

# IPOG COVID-19 SURVEY REPORT

APRIL 1<sup>ST</sup> 2020

-IN COLLABORATION WITH ANZPO, APOG, IAPO, PENTAFRICA, ESPO AND ASPO-

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*Dear Friends and Colleagues,*

*We are dealing with an unprecedented pandemic where local, regional, and national rules and regulation are being revised on a daily basis.*

*This initiative started 5 days ago in collaboration with IPOG (International Pediatric Otolaryngology Group) and all six major pediatric otolaryngology societies in the world (ANZSPO, APOG, ASPO, ESPO, IAPO, PENTAFRICA).*

*The response has been extraordinary, indicating the in-depth collaboration of the societies and sense of urgency surrounding the COVID-19 pandemic. We have responses from 306 pediatric otolaryngology departments/institutions worldwide, which, to the best of our knowledge, is unprecedented.*

*We remain aware that the situation is ongoing and evolving on a daily basis. Neither the timing nor the content of this initiative will fully satisfy everyone's needs with respect to adequate length, level of detail, and timing. It is clear to all of us that, if some of the best and largest pediatric centers around the world are facing major challenges with patient management in the setting of equipment shortages, absence of clear guidelines/policies, and the decreasing workforce, it is difficult to imagine what other challenges smaller pediatric centers in remote parts of the world are facing. Despite all the potential shortcomings of our approach, if we can help only a few of our colleagues and patients, we feel it is worth a try.*

*We hope the results included below give institutions already dealing with the pandemic some perspective on how to adapt their current approaches moving forward. In parallel, institutions at the early stages of facing this disease might find insight into how best to PREPARE.*

*We thank each institution for taking the time to participate in this initiative and for the helpful comments and suggestions we have received.*

*Regards,*

*Reza Rahbar DMD, MD*

*On behalf of IPOG (International Pediatric Otolaryngology Group)*

*ANZSPO (Australian and New Zealand Society of Pediatric Otolaryngology)  
Paul Walker, MD (President);  
Kelvin Kong, MD (Secretary)*

*APOG (Asia Pacific Pediatric Otolaryngology Group)  
Nguyen Thi Ngoc, MD (President);  
Wei-Chung Hsu, MD (Secretary)*

*ASPO (American Society of Pediatric Otolaryngology)  
Anna Messner, MD (President);  
Reza Rahbar, DMD, MD (Secretary)*

*ESPO (European Society of Pediatric Otolaryngology)  
Ann Hermansson, MD (President);  
Martin Bailey, MD (Secretary)*

*IAPO (Interamerican Association of Pediatric Otolaryngology)  
Federico Murillo, MD (President);  
Tania Sih, MD (Secretary)*

*PENTAFRICA (Pediatric Ear, Nose & Throat in Africa)  
Chris Prescott, MD (President);  
Shazia Peer, MD (Secretary)*

## *Acknowledgement*

*We particularly want to thank Erika Mercier, MD (Pediatric Otolaryngology Fellow, Boston Children's Hospital) and Natasha Dombrowski, BA (Research Assistant, Department of Otolaryngology, Boston Children's Hospital) for all the work done with creation of the survey, collection of data, and putting this report together.*

# SURVEY RESULTS

*These results will be posted on the respective websites of each society for members to access. We would like to thank every participating society and institution. Details of contributing institutions are at the end of the document.*

## **TOTAL PEDIATRIC OTOLARYNGOLOGY/CHILDREN'S FACILITIES INCLUDED WORLDWIDE: 306**

<b>Africa</b>	<b>3</b>	<b>Europe</b>	<b>58</b>	<b>North America</b>	<b>79</b>
South Africa	2	Belarus	1	Canada	7
Sudan	1	Belgium	4	Costa Rica	9
<b>Asia</b>	<b>56</b>	Bulgaria	2	Dominican Republic	4
China	5	Finland	1	El Salvador	2
Hong Kong	1	France	6	Guatemala	1
India	2	Germany	1	Honduras	5
Indonesia	1	Greece	1	Jamaica	1
Israel	3	Hungary	1	Mexico	5
Japan	1	Ireland	2	Nicaragua	3
Kazakhstan	1	Italy	7	Panama	2
Malaysia	12	Latvia	1	United States	40
Saudi Arabia	3	Netherlands	1	<b>South America</b>	<b>102</b>
Singapore	2	Poland	1	Argentina	10
South Korea	10	Portugal	3	Bolivia	4
Taiwan	5	Romania	2	Brazil	43
Thailand	2	Russia	4	Chile	3
Turkey	3	Serbia	1	Colombia	10
United Arab Emirates	1	Spain	3	Ecuador	3
Vietnam	4	Sweden	2	Paraguay	4
<b>Australia/Oceania</b>	<b>8</b>	Switzerland	1	Peru	5
Australia	7	Ukraine	1	Uruguay	5
New Zealand	1	United Kingdom	12	Venezuela	15

*\*\*Please note that the results presented in this document are only a reflection of practices reported to us by most institutions and are not to be taken as statistically accurate\*\*.*

# INSTITUTIONAL PRACTICES

Outpatient clinics	Urgency of cases seen in clinic	Urgent cases ( <b>67%</b> ) Urgent + Time-sensitive cases ( <b>41%</b> ) Airway pathology/trach care, Acute infections (deep neck infection and neck mass, mastoiditis, refractory or complicated otitis media, cochlear implant patients), Oncology, Trauma, Epistaxis, Aero-digestive foreign bodies, Acute sensorineural hearing loss, Acute facial paralysis, Post-operative patients, Cholesteatoma
	Fellow and resident participation in clinic	<b>62%</b> participating in clinic duties <b>24%</b> participating in telemedicine <b>34%</b> participating in phone triage
	COVID-19 screening for patients in clinic	<ul style="list-style-type: none"> <li>Questionnaire screening (<b>74%</b>)</li> <li>Fever checks before visits (<b>62%</b>)</li> <li>Using masks for patient and parents during visits (<b>55%</b>)</li> <li>Adapting waiting room set-up (<b>46%</b>) Limiting number of patients, alcohol gel use, limiting number of parents, use of negative pressure rooms Isolation areas for suspect/positive patients</li> </ul>
	Use of telemedicine	<b>55%</b> of institutions are using telemedicine <b>40%</b> introduced telemedicine as a result of COVID-19
	Participation of pediatric ORL teams in <u>non-pediatric ORL duties</u>	Required in <b>22%</b> of institutions, includes: <ul style="list-style-type: none"> <li>Adult ORL patient care and call</li> <li>Shifts in emergency department, triaging patients</li> <li>COVID-19 sampling</li> <li>Relocating from private to public practice</li> <li>Participation in ethics committees</li> </ul>
	Operative procedures	Case selection by urgency
Fellow/resident participation in operative cases		<u>Emergent cases</u> <b>41%</b> are involved in all cases <b>31%</b> are involved only in COVID-19 negative patients <u>Non-emergent cases</u> No participation ( <b>65%</b> )
Education	Conference participation	<b>58%</b> of institutions are using virtual conferences only <b>28%</b> of institutions have no conferences at this time
PPE (personal protective equipment)	Surgical mask use in clinic	Required with all patient contact ( <b>71%</b> )
	N95/FFP3 use in clinic	<ul style="list-style-type: none"> <li>When seeing all COVID-19 suspected (<b>53%</b>) and confirmed (<b>58%</b>) cases (↓ access?)</li> <li>For aerosol generating procedures regardless of COVID-19 status (<b>58%</b>)</li> </ul>
	N95/FFP3 use in OR	<ul style="list-style-type: none"> <li>When operating on COVID-19 suspected (<b>55%</b>) and confirmed cases (<b>57%</b>) (↓ access?)</li> <li>for aerosol generating procedures regardless of COVID-19 status (<b>56%</b>)</li> </ul>
	PPE shortages	<ul style="list-style-type: none"> <li>N95/FFP3 (<b>78%</b>)</li> <li>Eye protection (<b>56%</b>)</li> <li>Surgical masks (<b>45%</b>)</li> <li>Gowns (<b>43%</b>)</li> </ul>
	Reusing PPE	<ul style="list-style-type: none"> <li>Eye protection (<b>52%</b>)</li> <li>N95/FFP3 (<b>36%</b>)</li> </ul>
	Use of non-hospital provided PPE	<b>28%</b> of institutions have resorted to the following non-hospital provided PPE: Bought online or with own resources, Scuba diving face shield with HPF filter, Homemade, Local donations, Made by university engineering department, Welding visor, Speedo goggles
COVID-19 testing	Access to in-house COVID testing	<b>59%</b> of institutions have in-house access <ul style="list-style-type: none"> <li>Otherwise sent to outside institutions or centralized labs</li> <li>Government regulated in some institutions</li> </ul>
	Pre-op COVID testing	<b>65%</b> of institutions do not routinely test for COVID-19 prior to operative procedures
	COVID test turnaround time	1-2 days ( <b>38%</b> ) Same day ( <b>27%</b> ) 3-5 days ( <b>25%</b> )
Testing protocol	Employees are tested if...	<ul style="list-style-type: none"> <li>Exposed under any circumstances (<b>37%</b>)</li> <li>Exposed without PPE (<b>22%</b>)</li> <li>Exposed and symptomatic (<b>51%</b>)</li> </ul>
	Employees are asked to stay at home preventively if...	<ul style="list-style-type: none"> <li>Exposed under any circumstances (<b>28%</b>)</li> <li>Exposed without PPE (<b>25%</b>)</li> <li>Exposed and symptomatic (<b>34%</b>)</li> </ul>

# COVID-19 IN THE ORL COMMUNITY

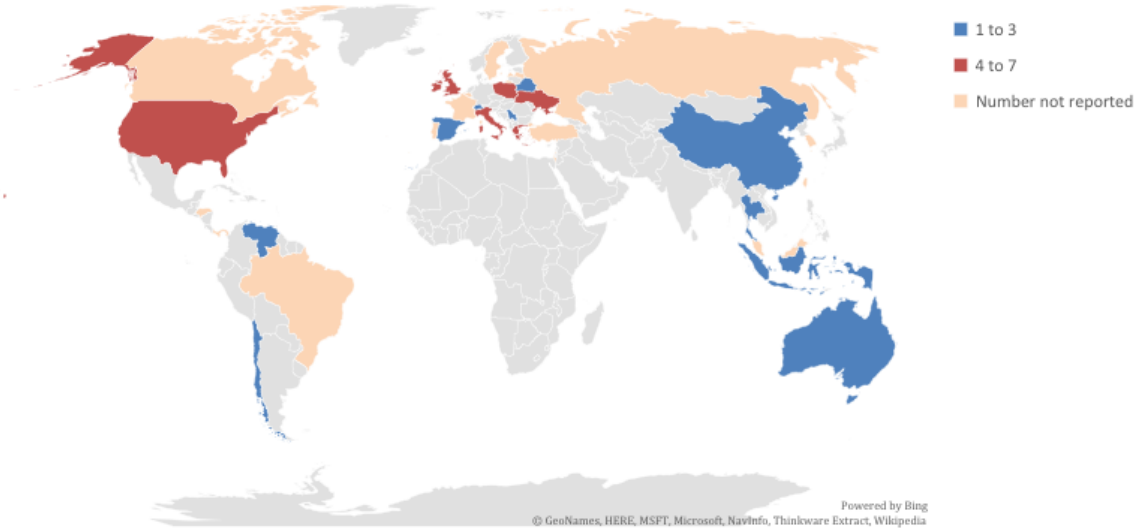
COVID-19+ test in staff	Number of attending physicians	1-2	<b>18 institutions</b> Belgium Brazil (2) Colombia Costa Rica (2) Ireland Malaysia (2)	Saudi Arabia Spain (2) United Kingdom (2) Uruguay USA (2) Venezuela	
		3-5	<b>5 institutions</b> Brazil Ecuador	Italy UK USA	
		6-10	<b>2 institutions</b> Brazil South Korea		
	Number of residents/fellows	1-2	<b>8 institutions</b> Brazil (2) Canada Ireland	Israel Thailand USA (2)	
		3-5	<b>1 institution</b> USA		
	Quarantined staff for exposure to COVID-19	Attending physicians	1-2	<b>55 institutions</b> Argentina (3) Belgium (2) Brazil (2) Canada (2) China Colombia (2)	Costa Rica (3) France (2) Israel (2) Malaysia (3) Paraguay Russia Serbia South Korea
3-5			<b>17 institutions</b> Brazil (2) Canada Chile Colombia Dominican Republic	Ireland Italy Mexico Poland Portugal Saudi Arabia	South Korea Spain UK USA Venezuela
6-10			<b>4 institutions</b> Brazil Italy	Nicaragua USA	
>10			<b>2 institutions</b> Brazil (2)		
Residents/fellows		1-2	<b>42 institutions</b> Argentina (2) Australia Belgium Brazil (5) Canada (2) Chile (2) China	Costa Rica France Ireland Israel Malaysia (2) Paraguay Portugal Saudi Arabia	South Korea (2) Taiwan Thailand UK (3) Uruguay (2) USA (10)
		3-5 cases	<b>6 institutions</b> Canada Italy	Spain Turkey USA (2)	
		6-10 cases	<b>1 institution</b> USA		
		Duration of quarantine	2 weeks (85% of institutions)		

# COVID-19 IN PEDIATRIC ORL PATIENTS (<18 Y/O)

<b>COVID-19 + patients (&lt;18 y/o)</b>  <i>(total 87 institutions)</i>	1-3 patients	<b>23 institutions</b> Australia (3) Belarus Chile China (4)	Indonesia Ireland (2) Serbia Spain Switzerland Thailand	USA (6) Philadelphia Atlanta Wilmington Stanford San Diego Rochester Venezuela
	4-7 patients	<b>12 institutions</b> Greece Ireland Italy (2)	Poland UK (2) Ukraine	USA (4) Aurora Boston Columbus New York
	Have patients, but cannot report number	<b>52 institutions</b> Australia Belgium (2) Brazil (5) Canada (4) France (5) Honduras (2) Israel (2) Italy (3)	Latvia Malaysia (3) Panama Portugal Russia South Korea (2) Spain (2) Sweden Taiwan	Thailand Turkey UK (5) USA (8) Chicago Jacksonville Houston (2) Philadelphia (2) Salt Lake City Baltimore
<b>Patients requiring ICU care or intubation (&lt;18 y/o)</b>  <i>(total 42 institutions)</i>	1-3 patients	<b>10 institutions</b> Belgium Brazil China Italy (2)	Panama Serbia UK USA (2) Atlanta Boston	
	7 patients	<b>1 institution</b> USA NYC		
	Have patients, but cannot report number	<b>31 institutions</b> Belgium Brazil (4) Canada (3) France (3) Honduras Ireland	Israel Malaysia (2) Portugal South Korea Spain (2) Taiwan Turkey	UK (2) USA (7) Colorado Houston NYC Philadelphia (3) Salt Lake City
<b>Patients having passed away (&lt;18 y/o)</b>  <i>(total 21 institutions)</i>	1 patient	<b>1 institution</b> China		
	2 patients	<b>1 institution</b> Vietnam		
	Have patients, but cannot report number	<b>19 institutions</b> Belgium Brazil (5) Canada France Israel	Italy (3) Nicaragua Panama South Korea UK	USA (3) NYC Philadelphia Salt Lake City

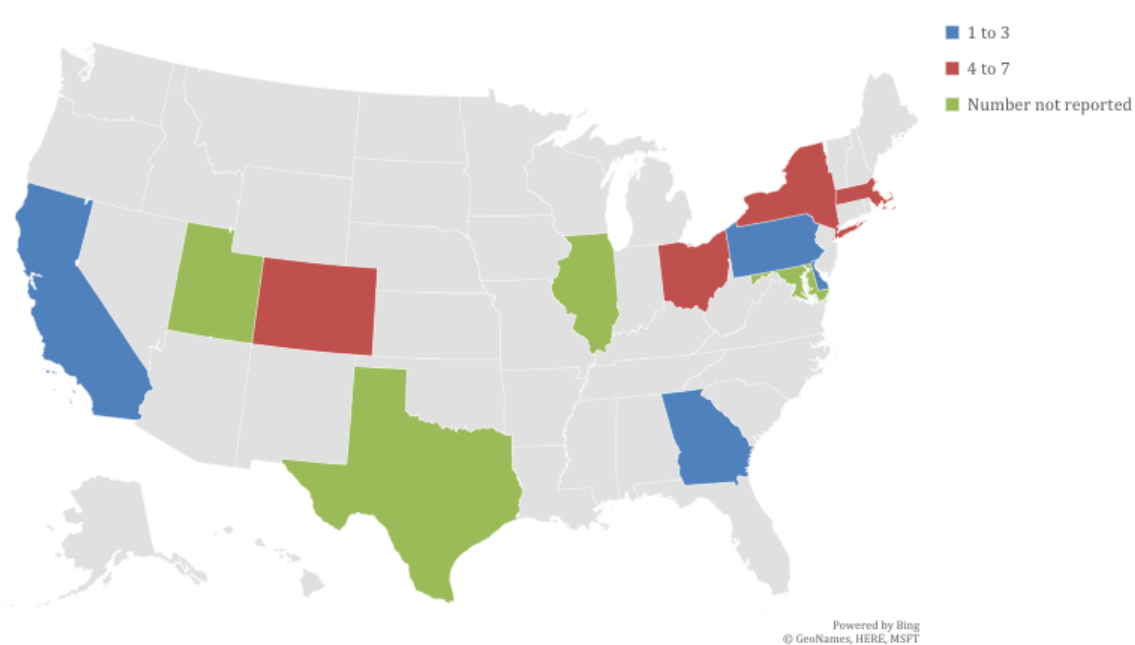
# COVID-19 IN PEDIATRIC ORL

Number of reported cases of COVID-19 in pediatric ORL institutions around the world as of Sunday March 29th



Please see the following link for daily updates on covid-19 cases worldwide...  
<https://coronavirus.jhu.edu/map.html>

Number of reported cases of COVID-19 in pediatric ORL institutions in America as of Sunday March 29th



Please see the following link for daily updates on covid-19 cases in America...  
<https://covid19.healthdata.org/>

# LESSONS LEARNED AND OBSERVATIONS FROM AFFECTED CENTERS

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- ⇒ **Be ready! Experiences shared in this survey show that preparation is key. Anticipating problems and putting in place strategies to combat them early is a lesson stressed by several institutions.**

## A FEW LESSONS FROM AN EMAIL COMMUNICATION WITH OUR COLLEAGUES AT HÔPITAL NECKER-ENFANTS-MALADES IN PARIS: DRS DENOYELLE, COULOIGNER, GARABEDIAN AND LOUNDON

- Ubiquitous confinement is crucial
- Cancel all non-urgent medical activities
- Patients with high BMIs (body mass index), even young adults, are at high risk for more severe forms of COVID-19
- Hydrochloroquine has been widely used at this institution but did not seem to have a significant impact on the severity of pneumopathy

### POINTERS ON HOW TO PERFORM A COVID-19 NASAL SWAB:

- This is a procedure that can be difficult to perform as the nasopharynx can prove difficult and painful to reach
- Proper location of the swab however is essential to obtain an adequate specimen
- As an alternative, the swab could be performed under the middle turbinate
  - Evidence suggests it is an area of high viral load

### USE OF PAPR (POWERED-AIR PURIFYING RESPIRATOR)

- Most institutions face a lack of availability of PAPR for contact with COVID+ cases
  - It has been reported that the use of PAPR makes communication in the OR difficult, especially for airway cases in which communication is critical
  - Many institutions resort to an N95/FFP3 mask, face shield, gown and gloves instead
    - However, to the best of our knowledge, these PPE are not equivalent to PAPR when treating a COVID-19 + patient
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# GET READY

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*A few suggestions to help prepare if you are at the early stages of the pandemic or if you are already affected and looking to adapt your current practice...*

**\*\*All recommendations are based on survey results and institutional experiences. Every service should adhere to their establishment's local rules/regulations and be mindful of varying availability of equipment. \*\***

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## DIVIDE WORKFORCE INTO TEAMS TO MINIMIZE EXPOSURE

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- Outpatient setting (front desk personnel, physician assistant, clinical assistant)
  - Consider dividing the team to minimize exposure
- Inpatient setting
  - Consider splitting in two teams rotating every 1-2 weeks
  - Each team would include attendings, residents, fellows, any other core members
  - Suggest avoiding contact between teams to avoid contaminating the entire service

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## PREPARING CLINICS

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- Limit to urgent and time sensitive patients
  - Surgical post-ops, oncology, airway
- Have a screening strategy to address potential COVID-19+ patients safely
  - Pre-visit over the phone or video, survey on arrival, vitals on arrival
- Plan for a different area to see COVID+ or suspected patients
- Avoid unnecessary contact
  - Handshaking
  - Wash hands frequently
- Several institutions are wearing N95/FFP3 mask, gloves and gown whenever possible, at minimum surgical mask and gloves for all patients
- Make use of telemedicine
  - Follow-ups, immunocompromised or vulnerable patients

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## VIDEO CONFERENCES/EDUCATION

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- Avoid in-person meetings
- Prepare a platform allowing for video conferencing from home or isolated office (e.g. Zoom)

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## EQUIPMENT/PPE

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- There are severe shortages of N95/FFP3, eye protection and surgical masks
- Ensure sufficient hand sanitizer and disinfectant wipes on all units
  - Clean phones, keyboards, desks
- Plan back-up strategies to reuse equipment such when possible in case of shortage
- Several centers are resorting to homemade masks or donations
- Practice proper donning and doffing procedures
- **PPE management videos from the Anesthesia and Critical Care team at BCH**
  - Welch, J. COVID-19 Personal Protective Equipment and Airway Management for the Operating Room. 2020. Online video. OPENPediatrics. [https://youtu.be/ Q\\_ZeQSJxu0](https://youtu.be/Q_ZeQSJxu0).



- Welch, J. COVID-19 Personal Protective Equipment and Airway Management for the Operating Room: Demonstration. 2020. Online video. OPENPediatrics. <https://youtu.be/d2sHRyAHKqI>.

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### PREPARING FOR SURGERY

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- Limit surgery to urgent and time-sensitive cases
  - Have clear criteria
- Limit number of people in the room (single surgeon)
- Limit aerosol-producing procedures to a strict minimum and wear full PPE (if available)
- Proposed PPE for at-risk procedures (aerosol generating procedures) and at-risk patients (potential COVID-19 +) : N95 masks, double gloving, face shield for surgeon, scrub nurse and anesthesiologist
- Suggest rapid sequence intubation for at-risk patients
- Consider using video tools for laryngoscopy rather than direct vision
- Consider placing protective drapes around patient's face during aerosol-generating surgical procedures

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### COVID TESTING

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- If possible, plan to have in-house testing
- Consider pre-op testing for patients with symptoms, patients exposed to a positive person, patients coming from abroad or having recently traveled
- The ultimate goal is to test every patient before surgery, however, test being in short supply, this is not always possible

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### BEDSIDE EXAM AND PROCEDURES

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- Wear PPE for oral cavity and nasal exam
  - Suggest mask and gloves (low-risk patient)
  - Suggest N95/FFP3 if positive for COVID-19 or aerosol-generating procedures on any patient
- Aerosol generating procedure (Flexible endoscopy, tracheostomy change)
  - Only perform absolutely necessary procedures
  - Limit number of people exposed (one person performing exam)
  - Wear full PPE: N95 mask, gown, face shield, gloves
  - Safe to change to surgical mask 30 minutes after aerosol generating procedures

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### EXPOSED OR INFECTED TEAM MEMBERS

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- Consider 2 weeks quarantine for unprotected exposure to COVID+ patient (based on survey responses), or per institutional protocol
- Consider 2 weeks quarantine for symptomatic personnel
- Quarantine per institutional protocols for positive test

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### SUPPORT

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- Plan to have a person of reference to whom people can address concerns
  - Plan to have adequate support systems for team members
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## RECENT COVID-19 RECOMMENDATIONS FROM PEDIATRIC ORL ASSOCIATIONS

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### ANOSMIA

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AAO-HNS (03/26/2020)

There is rapidly accumulating anecdotal evidence that anosmia with resultant dysgeusia are frequently reported symptoms associated with the COVID-19 pandemic. Similar reports are surfacing from multiple countries around the world including the United States. In an effort to establish the importance of these symptoms in diagnosis and progression of COVID-19, the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNS) has established the [COVID-19 Anosmia Reporting Tool for Clinicians](#). This tool was developed by the AAO-HNS Infectious Disease and Patient Safety Quality Improvement Committees to allow healthcare providers of all specialties worldwide to submit data to confidentially report on anosmia and dysgeusia related to COVID-19.

### PPE

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ENTUK (03/27/2020)

I am pleased to announce that Public Health England has agreed and confirmed in writing to me the following recommendations: upper-airway procedures such as nasal endoscopy, laryngoscopy and other interventions in our specialty are to be considered Aerosol Generating Procedures (AGPs), requiring full prescribed PPE, including an FFP3 respirator. They have also agreed that we are seeing widespread transmission of COVID-19 in the community, and therefore advise that appropriate PPE should be used in relation to AGPs undertaken in ANY patient. Clinicians should plan to group patients requiring these procedures, all of whom should be assumed infected, to avoid changing respirators between patients and thereby preserve stock. In the absence of an FFP3 respirator, the Health and Safety Executive has confirmed that an FFP2 or N95 equivalent respirator would offer adequate levels of protection. However, it is important to note that FFP3 is officially the prescribed rating. Their official letter and guidance are expected shortly, but please be safe and take care of yourselves in the above manner. A useful document on the safe decontamination of endoscopes is linked below, and will be on our website shortly.

AAO-HNS (03/23/2020)

Until the supply of testing materials catches up with the accelerating demand for testing, there will be circumstances that the COVID-19 status of these patients is unknown. Therefore, when a detailed examination or surgical procedure is necessary for urgent or emergent care and the COVID-19 status of the patient cannot be confirmed, then the patient should be handled as if they are COVID-19 positive. This consideration should apply regardless of whether in an office, hospital, or operating room setting. Furthermore, the provider and surrounding staff must have the necessary PPE. Particular attention must be taken to clean contaminated equipment and surfaces with appropriate disinfectants (e.g., ≥ 70% alcohol) as recommended by the CDC.

## ENTUK (03/24/2020)

We believe that it is imperative that PPE (Personal Protective Equipment: FFP3 masks, visors, gowns and gloves) is available and used for all forms of nasal and throat examination, in both the hospital, outpatient clinic and community settings. We should now assume that all our ENT patients are potential carriers of the virus. This includes those patients who require an endoscopic examination of their nose and throat which exposes both the operator and assistant to aero-digestive tract droplets.

## AAO-HNS

The need to flatten the curve of transmission and preserve critical supplies and equipment for those who need it most necessitates limiting care at this time to time-sensitive and emergent problems and the routine use of appropriate PPE when treating patients in all age groups. This policy applies to otolaryngologists in areas currently facing high infection rates as well as those in areas with limited penetration.

## SURGICAL MANAGEMENT

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### CEORL-HNS (03/23/2020)

1) Endoscopic examinations should be avoided and only be indicated when necessary.

2) Avoid non-urgent and non-cancer surgery. In particular, Endonasal Endoscopic Sinonasal Surgery and Laryngological Surgery (especially jet ventilated - orotracheal intubation is more appropriate) seems to be the riskiest procedures.

Tracheostomy is considered to be a particularly high-risk procedure during surgery but also in aftercare which could potentially also increase amount of PPE consumed many folds that are already universally in short supply. The need for tracheostomy in COVID-19 patients should be carefully assessed by a multidisciplinary team.

COVID-19 should be excluded in patients undergoing surgery. If the acute medical condition does not allow it, it is necessary to consider the patient positive until the result is negative.

### ASPO (03/23/2020)

1. **Surgical cases:** We have all been asked to postpone elective cases- the debate centers around the issue of the definition of “urgent” cases and this appears to vary between institutions. The COVID-19 virus is spread via nasal and oral secretions. Reports from other institutions indicate that the risk of virus spread is high with sinus surgery and should be avoided. We need to presume that the risk is also high with adenoid and tonsil surgery and nearly all institutions have concluded that these cases should not be performed unless there are extraordinary indications. What about ear tubes? Most institutions are canceling all ear tube cases while others are proceeding with ear tubes in the young children with raging infections in an effort to keep the kids out of their pediatrician’s offices and prevent complications. The risks of a short mask anesthesia (with aerosolization of secretions) in a young child are not known at this time. Eventually, I have no doubt that we will get to a place where we can test patients pre-op to see if they are COVID-19 virus positive (as they are doing in S. Korea)- hopefully this will be sooner rather than later.

2. **Flexible laryngoscopy, nasal endoscopy.** It is clear that these procedures are “high risk” for spreading the virus and should be avoided whenever possible. When they need to be performed it is clear that we and any other medical personnel in the room should wear gown, gloves, eye protection and mask. Nasal pledgets

should be used for topical anesthesia instead of sprays. At some institutions the debate is whether a surgical mask is adequate versus an N-95. We definitely know that the virus is in the nasal and oral secretions of asymptomatic children and so an N95 should be the standard of care. Again, we look forward to the day when we can routinely do pre-procedure testing.

3. **Telephone/teleconference patient visits.** I have no doubt that in hindsight one day we will look back on this pandemic as the true birth of video visits. The good news (always need to look for the silver lining) is that federal and state rules re visits are being relaxed so that now we can use non-HIPAA compliant platforms such as facetime and we can now bill for telephone visits. Many of our institutions are rapidly pushing out protocols and platforms for us to utilize so that we can continue caring for our patients.

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## USEFUL LINKS AND DOCUMENTATION

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### COVID-19 MANAGEMENT RECOMMENDATIONS:

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1. ENT UK COVID-19 information for health professionals: [www.entuk.org/covid-19](http://www.entuk.org/covid-19)
2. Handbook of Covid-19 from the First Affiliated Hospital, Zhejiang University School of Medicine: <https://www.britishlaryngological.org/news/covid-19-important-guidance>
3. CDC recommendations on how to extend the life of N95 masks: <https://www.cdc.gov/niosh/topics/hcwcontrols/recommendedguidanceextuse.html>
4. Guidelines for naso-endoscopy: [https://mcusercontent.com/e386d81be4a76bada89909666/files/24995686-7386-4260-a5a6-e56aff56970c/Nasal\\_endoscopy\\_and\\_laryngoscopy\\_examination\\_of\\_ENT\\_patients.pdf?utm\\_source=ENT+UK+Members+05.03.20&utm\\_campaign=73aadcea8d-EMAIL\\_CAMPAIGN\\_2020\\_03\\_23\\_05\\_26&utm\\_medium=email&utm\\_term=0\\_b992aea106-73aadcea8d-118550865](https://mcusercontent.com/e386d81be4a76bada89909666/files/24995686-7386-4260-a5a6-e56aff56970c/Nasal_endoscopy_and_laryngoscopy_examination_of_ENT_patients.pdf?utm_source=ENT+UK+Members+05.03.20&utm_campaign=73aadcea8d-EMAIL_CAMPAIGN_2020_03_23_05_26&utm_medium=email&utm_term=0_b992aea106-73aadcea8d-118550865)
5. Aerosol Generating Procedures in ENT: [https://mcusercontent.com/e386d81be4a76bada89909666/files/b384cf30-e622-4469-9d9f-7d2932b35330/Aerosol\\_generating\\_procedures\\_in\\_ENT.pdf?utm\\_source=ENT+UK+Members+05.03.20&utm\\_campaign=73aadcea8d-EMAIL\\_CAMPAIGN\\_2020\\_03\\_23\\_05\\_26&utm\\_medium=email&utm\\_term=0\\_b992aea106-73aadcea8d-118550865](https://mcusercontent.com/e386d81be4a76bada89909666/files/b384cf30-e622-4469-9d9f-7d2932b35330/Aerosol_generating_procedures_in_ENT.pdf?utm_source=ENT+UK+Members+05.03.20&utm_campaign=73aadcea8d-EMAIL_CAMPAIGN_2020_03_23_05_26&utm_medium=email&utm_term=0_b992aea106-73aadcea8d-118550865)
6. Tracheostomy Guidance: [https://mcusercontent.com/e386d81be4a76bada89909666/files/a34a3934-d546-46e0-aff-fcb3de7c9dfa/COVID\\_tracheostomy\\_guidance.pdf?utm\\_source=ENT+UK+Members+05.03.20&utm\\_campaign=73aadcea8d-EMAIL\\_CAMPAIGN\\_2020\\_03\\_23\\_05\\_26&utm\\_medium=email&utm\\_term=0\\_b992aea106-73aadcea8d-118550865](https://mcusercontent.com/e386d81be4a76bada89909666/files/a34a3934-d546-46e0-aff-fcb3de7c9dfa/COVID_tracheostomy_guidance.pdf?utm_source=ENT+UK+Members+05.03.20&utm_campaign=73aadcea8d-EMAIL_CAMPAIGN_2020_03_23_05_26&utm_medium=email&utm_term=0_b992aea106-73aadcea8d-118550865)
7. Remote triaging of head and neck cancer patients: [https://mcusercontent.com/e386d81be4a76bada89909666/files/7479ddef-359a-4b25-9b32-c99d7a858e89/Remote\\_triaging\\_of\\_urgent\\_suspected\\_head\\_and\\_neck\\_cancer\\_referrals\\_during\\_Covid\\_19\\_pandemic\\_FINAL.pdf?utm\\_source=ENT+UK+Members+05.03.20&utm\\_campaign=73aadcea8d-EMAIL\\_CAMPAIGN\\_2020\\_03\\_23\\_05\\_26&utm\\_medium=email&utm\\_term=0\\_b992aea106-73aadcea8d-118550865](https://mcusercontent.com/e386d81be4a76bada89909666/files/7479ddef-359a-4b25-9b32-c99d7a858e89/Remote_triaging_of_urgent_suspected_head_and_neck_cancer_referrals_during_Covid_19_pandemic_FINAL.pdf?utm_source=ENT+UK+Members+05.03.20&utm_campaign=73aadcea8d-EMAIL_CAMPAIGN_2020_03_23_05_26&utm_medium=email&utm_term=0_b992aea106-73aadcea8d-118550865)

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## SCIENTIFIC ARTICLES

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8. COVID-19 shedding in symptomatic vs asymptomatic patients: [https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_www.nejm.org\\_doi\\_full\\_10.1056\\_NEJMc2001737-3Fquery-3DTOC&d=DwIFAg&c=ZQs-KZ8oxEw0p81sqqiaRA&r=YVK9ucsKVuhN\\_CL0I7G0tQ&m=r7WxtCuTNeLrIrbVzHvJor3oM7oncxxVt3z2I6CQHxs&s=jsJ6Lr1dr1Lajp392mlRrsw5U2fnp4cKFsGNTaEOs-k&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.nejm.org_doi_full_10.1056_NEJMc2001737-3Fquery-3DTOC&d=DwIFAg&c=ZQs-KZ8oxEw0p81sqqiaRA&r=YVK9ucsKVuhN_CL0I7G0tQ&m=r7WxtCuTNeLrIrbVzHvJor3oM7oncxxVt3z2I6CQHxs&s=jsJ6Lr1dr1Lajp392mlRrsw5U2fnp4cKFsGNTaEOs-k&e=)

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## RESOURCES

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9. AAO-HNS Resources: <https://www.entnet.org/content/coronavirus-disease-2019-resources>
10. Stanford Covid-19 town hall (Available Streaming Online via ZOOM):  
[https://stanford.zoom.us/rec/share/4o9blJTU8F1LZIXKzHzPRqMHAAdvLeaa80CcZqfdbnR0clnG\\_taBOr68Z2TMwNU-2](https://stanford.zoom.us/rec/share/4o9blJTU8F1LZIXKzHzPRqMHAAdvLeaa80CcZqfdbnR0clnG_taBOr68Z2TMwNU-2)  
<https://stanfordmedicine.box.com/s/unke9g5plldmp09yeyiq2qgkif100qq>
11. Easy way to contact patients with your cellphone without revealing your number:  
<https://www.doximity.com/app>
12. Risk calculator for head and neck cancer patients: [https://urldefense.proofpoint.com/v2/url?u=https-3A\\_\\_entuk.us6.list-2Dmanage.com\\_track\\_click-3Fu-3De386d81be4a76bada89909666-26id-3D2aa586bf9d-26e-3Dfdd2757341&d=DwMFaQ&c=qS4qoWBT7poplM69zy\\_3xhKwEW14JZMSdioCoppxeFU&r=h-OQOtdm22Ta9xatFu-kD1OC5oeSZ4Son4znIjznOB8qSTZk7PLkGQpqzZJkI5Z&m=twP2ktheCedSLA9BUWRF4OMI6WfstYXKMEoIN3HUFVc&s=hIV-qKG9LxVPOoVMzfNzQ6-7I\\_4Udzk3QUtDwaHLjKU&e=](https://urldefense.proofpoint.com/v2/url?u=https-3A__entuk.us6.list-2Dmanage.com_track_click-3Fu-3De386d81be4a76bada89909666-26id-3D2aa586bf9d-26e-3Dfdd2757341&d=DwMFaQ&c=qS4qoWBT7poplM69zy_3xhKwEW14JZMSdioCoppxeFU&r=h-OQOtdm22Ta9xatFu-kD1OC5oeSZ4Son4znIjznOB8qSTZk7PLkGQpqzZJkI5Z&m=twP2ktheCedSLA9BUWRF4OMI6WfstYXKMEoIN3HUFVc&s=hIV-qKG9LxVPOoVMzfNzQ6-7I_4Udzk3QUtDwaHLjKU&e=)

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## IN THE NEWS

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13. Keeping healthcare workers safe: <https://www.newyorker.com/news/news-desk/keeping-the-coronavirus-from-infecting-health-care-workers>
14. ORL makes the New York Times: <https://www.nytimes.com/2020/03/22/health/coronavirus-symptoms-smell-taste.html>

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## DISEASE STATISTICS AND PROJECTIONS

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15. Map of global COVID-19 cases: <https://coronavirus.jhu.edu/map.html>
16. Number of cases: <https://www.worldometers.info/coronavirus/>
17. Projections for COVID-19 cases in the United States: <https://covid19.healthdata.org/>
18. Global statistics: <https://www.statista.com/topics/5994/the-coronavirus-disease-covid-19-outbreak/>

# PARTICIPATING INSTITUTIONS

## INSTITUTIONS BY CONTINENT AND COUNTRY\*

*\*We apologize in advance if there are any spelling errors or omissions in the names listed here. Please email [natasha.dombrowski@childrens.harvard.edu](mailto:natasha.dombrowski@childrens.harvard.edu) or [erika.mercier@childrens.harvard.edu](mailto:erika.mercier@childrens.harvard.edu) with any corrections.*

### **Africa**

#### **South Africa:**

- Red Cross Children's Hospital & University of Cape Town
- Universitas Academic Hospital/University of the Free State

#### **Sudan:**

- Africa ENT Hospital

### **Asia**

#### **China:**

- Beijing Children's Hospital, Capital Medical University
- Children's Hospital of Shenzhen
- Shanghai Children's Hospital
- Shanghai Children's Medical Center
- The Children's Hospital at Zhejiang University School Of Medicine

#### **Hong Kong:**

- Hong Kong Children's Hospital/United Christian Hospital KEC Hong Kong

#### **India:**

- Manipal Hospitals
- Nanavati Hospital

#### **Indonesia:**

- Universitas Airlangga

#### **Israel:**

- Private Practice
- Samson Assuta Ashdod University Hospital
- Tel Aviv Sourasky Medical Center

#### **Japan:**

- National Center for Child Health and Development

#### **Kazakhstan:**

- West Kazakhstan State Medical Academy

#### **Malaysia:**

- Hospital Raja Perempuan Zainab II, Kota Bharu
- Hospital Sultan Abdul Halim, Kedah
- Hospital Sultanah Bahiyah Alor Setar
- Hospital Tengku Ampuan Afzan
- Hospital Tunku Azizah (Women and Children's Hospital), Kuala Lumpur
- Hserdang Malaysia

- Sabah Women and Children's Hospital
- Sarawak General Hospital (Ministry of Health)
- Sunway Medical Centre
- Universiti Kebangsaan Malaysia Medical Centre
- Universiti Sains Malaysia
- University of Malaya

#### **Saudi Arabia:**

- King Fahad Specialist Hospital Dammam
- National Guard Hospitals
- Prince Sultan Military Medical City (PSMMC)

#### **Singapore:**

- KK Women's and Children's Hospital
- National University Hospital

#### **South Korea:**

- Ajou University Medical Center
- Asan Medical Center
- Chungnam National University Hospital
- Ewha Women's University School of Medicine
- Hallym University Medical Center
- Hanyang University Hospital
- Konyang University Hospital
- Korea University College of Medicine
- Kyung Hee University
- Seoul National University Boramae Medical Center

#### **Taiwan:**

- Cathay General Hospital
- Chang Gung Memorial Hospital
- China Medical University Hospital
- MacKay Memorial Hospital and MacKay Children Hospital
- National Taiwan University Hospital and Children's Hospital

#### **Thailand:**

- Chiang Mai University
- Siriraj Hospital, Mahidol University

#### **Turkey:**

- Hacettepe University
- Koc University
- Samsun Research and Training Hospital

### **United Arab Emirates:**

- Al Jalila Children's Hospital, Dubai

### **Vietnam:**

- Children's Hospital 1, Ho Chi Minh City
- Danang ENT Center
- ENT Hospital Ho Chi Minh City
- National Hospital of Pediatrics

### **Australia/Oceania**

#### **Australia:**

- John Hunter Children's Hospital
- John Hunter Hospital
- Perth Children's Hospital
- Queensland Children's Hospital
- Royal Children's Hospital
- Sydney Children's Hospital
- The Children's Hospital at Westmead

#### **New Zealand:**

- Starship Hospital

### **Europe**

#### **Belarus:**

- Minsk Pediatric Hospital of Infectious Diseases

#### **Belgium:**

- Antwerp University Hospital
- Centre Hospitalier de Mouscron
- Centre Hospitalier de Wallonie Picarde
- Universitair Ziekenhuis Gent

#### **Bulgaria:**

- Bulgarian Society of Pediatric ORL
- UMHAT "Tzaritza Joanna-ISUL"

#### **Finland:**

- Helsinki University Hospital

#### **France:**

- Aix Marseille University, La Timone Children's Hospital
- Hôpital Femme Mère Enfant
- Hôpital Necker - Enfants Malades
- University Hospital Gui de Chauiac
- University Hospital of Brest
- University Hospital of Lille

#### **Germany:**

- Klinikum Bremerhaven Reinkenheide

**Greece:**

- Agia Sofia Children's Hospital Athens

**Hungary:**

- Hogyi

**Ireland**

- Children's Health Ireland
- Children's Health Ireland at Crumlin

**Italy:**

- ASST Spedali Civili
- Azienda Ospedaliera Università di Padova
- Bambino Gesù Children's Hospital
- Institute for Maternal and Child Health IRCCS Burlo Garofolo
- Meyer Hospital
- Ospedale dei Bambini V. Buzzi Milano
- Ospedale Infantile Regina Margherita

**Latvia:**

- Children's Clinical University Hospital

**Poland:**

- Karol Jonscher Childrens Hospital, Poznan University of Medical Sciences

**Portugal:**

- Centro Hospitalar Universitário do Porto
- Hospital de Cascais
- University of Porto Faculty of Medicine Hospital Center S. Joao

**Romania:**

- CMDTAMP Bucharest
- University of Medicine and Pharmacy "Victor Babes" Timisoar

**Russia:**

- Clinical Hospital Lapino
- Imma
- Klinika Semeynaya
- National Medical Centre of Otolaryngology of FMBA of Russia

**Serbia:**

- Mother and Child Health Care Institute of Serbia

**Spain:**

- Hospital San Rafael, Madrid
- Hospital Universitario Son Espases
- Sant Joan de Deu Children's Hospital Barcelona

**Sweden:**

- Karolinska University Hospital
- University Hospital Lund

**Switzerland:**

- University Hospital Basel

**Ukraine:**

- Lviv Regional Pediatric Clinical Hospital OHMATDYT

**United Kingdom:**

- Barts Health
- Bradford Royal Infirmary
- Evelina London Children's Hospital
- Great Ormond Street
- Imperial College
- Royal Belfast Hospital for Sick Children
- Sheffield Children's Hospital
- St Georges
- University College London Hospitals (3)

**North America****Canada:**

- BC Children's Hospital
- Centre Hospitalier Universitaire Sainte-Justine
- CHEO
- CHU de Québec-Centre Mère-Enfant
- IWK Health Centre
- Montreal Children's Hospital
- The Hospital for Sick Children

**Costa Rica:**

- Caja Costarricense del Seguro Social
- CCSS
- CCSS San Juan
- Dr. Gago's Private Practice
- Hospital Monseñor Sanabria
- Hospital Nacional de Niños del Seguro Social
- Hospital San Vicente de Paul
- INS
- Ministerio de Salud Costa Rica

**Dominican Republic:**

- Cedimat
- Hospital Pediátrico Dr Hugo Mendoza
- Hospital Salvador B. Gautier
- Lolo

**El Salvador:**

- Hospital de Niños Benjamín Bloom
- Instituto Salvadoreño Del Seguro Social/ Hospital Regional San Juan De Dios De San Miguel El Salvador

**Guatemala:**

- Centró Otorrinolaringológico

**Honduras:**

- AHONORL
- Asociación de Rinología Honduras
- Honduras Medical Center
- Hospital del Valle
- Hospital San Felipe

**Jamaica:**

- Bustamante Hospital for Children

**Mexico:**

- Hospital Infantil de Mexico Federico Gómez
- Salud Auditiva México SA de CV
- Tecnológico de Monterrey TECSalud
- Instituto Mexicano del Seguro Social

**Nicaragua:**

- Clinicentro
- Hospital Vivian Pellas
- Hospital Vivian Pellas /Hospital Monte España

**Panama:**

- Hospital del Niño Dr. Jose Renan Esquivel
- Hospital De Especialidades Pediatricas de la Caja de Seguro Social

**United States:**

- Albert Einstein College of Medicine & Montefiore Medical Center
- Ann & Robert H. Lurie Children's Hospital of Chicago
- Arkansas Children's Hospital
- Boston Children's Hospital
- Center One Surgery
- Children's Hospital Colorado
- Children's Hospital Los Angeles
- Children's Hospital New Orleans
- Children's Hospital of Philadelphia
- Children's Hospital of Pittsburgh
- Children's National Health System
- Cincinnati Children's Hospital
- Connecticut Children's Hospital
- East Tennessee Children's Hospital
- Emory University
- Johns Hopkins University
- Mary Bridge Children's Hospital
- Medical College of Wisconsin/Children's Wisconsin
- Miller Children's Hospital
- Nationwide Children's Hospital
- Nemours/Alfred I. duPont Hospital for Children
- Nemours Children's Hospital Orlando, FL
- New York University
- Oregon Health Sciences University
- Penn State Milton S. Hershey Medical Center
- Primary Children's Hospital
- Rady Children's Hospital San Diego
- Seattle Children's Hospital
- Stanford University
- SUNY Downstate Medical Center
- Texas Children's Hospital/Baylor College of Medicine

- University of California, San Francisco
- University of Michigan
- University of New Mexico Children's Hospital
- University of Rochester
- University of Texas - Houston
- University of Vermont Medical Center
- UT Southwestern
- Walter Reed National Military Medical Center
- West Virginia University

## **South America**

### **Argentina:**

- COAT Centro Otoaudiológico de Alta Tecnología
- Consultorio Otorrinolaringológico Buenos Aires
- Hospital Español de Mendoza
- Hospital General de Niños Dr. Pedro de Elizalde
- Hospital Nacional de Pediatría Prof. Garrahan
- Hospital Pediátrico Fleming
- Hospital Privado de Nariz Garganta y Oídos
- Sanatorio Allende
- Sanatorio Argentino

### **Bolivia:**

- Caja de Salud CORDES
- Clínica Alemana
- Hospital Arco Iris

### **Brazil:**

- Clínica Crescer
- Clínica Infancia Viva Pediatría
- Clínica Integrada Aragão
- Faculdade Ciências Médicas de Minas Gerais
- FAMERP
- Fundação Ouro Branco
- Hospital da Criança Conceição
- Hospital da Cruz Vermelha Brasileira Paraná
- Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo

- Hospital de Clínicas de Porto Alegre
- Hospital de Otorrinolaringologia de Sorocaba BOS
- Hospital Infantil Darcy Vargas
- Hospital Infantil Joana de Gusmão
- Hospital IPO
- Hospital Israelita Albert Einstein
- Hospital Mater Dei - Unidade Contorno
- Hospital Municipal Souza Aguiar
- Hospital Paulista
- Hospital Pequeno Príncipe
- Hospital Português
- Hospital Regional de Taguatinga
- Hospital Sao Lucas da PUCRS
- Hospital Unimed Rio Verde
- Hospital Universitário Antônio Pedro
- Hospital Universitário Pedro Ernesto UERJ
- Iapo
- Imigrantes Hospital
- Instituto Fernandes Figueira
- Instituto Fernandes Figueira / FIOCRUZ
- Otos
- Private/Independent Practice (3)
- Santa Casa de Campo Grande
- Santa Casa de Porto Alegre
- Santo Antonio Children's Hospital
- Sensorial
- SMS RJ/CF JSH
- Unimed BH
- Universidade de Vassouras
- Universidade Estadual de Campinas - UNICAMP
- Universidade Federal de São Paulo

### **Chile:**

- Hospital Clínico San Borja Arriarán
- Hospital Regional de Concepcion
- Red Salud Universidad Católica

### **Colombia:**

- Clínica Palermo
- Clínica Portoazul
- Fundación Santa Fe
- Hospital Santa Clara
- Hospital Universitario San Ignacio
- Independiente

- Otofon
- Private Practice Office
- Santa Cñara Hospital ESE
- Universidad de Caldas

### **Ecuador:**

- Hospital Carlos Andrade Marín
- Hospital Kennedy Alborada
- Hospital Metropolitano

### **Paraguay:**

- Hospital de Clínicas
- Hospital de Clínicas U.N.A.
- Hospital General Barrio Obrero
- Hospital Nacional

### **Peru:**

- Clínica Internacional
- Hospital Negreiros de EsSalud
- Independiente
- Instituto Nacional de Salud del Niño de San Borja
- Seguro Social de Salud

### **Uruguay:**

- 1- COMECA
- CASMER- FEMI
- Centro Hospitalario Pereira Rossell
- Comeri
- Cosem

### **Venezuela:**

- Centro de Otorrinolaringología Respira Libre
- Centro Médico de Caracas
- CHET
- Clínica Calicanto/ Prevaler Maracay
- Clínica de Oídos, Nariz y Garganta Barquisimeto
- Clínica El Ávila
- Hospital de Niños HM de los Ríos
- Hospital Domingo Luciani
- Hospital Dr. Luis Gomes Lopez
- Hospital Luis Ortega
- Hospital Vargas de Caracas
- Instituto Auditivo Barinas/ Centro de Oído Nariz y Garganta
- Instituto de Otorrinolaringología y Oftalmología
- IVSS Ambulatorio El Limon Aragua
- Policlinica Metropolitana



# SURVEY RESPONDENTS

(LISTED ALPHABETICALLY BY FIRST NAME\*)

*\*Names Are Written As They Appeared In Survey Responses. We Apologize In Advance If There Are Any Errors In Names Listed Here. Please Email [Natasha.Dombrowski@Childrens.Harvard.Edu](mailto:Natasha.Dombrowski@Childrens.Harvard.Edu) Or [Erika.Mercier@Childrens.Harvard.Edu](mailto:Erika.Mercier@Childrens.Harvard.Edu) With Any Corrections.*

Adelaida Bock	Carlos Humberto Cieza Samillan	Erica C. Bennett	Henry Tan KK
Ahmad Alkurdi	Carlos Mena Canata	Ericka King	Hudson Dutra
Alan Cheng (Palo Alto)	Carlos Muñoz	Estelita Betti	Hugo Rodriguez
Alan Cheng (Sydney)	Carol Macarthur	Eva Orzan	Huniades Urbina-Medina
Albert Park	Cecilia Jové	Faruk Unal	Huynh Ba Tan
Alejandra Corrales	Cecille Sulman	Federica Peradotto	I Chun Kuo
Alexey A. Borodin	Cesar	Federico Murillo	Ian Jacobs
Ali Taghi	César Franco Peña	Fedir Yurochko	James S. Reilly
Alvaro Carlos Calvo	Cesare Cutrone	Fernando Silva Chacon	Jaroslav Szydowski
Alvaro Ricardo Fuentes Pereira	Chiader Lin	Francis Sanchez De Losada	Jean Pierre Certain
An Boudewyns	Chris Raine	Francisco Bonilla Gomez	Jean-Michel Triglia
Ana Carolina	Christian Fernandez Zapata	Francisco Medina	Jeffrey Koempel
Ana Paula Dualibi	Claudia Schweiger	Franco Pignatelli	Jesus Franco Anzola
Ana Sandoval Valdiviezo	Claudio Lindemberg	Franco Trabalzini	Jesus Peña Prato
Anastasiya	Cleverson Aguiar	Françoise Denoyelle	Jeyanthi Kulasegarah
Anatolii	Colleen Heffernan	Frida Scharf De Sanabria	Jiarui Chen
Aneliese Mair	Conor Jackson	Gabriella Kupecz	Jie Zhang
Ángela Pérez	Cristiane Abdo	Gadi Fishman	Jin-Hwan Kin
Ann Hermansson	Damien Phillips	Genaro Reynoso	Joana Ximenes Araújo
Anna Messner	Daniel Choo	George Evandro Boos	Joerg Ebmeyer
Anna Meyer	David Chi	George Reitich	Johanna Nokso-Koivisto
Anne Doyen	David Landin	George Zalzal	Johanna Sembergman
Anne Schilder	David Tunkel	Gerard Corsten	John P. Little
Antonio Joaquin Ruiz Corona	Deepa Shivnani	Gerardo Manuel Salas Rivas	John Russell
Araceli De La Guardia	Diana Gomez	Gerardo Rene Barillas	Jonathan B. Ida
Archwin Tanphaichitr	Diana Patricia Romero Lara	German Gago	Jordana Rosignoli
Ariel Ivars	Diana Vanessa Sierra	Gheorghe Iovanescu	Jorge Astocondor
Augusto Peñaranda	Amador	Gi Jung Im	Jorge Osorio
Bas Pullens	Dilyana Vicheva	Goh Bee See	Jorge Rafael Villamizar
Bernardo Oliver	Douglas R. Sidell	Graciela González Franco	Jorge Spratley
Blake Papsin	Edgar Arturo Perdomo	Gresham Richter	Jose Colmenarez
Bong Jik Kim	Flores	Haifaa S. Alnasser	Jose Daniel Pazzetti
Bruce Maddern	Edilberto Salazar Zender	Halimuddin Bin Sawali	José Faibes Lubianca Neto
Byun Jae Yong	Edio Junior Cavallaro	Hamid Daya	José Manuel Meléndez García
Carina Valeriani	Magalhães	Harlan Muntz	Juan David Carvajal
Carla Napolitano	Elena Piña	Hashimah Ismail	Juan Ospina
Carlos De La Torre	Elise Zimmermann Mathias	Hassan Ramadan	Julie Wei
Carlos Enrique Mena Canata	Ellis Arjmand	Hazim Aleid	Julio Ernesto Cardona
	Els De Leenheer	Heather Herrington	González
	Enrique Muñoz Hernandez	Helen Caulfield	Jungho Bae

Karen Mojica	Marsha James	Peggy Kelley	Shirley Saavedra Rocabado
Karen Zur	Matthew Brigger	Pham Dinh Nguyen	Shyan Vijayasekaran
Katherine Kavanagh	Matthew Bromwich	Pierre Fayoux	Silvia Angela Bentancor
Kelly Atencia Bueno	Maura Neves	Priatharisiny Velayutham	Ramirez
Kelvin Kong	Mauro Zernotti	Rachel Almeida Pra	Silvia Ventura
Kenny H. Chan	Mayra Coelho Bócoli	Rafael Pontes Ribeiro	Sofia Stamataki
Kim Chul-Ho	Meghan Wilson	Rania Mehanna	Soham Roy
Kim Jong-Yeup	Mehmet Umut Akyol	Raquel Gomes De Arvalho	Sok Yan Tay
Kristaps Dambergs	Mercedes Narváez	Pinto	Sonia Ayari-Khalfallah
Kristien Ghyselen	Meredith Lind	Rebecca Maunsell	Sophie Lachance
Kuo Sheng Lee	Michael Cunningham	Remi Marianowski	Soraya Garcia
Lan Li	Michael Kuo	Riaz Seedat	Stella Rowley
Leandro Brandão	Michael Rutter	Ricardo Antonio De Hoyos	Stephen Rodrigues
Guimarães	Michel Neeff	Parra	Steve Maturo
Lee Reyes	Michelle Wyatt	Ricardo Araujo Abimorad	Steven Goudy
Lei Wu	Miguel Bebiano Coutinho	Ricardo H. Encinozo K.	Suhaimi Yusuf
Leonardo Conrado Barbosa	Mihaela Carmen Tomoiu	Ricardo Neves Godinho	Sung Wan Kim
De Sá	Moacyr Saffer	Richard M. Rosenfeld	Suzina Sheikh Ab Hamid
Lilia Dimitrov	Mohamed Akkari	Rizka Fathoni Perdana	Tagwa Abdalla
Lilian Scapol Monteiro	Moshe Chaitchik	Robert Ruben	Tal Marom
Liliana Palma	Nara Orban	Rodolfo Villarreal	Tania Maria Sih
Lisa Elden	Nayara Lacerda	Rohit Verma	Teolinda Mendoza De
Lorena Rodrigues	Neil Chadha	Rolanda Gil Ng	Morales
Luca Redaelli De Zinis	Nesrettin Fatih Turgut	Ron Mitchell	Thaisa
Lucía Arias Asch	Nguyen Tuyet Xuong	Rosana Cristine Otero	Thomas Mancinelli
Luciana Pimentel	Niall Jefferson	Cunha	Thuy Nguyen Thi Thanh
Oppermann	Nicola (Nikki) Slee	Rosaria Sano	Toma Avramov
Luis Jiménez Ferreres	Nicolas Guertler	Roy Francisco Acosta	Udayan Shah
Luz Tobar	Nicole Bejarano	Valerín	Valeria Rees
Magdalena Roques Revol	Nina Yoshpe	Safeena Kherani	Veronica Rodriguez
Mai Thy Truong	Noemie Rouillard-Bazinet	Sahba Sedaghat	Victor Abdullah
Malba Bastidas	Noriko Morimoto	Sajidxa Mariño	Victor Rachkov
Manoel De Nobrega	Norzi Gazali	Sam Daniel	Victoria Possamai
Manohar Shaan	Nuntigar Sonzuwan	Samir M. Bawazir	Victoria Tenías
Marc Thorne	Nurliza Idris	Sandra De Lucas Aragão	Vincent Couloigner
Marcelo Otsuka	Olga Karneeva	Sandra Toso	Vinicius Ribas Fonseca
Marcelo Silber	Oliver Haag	Sanjay Parikh	Vladan Subarevic
Márcio Emrich Campos	Oscar R.Terraza-Calderon	Sarah Morrison	Wei-Chung Hsu
Margo Mckenna Benoit	Ozan Gökler	Saraiza Abu Bakar	Wu Zebin
María Beatriz Rosales	Pamela Pol Paulino	Scott Rickert	Yancy Acosta
Maria Beatriz Rotta Pereira	Patricia Andrade	Scott Schoem	Yin Tan Kuei
Mariana Pires De Mello	Patrícia Campos Elia	Seok Hyun Cho	Yoo-Sam Chung
Valente	Patrícia Cristina Berenhi	Sergio Sarradell	Yoon Se Lee
Mariana Saad	Patricia Mesquita Vilas	Shamina Sara Moses	Youjin Li
Marilena Trozzi	Boas	Sharon Ovnat Tamir	Young Ho Kim
Mario Zernotti	Patricio Bellia Munzon	Shazia Peer	Zuleyma Hernandez Rholas
Marlene Soma	Paulo Pires De Mello	Shifa Zulkifli	Рита