Answers to Audience Questions - WSPOS Worldwide Webinar 6:

Paediatric Ophthalmology & Strabismus & Tele-Ophthalmology Practice During COVID-19

WWW 6 Panellists

Dominique Brémond-Gignac (DBG), Massimiliano Serafino (MS), Ken Nischal (KKN), Connie Lai (CL), Nicola Freeman (NF), Ramesh Kekunnaya (RK)

1. **What kind of tests do you do? PCR, IFA, rapid test? Terms?**

DBG: PCR and ELISA

MS: PCR and buffer

KKN: From the CDC, USA website
"Two kinds of tests are available for COVID-19: viral tests and antibody tests.

- A viral test tells you if you have a current infection.
- An antibody test tells you if you had a previous infection.

An antibody test may not be able to show if you have a current infection, because it can take 1-3 weeks after infection to make antibodies. We do not know yet if having antibodies to the virus can protect someone from getting infected with the virus again, or how long that protection might last."
Viral tests are PCR bases while antibody tests may be IFA based

CL: In Hong Kong, PCR test are done, as antibody tests can be expensive. The (PCR) test is the most effective way of detecting the presence of coronavirus in the body as they give a quicker result. You need to see a doctor first who determines whether testing will need to be done. A swab is taken through the nose / throat or deep saliva sample and sent to a centralised lab. Results usually take two to three days; after that you will receive a message from the Hong Kong Health Authority.

NF: Mid turbinate swab - PCR. Possibility of this becoming just nasal swab or saliva - PCR

2. **Does ped. cataract generate aerosol as ant. vitrectomy is required?**

DBG: We wear FFP2 and I don't think it generates aerosol

KKN: Taken form the American academy of ophthalmology see: https://www.aao.org/headline/special-considerations-ophthalmic-surgery-during-c "The best evidence available suggests it is unlikely that there would be both sufficient virus present and sufficient aerosolization during pars plana vitrectomy to infect a surgeon or scrub nurse." I think that is likely true even if you are doing a limbal approach

NF: I would think not - when aspirating and cutting vitreous, the probe is in the eye. The vitreous and fluid from the patient is collected in a closed container.

RK: I don't think so as it is in closed chamber. GA procedures are aerosol generating procedures; hence we need to take all precautions.

3. **What do you do when children cry in opd specially during fundus evaluations?**

DBG: Mask and visor

MS: We have FFP2 masks

KKN: PPE are key; I use eye protection, gloves and mask. I do not use direct ophthalmoscope at all and use Indirect

CL: We try and use soothers but otherwise there is not much else. We protect ourselves with surgical masks, gloves +- visors. Afterwards, strict hand washing and cleaning of lenses. Our speculums are sterile packaged and used ones are sent back for re-sterilization.

NF: We ensure good dilatation (preferably parent instils drops) so that the examination is easier and faster. We swaddle the child in a blanket and use a mask for the brief fundus examination, especially if the child is coughing.

RK: We use PPE. N95 mask, Gloves and protective eye wear.

4. **Do you advice COVID testing before GA?**

DBG: yes

MS: YES

KKN: Yes, at my hospital all patients are tested. It is not so much the operation but to have an asymptomatic positive patient means that the recovery must be in isolation room rather than in the open areas

CL: Currently there is no guideline from the Centre of Health and Protection requiring us to test prior to GA.

NF: At our hospital it is currently mandatory to test for COVID-19 pre-op. The test result takes 48 hours, so the child needs to be brought in 3 days prior to surgery and then sent home for isolation. This is of course not always practical and does not entirely make sense, especially if the patient relies on public transport. Emergency and trauma cases that are booked on the emergency list are managed in theatre as if COVID+ without testing.

RK: No we don't. We do a screening of child and parents (during PAC) and make sure that they are at home for the past 14 days.

5. **Could you please send the links for 9 gaze app and strabismus app.?**

MS: Check on apple store or google play for 9 gaze

KKN: These are available on the App Store for IOS and Google store for Android: just search '9 gaze'

6. **Respected Ken sir, can u please elaborate on visual acuity testing app in children?**

   KKN: There are two types of applications: ones that are web based i.e. You have to go to a web page or ones that are downloadable as an app on your smartphone. The ones that are web based can be used on a desktop or laptop computer. This makes the size of the letters etc. A little easier to see. The ones on the handheld devices can be difficult to ensure that they are steady while the child is reading them. The contrast of the background, the single optotype can all affect the visual acuity score either beneficially or adversely. These are all things that need to be considered when using such apps at home.

7. **Respected Ramesh sir, have u started doing squint surgery? And if yes, what precautions do we need to follow?**

   KKN: I have done strabismus surgery in the past week. Standard. Precautions since the child was tested negative. Child had an LMA placed.

   NF: In South Africa we have not done any squint since start of lockdown and we do not plan to do any until the peak of our epidemic has passed.

   RK: Yes, we have started doing squint surgery. Thorough screening, make sure that they are at home for 14 days. We do not perform COIVID test. In the OR we are taking universal precautions with PPE etc. We enter the OR after induction and once the surgery is done we wait for 25-30 minutes for air recirculation.

8. **Do the COVID Kawasaki pts. get uveitis?**

   KKN: No; in fact, despite more than 3.75 million cases of COVID-19 worldwide, there is not a single case report of uveitis or retinitis associated with the infection."
   Taken form the American academy of ophthalmology see: https://www.aao.org/headline/special-considerations-ophthalmic-surgery-during-c

9. **Dr. Ramesh: We have stopped school screening camps where huge numbers were being screened in remote areas. Could you advise us on how to proceed going forward?**

   KKN: I don't do these, so will leave it to RK

   RK: As of now we have stopped all the screening programmes including community / school screening programmes. Only ROP screening program is continuing. We need to wait further for the govt orders or wait till the virus spread stops. Until then its best to halt these screening programmes. Screening through tele ophthalmology can still be continued esp. W r t to sight threatening g disorders.

10. **Dr. Nicola Freeman: What is your comment about whether a crying baby can cause aerosol during ROP Screening? Should we put shields on indirect fundoscopy?**

    KKN: I think some of the equipment the 3-D print files of which have been given for free on the WSPOS website should be used. See: www.wspos.org

    NF: Having the baby suck on the tip of a small swab soaked in sucrose helps to reduce the screaming. We have been doing the ROPS round using an N95 mask + fastidious hand washing and cleaning of all instruments. No touching of the indirect or its light button until hands are washed. Up until now we have not had any neonates testing positive for COVID. We have not been using a shield on the indirect as it causes fogging, but we plan to try the shield for indirect as per WSPOS website. See: www.wspos.org

11. What are the medico-legal implications of tele-ophthalmology?

MS: We still do not know and it depends on the Country. Informed consent is necessary

KKN: In my talk I made it clear that at the beginning of the virtual visit consent should be taken from the patient or parent explaining the shortfalls of not being able to physically examine the patient. You must assess when the risk of developing a COVID related morbidity is greater than the risk of reversible vision loss. This will help decide if a patient must be seen in person.

RK: Indian Govt has released guidelines for Tele medicine. Any Registered medical practitioner is allowed to do this with virtual consent of the patient, he / she can use any interface to call or video call the patient and examine and advice treatment. W r t prescription the doctor has to sign and add the registration number to it.
Please find the Govt. guidelines here: Article 1 and Article 2

12. Do your hospitals require any COVID testing prior to admitting the patient? If yes, which one?

MS: Buffer if patient needs surgery

KKN: For all operations we offer COVID testing though at the moment it is not mandatory. All patients entering the hospital are screened and given a mask to where unless they are under 2 years of age.

CL: See answer to Q 4.

NF: See answer to Q 4. For non-surgical admissions, testing is not mandatory at our hospital.

RK: No, we do not admit the patients unless it's absolutely necessary.

13. In pts. with HIV on HAART, do you think antiretroviral therapy might be somewhat protective against COVID for these pts.?

KKN: Taken from CDC website: While there is some evidence that this type of HIV medicine might help treat infections with [severe acute respiratory syndrome] and [Middle East respiratory syndrome] (2 other coronaviruses related to the virus that causes COVID-19), there are no data available yet from clinical trials that these drugs help people with COVID-19." To date, however, trial results are mixed on the use of these drugs in the current pandemic

NF: This is unknown and your question will most likely be answered in the next months.

14. Dr. Freeman: How many times do you use your N95 mask before you dispose it?

MS: 1 week

NF: In the clinic / consulting room we are currently using surgical masks. We have a limited supply of N95 masks and these are being reserved for aerosolising procedures so that there will be adequate supply during the peak of our epidemic. When we do use a N95 mask, we dry it out in a paper bag overnight and reuse 4 times. Also see reply to Q below.

15. Is N95 or KN95 used in the clinic?

DBG: Neither

KKN: I only use the N95 (which has to be fitted once so you know which size to use) if the patient is positive or screened positive from history. I have not used nor do I have access to the KN95. Please see the attached guide we use in our department

PATIENT SCREENED		PATIENT WEARS		PROVIDER WEARS	
NEGATIVE	EXAM	PROCEDURAL MASK		PROCEDURAL MASK EYE PROTECTION GLOVES	PROCEDURAL MASK =YELLOW
NEGATIVE	INJECTION	PROCEDURAL MASK		SURGICAL MASK (PROCEDURAL MASK IF NOT AVAILABLE) EYE PROTECTION GLOVES	SURGICAL MASK = WHITE/BLUE
POSITIVE	EXAM NECESSARY	PROCEDURAL MASK		N95 EYE PROTECTION GLOVES GOWN	
POSITIVE	INJECTION NECESSARY	PROCEDURAL MASK		N95 EYE PROTECTION GLOVES GOWN	

CL: According to HK Emergency level guidelines, our eye units are “other” areas and surgical masks are adequate. However, the Hospital Authority has arranged N95 mask fit tests for all staff as a requirement, so all of us have the “model number” that are suited to our face type. N95s are available if we are dealing with risk patients or procedures.

NF: N95 masks are currently in short supply - in our OPD we are currently wearing surgical masks.
Https://www.cdc.gov/niosh/npptl/pdfs/understanddifferenceinfographic-508.pdf
We only use N95 for ROPS rounds and in operating theatre.
For a good explanation of the similarities and slight differences between N95 and KN95, please see:
Https://smartairfilters.com/blog/whats-the-difference-between-n95-and-kn95-masks/
For those colleagues who are working in third world settings and who are perhaps not receiving updated guidelines from their respective health departments; Please refer to the following guidelines: https://www.idealhealthfacility.org.za/docs/Manuals-and-Handbooks/COVID%2019%20Disease%20Infection%20Prevention%20and%20Control%20Guidelines%20Version%201%20-%20%20April%202020.pdf
These guidelines are being updated regularly, based on emerging evidence and WHO recommendations and are applicable and feasible in a developing country such as South Africa. Version 2, from 21 May 2020, of the above guideline includes an amendment recommending that all clinical staff wear surgical masks when consulting irrespective of whether or not the patient is known or suspected to have COVID-19, or has respiratory symptoms.
NB If your own department of Health is providing guidelines, these may be more applicable to your setting.

RK: I use N95 mask in the clinic. I use it 2-3 times.

16. It is difficult for a child below 3 years of age to be fitted with a mask, right? How do you examine these kids?

DBG: Mask and visor

MS: Just my mask

KKN: It is not that it is difficult but many won't wear them. Also for children under the age of 2 years there is a risk of suffocation if they wear a mask.

CL: I find most children in Hong Kong are ok with wearing masks, as everyone is doing the same. Of course, there are stubborn ones, so we protect ourselves instead (masks, visor, gloves +- face shield). The issues I hear the most are difficulties in finding/ ordering paediatric sized masks, since children tend to get them wet, soiled, dropped etc. So they go through them quite quickly.

NF: Yes, it is tricky. We have been using cloth masks supplied to the patient on arrival, if they do not have their own.

RK: Yes, it's difficult and many children are reluctant to wear. So always use PPE 's.

17. **What precautions should be taken for infants considering we can't make them wear masks and we usually need to do indirect ophthal. And close examination for them?**

DBG: Hand held fundoscopy

MS: Just my mask

KKN: Please see answer above to a similar question

CL: We protect ourselves – gloves, mask, visor +- face shield. Hand hygiene and wiping lenses often.

NF: See answer to Q 3.

18. **Can a 4-month-old patient with bilateral congenital cataract be taken up for surgery?**

DBG: Yes, we operate

MS: YES

KKN: Absolutely. As long as the child is systemically well and not at increased risk from COVID 19 then definitely this is a child that needs surgery.

CL: Technically yes as our operation theatres were not closed, but we will need to discuss with parents the spacing between the first and second eye that is being done.

NF: The visual outcome will depend on how dense the cataracts are and how long the cataracts have been present. If there is visual potential, then surgery should be considered.

RK: Yes, can be taken up for surgery. The gap between two eyes surgery can be increased to 14 days. Screening check of parents and infant is mandatory. They should be home quarantined.

19. **Do you use UV light for sterilization?**

DBG: Only in the OR at night

MS: I do not use it

KKN: No we do not at present. There is a paper that is at the pre-print stage i.e. Has not undergone full peer review. It is published in VIROLOGY authors Manuela Buonanno, David Welch, Igor Shuryak, David J. Brenner. Title: Far-UVC light efficiently and safely inactivates airborne human coronaviruses. The wavelength used may also damage skin DNA and mucosal lining DNA. So we have to evaluate this work carefully.

CL: No

NF: No, not readily available at our hospital for all to uses.

RK: Yes, in the OR at night. And also to sterilize the visors etc.

20. How do they sterilize the slit lamp and VF devices?

DBG: Wipes with disinfectant

MS: Alcoholic 75% solution

KKN: The slit lamp gets wiped down with alcohol wipes and left to dry for 5 minutes. The VF machines are problematic because if a patient sneezes or coughs then there is a danger that the bowl could be contaminated. We have a Perspex shield that has been placed (it is curved) to block the possibility of droplets getting into the bowl. Some manufacturers of VF machines have their own recommendations. Please see manufacturer website.

CL: At our centre, we use Clinell universal wipes to disinfect patient contact areas (No financial interest).

NF: Alcohol swab

RK: Alcohol wipes.

21. Do you use UV c light for OPD and OR sterilization?

DBG: No

MS: No I don't

KKN: See my answer to Q 19

NF: No. Autoclave and alcohol wipes.

22. What were the guidelines for categorizing the surgeries as emergency / Non-Emergency?

DBG: Emergencies only during lockdown

MS: We do not have strict guidelines, then we use our knowledge and conscience

KKN: These are the guidelines used in my department for semi-urgent or urgent surgical cases:

- BCVA distance <20/40 and/or near ≤ N6 in the better seeing eye *
- Progressing glaucoma
- Severe ptosis causing disabling loss of visual field
- Severe ocular surface necessitating amniotic or buccal membrane graft

- Corneal transplantation for painful bullous keratopathy
- Evisceration or enucleation for painful blind eye or ocular trauma
- Excisional or incisional biopsy for suspicious lesions
- Retinal surgery to prevent permanent vision loss
- Pediatric ophthalmic surgery to prevent amblyopia or irreversible vision loss

In our practice, cataract surgery constitutes about 70% of all ophthalmic surgeries. Although seemingly non-life sustaining, visual rehabilitation is essential for physical, social and mental well-being of our patients. Cataract surgery has been linked to improvements in cognition, decrease in falls and reduction in motor vehicle accidents. In addition to visual acuity, other parameters like contrast sensitivity, anisometropia and individual needs of the patient should be considered before surgery. However, patients above 70 and patients at risk for COVID complications should not be scheduled in the next few weeks, unless vision impairment has major implications in daily life, e.g. Risk of falls.

CL: Emergency surgeries are sight / life threatening, trauma, corneal graft and retinal detachments (macula on), and ROP laser. Semi urgent surgeries could be arranged: congenital cataracts, goniotomy, infantile ET.

NF: Emergency – visual outcome will be negatively affected if surgery delayed by >24 hours e.g. Corneal laceration. These cases are placed on emergency list.
Urgent – visual outcome will be negatively affected if surgery not done within next week/s e.g. Poorly controlled glaucoma, neonatal cataract. Currently, these cases are placed on a weekly theatre slate.
Non-emergency – strabismus surgery, most oculoplastic, nasolacrimal duct obstruction.

RK: We use the following guidelines.

Category A: Emergencies – MUST SEE in clinic
• Any acute optic neuropathy unless stabilized (less than 20 days) • Acute optic disc oedema • Acute pupillary abnormalities • Acute onset strabismus or diplopia till evaluation and stabilization • All preterm babies for Retinopathy of Prematurity (ROP) screening/management should be seen as emergency. Asymptomatic stable post ROP babies more than four months of age can have delayed appointments after 2-3 months • Any previously stable patient with acute vision change, acute onset diplopia, leukocoria/pain/redness or new neurological/Ophthalmological symptoms • Any leukocoria, infantile cataract, glaucoma, corneal cases, retinoblastoma etc. • Acute red eye in a child- If Conjunctivitis, follow conjunctivitis protocol only

23. How many ophthalmologists and residents were COVID-19 infected?

DBG: Impossible to know because not enough tests, however we have a number of them infected in some hospitals

MS: We do not have these numbers available

KKN: I do not know

CL: None in HK

NF: In our state provincial hospitals the doctors are assisting in the testing centres and specialists in training have been redeployed to assist in other units. Currently no ophthalmologists have tested positive for COVID.

RK: No idea

24. How do you schedule urgent but not emergency patients?

MS: See my answer to Q 22

KKN: See my answer to Q 22

CL: Although all elective surgeries were cancelled, we still have approximately 1-2 half day GA session per week, so we negotiate amongst subspecialty teams, according to condition.

NF: Assuming you meant cases booked for surgery. See answer to Q 22. In our hospital Ophthalmology and Urology are currently sharing one full day theatre per week. Even this theatre slate is not a given as it depends on the availability of theatre staff.

RK: We have begun to see 30 -40 % of our load as per appointment and walk in. Also see answer to Q 22

25. What precautions for GA?

DBG: Testing FFP2 masks

MS: Testing patient via buffer, keeping him/her in the hospital up to surgery

KKN: Anesthesia treats all patients as if positive when intubating because that is an aerosolizing procedure. If patient is positive or screened positive then N95, normal sterile gowns and gloves and if possible negative pressure OR flow.

CL: For us, standard precautions (as usual practice). High-risk procedures (intubations) the anaesthetist will need to gown up / N95, and non-essential staff should leave the room during the procedure. We have stopped nasolacrimal procedures during this time.

NF: If and when we need to operate on patient COVID+: Full personal protective gear i.e. Scrubs, plastic apron, cap, N95 mask, 2nd cap, two gowns, two pairs of gloves. Masks with shields fogs up at microscope. Surgeon only enters theatre 20 min after intubation.
If COVID test negative: Usual theatre garb + N95

RK: Use proper PPE and visor while intubating, enter the OR only when required, complete the surgery asap, and give enough time for air recirculation. Negative OR pressure is ideal but not practical in Ophthalmic theatres.

26. Respected mam, if at all squint surgery needs to be done, what precautions we should take? Or is it better to postpone?

MS: It is better to postpone

KKN: If your system is in lockdown then you have to postpone like we did. But if there is a gradual ramp up then you can consider the surgery with precautions mentioned in the previous questions.

CL: Depending on what is the squint condition: if can postpone, that is preferred.

NF: We have postponed all squint surgery until after the epidemic, even though we are not sure when that will be.

RK: Depends on the situation in your country. With adequate precautions it can be done. Please see answer to Q 7.

27. Any special considerations prior to beginning strabismus surgeries under general anaesthesia?

MS: See my answers to Qs 22, 25 and 26

KKN: NO just the precautions mentioned above

CL: Strabismus surgeries were not done during this time. See question 24 for precautions.

NF: See answer to Q 26

RK: Please see Q 7

28. How can we check the vision via telemedicine? If so, any app. Recommendations?

DBG: We can't do it for sure

KKN: See my answers to Q 6

29. How about droplets in a child who is crying while the doctor is checking their eyes?

DBG: Visor and mask

MS: To use mask it is a better solution (and shield if available)

KKN: See above for answers to this

CL: See answer to Q 3

NF: Mask and meticulous hand washing is the best we can do.

30. I've got a video clip from Bristol eye hospital that shows aerosol during phaco. by using a cadaveric model. It becomes viral among Thai ophthalmologists. What's your opinion?

DBG: I think viral load is low in this case but no study to my knowledge

KKN: From the AAO: https://www.aao.org/headline/special-considerations-ophthalmic-surgery-during-c "The phacoemulsification procedure starts with an anterior chamber fill by viscoelastic, which is replaced by BSS irrigated from the phaco tip. Aerosolization probably occurs to some degree when the ultrasound is engaged, but it would be BSS that is aerosolized, not the patient's aqueous. Based on this logic, the risk of aerosolized virus during phacoemulsification would be extraordinarily low."

CL: The crux is whether there is virus in the aqueous, and if so, the concentration, and what is being aerosolized (aqueous should be displaced by viscoelastic, and the fluid is BSS). The recommendations the authors suggested are helpful – Our standard phaco practice is using betadine / 2.2 wounds and phaco times are usually very short. Our only

change to our standard practice is having the patient wear a mask / fixed with micropore to bridge of nose), with nasal cannula (oxygen) underneath and standard draping. So far we are ok!

NF: It is not yet clear if COVID-19 is found in aqueous humour.

31. Are patients allowed to wear their own (possibly dirty) masks?

DBG: Yes

MS: Yes, in case of outpatients

KKN: Yes, they are; remember the purpose is to reduce spread of droplets

CL: If masks are visibly soiled, we will give them a new one.

NF: In our hospital patients are only issued a mask if they do not have their own. Yes, we cannot be certain they are clean.

RK: Yes, they can. Even a cloth mask is fine for patients. Some form of mask is mandatory.

32. Do you allow masks with ventilator port?

DBG: Yes

MS: yes

KKN: I have seen two or three people wear these; they are allowed

CL: No. If we see these masks when the patient is registering, we will give them a surgical mask and ask them to wear it in our clinical areas / during the consultation.

33. What do you suggest for congenital cataract surgery under general anaesthesia? What are the precautions for the same?

MS: See my answers to Qs 22 & 25

KKN: The precautions are more for anesthesia because endotracheal intubation is aerosolizing. The precautions for surgeon depend on whether the child is COVID positive or not. If positive, N95 mask and recover in isolation; if negative, then standard surgical masks

CL: We use the same precautions (see answer to Q 24). Most congenital cataract surgeries do not need phaco.

NF: See my answer to Q 25

RK: Please see our answers to Q 18.

34. How do you schedule semi-emergencies? How do you decide the time frame? What about non-emergency cases? When should we see them? In around 6 months?

DBG: Difficult choice

MS: It depends on disease and risk for visual acuity first

KKN: It is difficult to give specific times but use the following guidelines: if the probability of morbidity of a potential COVID-19 infection is higher than the risk of vision loss from. Delayed review then you can delay. If. Not then based on the ocular condition, you can determine when to see the patient. This is obvious for ocular emergencies but becomes difficult when discussing amblyopia in a 5-6 yr. Old. You must assess the risk of COVID morbidity vs vision loss risk. Any co-morbidity of the patient e.g. Diabetes would make the risk of COVID morbidity higher

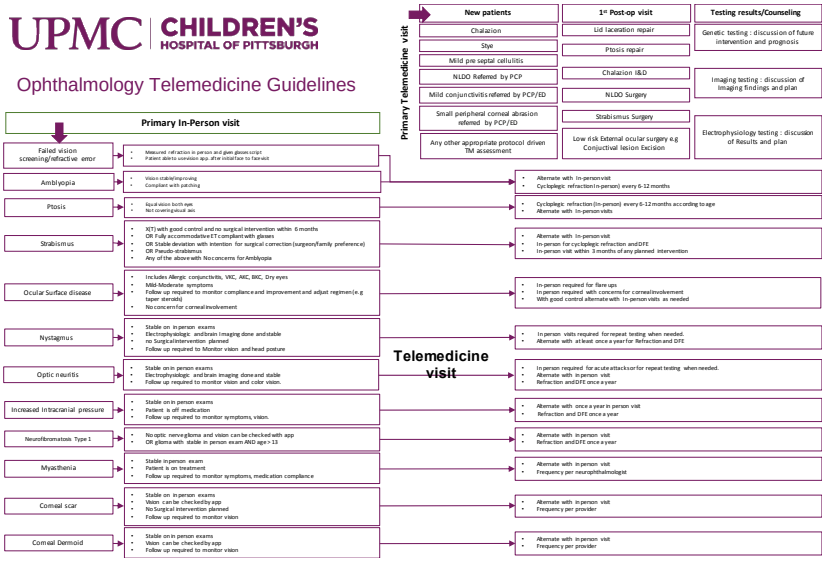
CL: Our clinics never closed so scheduling for review was not an issue.

NF: Difficult to ask this question. We are checking through the file of each patient to decide on when to rebook. Depending on potential to lose vision the new date varies between 1 week and 8 months.

35. Are there any tele-ophthalmology guidelines?

DBG: Not yet

KKN: Please see these guidelines authored by Drs. Amgad Eldib and Jamila Hiasat and approved by my department.



CL: As our clinics did not close, we did not use telemedicine at all. However, it is never too late to start exploring this and I'm eager for guidelines as well!

RK: Please find the Govt. guidelines here:

Commented [Akhila1]: Daire, please link the 3 attached docs here.

36. How about droplets if a child is crying while we a doctor is checking their eyes?

MS: See my answers to Qs 29

KKN: Please see similar questions above with answers

CL: See my answer to Q 3.

NF: See my answer to Q29

37. Is intubation of the patient considered to be 'aerosolization', or is independent of the planned procedure?

KKN: Yes, it is considered aerosolizing.

CL: For anaesthetists this is a high risk procedure as there is suction / manipulation of the airway involved. See my answer to Q 25.

NF: Yes, intubation is considered to be an aerosolizing procedure. In our hospital the surgeon only enters the COVID+ theatre 20 minutes after intubation of the patient.

38. How long we can delay surgery of developmental cataract?

DBG: No more than 2 months' old

MS: If it is impossible to explore fundus in myosis, I wouldn't wait more than 6 weeks of age for unilateral and 8-9 weeks of age for bilateral

KKN: You need to assess the effect of amblyopia and the effect on daily living activity. I have done telemedicine visits and assessed how the child is doing visually through questioning and vision function testing. So asking child to look out of. Window and tell me if vision seems blurrier (glare test). Only if the vision is less than 20/60 and there is signs of daily living dysfunction would I do during lockdown.

NF: See my answer to Q 18

39. To Connie: does phaco. produce aerosols in atmosphere?

KKN: Please see my answer above about same question

CL: The video from Bristol shows generation of aerosols in a cadaver eye, so yes. The amount of virus concentration in the aqueous (and if that is what is being aerosolised) is subject to further analysis.

40. A poorly fitting mask, or touching the outside of the mask to adjust it, and then touching your face, may be more problematic than no mask at all, right?

MS: Yes, it is right

KKN: Actually studies show that people touch their faces much less when wearing a mask. That said, the reduction is droplet transmission cannot be refuted.

CL: It depends if the wearer washed their hands after touching the mask!
I'd like to highlight a study from the University of Hong Kong Microbiology department published May 15th. They used hamsters in a cage, infected COVID hamsters cage on the left side, naïve hamsters in a cage on the right. There was a fan positioned that directed air flow from left to right. There were 3 arms to the study
1st arm – no mask between cages

2nd arm – Mask at inflow inlet of naïve hamsters
3rd arm – Mask at outlet of infected animals.
The conclusions:
With no mask, 66% of naïve hamsters were infected after 7 days
When the mask was placed at the inlet of the naïve hamster cage – 33% naïve hamsters were infected after 7 days
Mask at outlet of infected cage → 16% of naïve hamsters were infected by 7 days.
Infected hamsters had milder symptoms than hamsters that were directly inoculated with COVID.
So masks are not 100% effective but it did decrease transmission, especially if the person wearing it is infected.

NF: Correct. Each time you touch your mask or your face you should wash your hands.

41. **Did any ophthalmologist get deployed to help with COVID patients?**

DBG: Yes, sure however not all!

MS: Yes, in my country

KKN: I will leave that to Dr. Serafino who actually worked in the ITU during the crisis

CL: To medical ward, not Covid ward.

NF: Yes

42. **How is the management of the paediatric patients in the office?**

MS: Just mask for the patient (depending on the age) and doctor

KKN: We have found that measuring visual acuity is harder with the child staring at the examiners mask or being distracted. Other than that it is very similar. With the precautions outlined above and maintaining social distancing it is possible to have a productive safe clinic.

CL: Unchanged. As there were high default rates, the waiting area was pretty empty and we could social distance

NF: See my answer to Qs 3, 10 and 16

43. **Dr. Nicola Freeman: Any concerns of aerosols during ROP screening as the infant is crying?**

KKN: Yes. Precautions as described above must be taken

NF: See my answer to Q 10

44. **How accurate is Visual acuity recorded via different charts? Many of the single optotype charts can overlook Amblyopes, right?**

KKN: Please see the answer to use of digital apps. Everything you say is appropriate. We have to be cautious in interpreting the results but as parents get better at doing the tests the more reliable they are likely to be.

45. **Please suggest good vision screening app for Android app!**

KKN: Please see the following YouTube video: https://youtu.be/hnstglh2xfy

46. Povidone iodine kills corona virus?

DBG: Probably yes but not tested yet

KKN: From the AAO: https://www.aao.org/headline/special-considerations-ophthalmic-surgery-during-c

"Povidone-iodine very effectively inactivates enveloped viruses at the concentrations typically used in clinical practice. A study from 2006 showed that povidone-iodine products were effective against SARS-cov. The biology of SARS-cov-2 is sufficiently similar to afford continued confidence in the use of 5% povidone-iodine as a surgical prep."

CL: This article is useful: https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/fulltext

NF: This is currently being investigated by several researchers. Povidone-Iodine has been shown to be bactericidal and virucidal when used as a gargle/mouthwash. Effectivity of Povidone for COVID-19 in tears is still unclear.

47. Ken, what is a procedural mask. Is it similar to a surgical mask?

KKN: A surgical mask is used inside the operating room or within other sterile procedure areas to protect the patient environment from contamination. It also protects the clinician from contaminated fluid or debris generated during the procedure. Surgical masks have ties so that they can be adjusted for fit, and are tied over top of a surgical cap or a bouffant cap.
A procedure mask is used for performing patient procedures, or when patients are in isolation to protect them from potential contaminants. Procedure masks are used to protect both patients and staff from the transfer of respiratory secretions, fluids or other debris. Procedure masks are used for generally "respiratory etiquette" to prevent clinicians, patients and visitors from spreading germs by talking, coughing, or sneezing. Procedure masks have ear loops for quick donning, and since they do not slide on the hair, they can be worn without a surgical cap.
From:https://www.primed.ca/clinical-resources/astm-mask-protection-standards/