abre a traqueia até ao momento em que a cânula de traqueotomia está corretamente posicionada e com o cuff insuflado** e colocação de filtro antiviral;

- i. Abordar a parede anterior da traqueia através de uma nova incisão horizontal realizada cerca de 2 cm acima da fúrcula esternal;
- j. Abrir a traqueia (**confirmar que a ventilação mecânica foi interrompida**);
- k. Realizar o retalho de Björk ou referenciar a traqueia com fios de sutura para facilitar a colocação da cânula de traqueotomia, sobretudo se descanulação acidental no pós-operatório; os fios de sutura utilizados devem ser reabsorvíveis, para evitar posterior manipulação da via aérea e minimizar risco de contaminação;
- l. Colocar a cânula de traqueotomia e insuflar o *cuff* e colocar o filtro antiviral;
- m. Conectar o swivel à cânula de traqueotomia e confirmar a correta conexão de todo o sistema de ventilação. **Somente depois disto a ventilação pode ser reiniciada**;
- n. Confirmar o correto posicionamento da cânula e ventilação do doente através da avaliação da curva de capnografia e visualização da expansão do tórax do doente (**não fazer auscultação pulmonar do doente**);
- o. Remover a cânula inserida através da cricotirotomia e fechar a incisão (a cânula de traqueotomia removida deve ser imediatamente colocada em lixo adequado e selado);
- p. Fixar a cânula de traqueotomia à pele através de suturas reabsorvíveis e colocar o nastro para selagem da via aérea;
- q. Remover o material de proteção do cirurgião dentro da sala onde decorreu a intervenção de acordo com as normas vigentes;
- r. Deixar a sala onde decorreu a cirurgia de acordo com as regras.

Indicações cirúrgicas

A realização da traqueotomia cirúrgica em doente acordado ou cricotirotomia deverá cumprir todos os requisitos descritos nas recomendações gerais, equipamento de proteção individual, equipa cirúrgica e material necessário e deve ser recusada, tanto quanto possível, em condições inadequadas.

A traqueotomia cirúrgica em doente acordado ou a cricotirotomia devem ser evitadas o máximo possível pelo elevado risco de infeção dos profissionais de saúde que participam neste procedimento. No entanto, num doente com dispneia alta, em que não é possível assegurar a via aérea através de entubação endotraqueal, a realização destes procedimentos é necessária. A escolha do procedimento a realizar depende do grau de urgência em assegurar a via aérea do doente, devendo ser efetuada traqueotomia cirúrgica em situações urgentes e cricotirotomia seguida de traqueotomia cirúrgica em situações emergentes.

A cricotirotomia pode ser cirúrgica ou realizada com kit próprio desenhado para o efeito.

A decisão de realizar traqueotomia *versus* cricotirotomia (cirúrgica ou com kit próprio para o efeito) cabe à equipa cirúrgica de otorrinolaringologia após avaliação do doente e deve ser tomada previamente ao início do procedimento após avaliação.

Caso se suspeite de entubação endotraqueal difícil, deve ser notificado previamente o serviço de otorrinolaringologia dessa possibilidade para que os médicos otorrinolaringologistas estejam disponíveis e devidamente equipados aquando da tentativa de entubação endotraqueal.

Cuidados no pós-operatório

- Não deve ser realizada a troca da cânula de traqueotomia até que o doente esteja comprovadamente negativo. Esta troca deve ser sempre discutida com a infeccologia e, se for necessária, o equipamento de proteção individual deve ser o mesmo utilizado para a realização da traqueotomia (EPI nível 3);
- Deve-se evitar a humidificação do circuito de ventilação, uma vez que teoricamente diminui o risco de contaminação da sala, caso haja desconexão do circuito;
- O *cuff* deve permanecer sempre insuflado;
- Devem ser realizados todos os esforços para não desconectar o circuito de ventilação;
- Quando houver necessidade de aspiração de secreções, esta aspiração deve ser sempre realizada em circuito fechado e com filtro antiviral.

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HELPFUL COVID-19 TOOLS

- COVID-19 and Children : https://hms.harvard.edu/news/covid-19-children?utm_source=Silverpop&utm_medium=email&utm_term=field_news_item_3&utm_content=HMNews04062020
- <https://time.com/5816239/children-coronavirus/>
- https://hms.harvard.edu/news/covid-19-children?utm_source=Silverpop&utm_medium=email&utm_term=field_news_item_3&utm_content=HMNews04062020
- <https://www.entuk.org/covid-19>
- https://www.yoifos.com/sites/default/files/sforl_-_pediatrie_0.pdf

PERSONAL PROTECTIVE EQUIPMENT (PPE)

COMPARISON OF FILTERING CAPACITIES BETWEEN MASKS AVAILABLE IN AMERICA AND EUROPE

N95 vs FFP3 & FFP2

The most commonly discussed respirator type is N95. This is an American standard managed by NIOSH – part of the Center for Disease Control (CDC).

Europe uses two different standards. The “filtering face piece” score (FFP) comes from EN standard 149:2001. Then EN 143 standard covers P1/P2/P3 ratings. Both standards are maintained by CEN (European Committee for Standardization).

Let’s see how all the different standards compare:

Respirator Standard	Filter Capacity (removes x% of all particles that are 0.3 microns in diameter or larger)
FFP1 & P1	At least 80%
FFP2 & P2	At least 94%
N95	At least 95%
N99 & FFP3	At least 99%
P3	At least 99.95%
N100	At least 99.97%

As you can see, the closest European equivalent to N95 are FFP2 / P2 rated respirators, which are rated at 94%, compared to the 95% of N95.

Similarly, the closest to N100 are P3 rated respirators – with FFP3 following closely behind.

N95 (95%) = FFP2 / P2 (94%)



N99 (99%) = FFP3 (99%)

N100 (99.97%) = P3 (99.95%)



USEFUL VIDEOS FOR DONNING AND DOFFING PPE

- COVID-19 Personal Protective Equipment and Airway Management for the Operating Room: Demonstration : <https://youtu.be/d2sHRyAHKqI>
- COVID-19 Personal Protective Equipment and Airway Management for the Operating Room: https://youtu.be/_Q_ZeQSJxu0

VIDEO SHOWING A SAFE WAY TO PERFORM A DIRECT LARYNGOSCOPY AND BRONCHOSCOPY

- Performing a direct laryngoscopy and bronchoscopy in a COVID-19 patient:
<https://www.dropbox.com/s/m37taopk8xrgwl5/COVID%2019%20DLB.3.2020.mp4?dl=0>

PAPR

- Recommendations from the Boston Children's Hospital leadership :
 - A PAPR hood should be used in caring for a confirmed or suspected COVID-19 patient **if the provider cannot use an N-95 mask.**
 - Anytime a PAPR is used, it needs to be disinfected for re-use. **It definitely should not be discarded.**
 - There is considerable controversy as to whether a PAPR truly provides greater protection than a properly fitted N-95.
- Additional comment by Dr Michael Cunningham:
 - Colleagues at other institutions have reported headlights cannot be used with a PAPR, and the use of loops with PAPRs is also problematic. I suspect this is true of the use of the microscope and endoscopes as well.

COVID TESTING

- Data from China would suggest that virus is higher in the lungs than the nose, so theoretically, COVID testing from tracheal aspirate would be more sensitive than nasal swab.

Alan G. Cheng, MD, FACS, Associate Professor in Otolaryngology and Pediatrics, Director, Clinician Scientist Training Program, Chief Division of Pediatric Otolaryngology, Stanford University School of Medicine

RECENT/USEFUL PUBLICATIONS

- Canelli R, Connor CW, Gonzalez M, Nozari A, Ortega R. Barrier Enclosure during Endotracheal Intubation. *N Engl J Med*. April 2020;NEJMc2007589. doi:10.1056/NEJMc2007589
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- Frauenfelder C, Butler C, Hartley B, et al. Practical insights for paediatric otolaryngology surgical cases and performing microlaryngobronchoscopy during the COVID-19 pandemic. *International Journal of Pediatric Otorhinolaryngology*. March 2020:110030. doi:10.1016/j.ijporl.2020.110030
- Liu W, Zhang Q, Chen J, et al. Detection of Covid-19 in Children in Early January 2020 in Wuhan, China. *N Engl J Med*. 2020;382(14):1370-1371. doi:10.1056/NEJMc2003717

Or find at : <https://www.sciencedirect.com/science/article/pii/S0165587620301737?via%3Dihub>

BRITISH COLUMBIA CHILDREN'S HOSPITAL STAY SAFE AT HOME PROJECT

A short message from Dr Jeffrey P. Ludemann at BC Children's Hospital...

Dear friends and international colleagues in pediatric otolaryngology,

Please join the Global Pediatric Otolaryngology / UBC Covid19 Collaborative STAY SAFE AT HOME Injury Prevention Public Education Research Project (aka "LET'S KEEP KIDS IN THEIR HOMES SAFER"):

This a vital call to action. Caring by sharing, we save lives.
Thanks in advance for 5 - 10 minutes of your time and help:

Children at home need to remain Safe at Home.
Right now, an ounce of prevention is worth a tonne of cure.

Thus, it's vitally important to educate the public even more right now regarding prevention of Choking, Caustic Ingestion, Burns, Nasal FB and also EAC FB and EAC / TM trauma. Let's keep kids in their homes even safer.

<https://dontchoke.ubc.ca/>

Sincerely,

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Clinical Professor of Otolaryngology, University of British Columbia