

Guidelines for Ophthalmic Care during COVID-19 Pandemic

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We are in the midst of a global crisis, which changes daily. Our federal, provincial, local, hospital, and university authorities provide mandates and recommendations that are applicable to the practice of medicine during the COVID-19 pandemic. The purpose of the guidelines below is not to replace those mandates and recommendations, but to add those specifically relevant to the practice of ophthalmology. The guidelines reflect a collaborative effort among the Canadian Ophthalmological Society, the Association of Canadian University Professors of Ophthalmology, and subspecialty societies. The American Academy of Ophthalmology guidelines at www.aao.org/headline/alert-important-coronavirus-context are also useful for the context of ophthalmic care, and were useful in the development of the guidelines below.

General recommendations

The care of ophthalmic patients requires examination of the eye and adnexa at a short distance, usually less than 20 cm. Examination takes place at a slit lamp directly facing the patient. This places the ophthalmologist at particular risk for transmission of the causative virus, SARS-CoV-2. In addition, the virus can itself cause conjunctivitis. Finally, transmission can occur from asymptomatic, presymptomatic, and mildly symptomatic carriers, and the existence of community transmission means that a negative travel history does not exclude disease.

Because of these specific risks, the following are recommended for the ophthalmologist taking care of *any* patient.

- 1) The slit-lamp should be equipped with a large shield to avoid the patient breathing, coughing, or sneezing on the examiner.
- 2) The examiner should wear a mask or face-shield capable of significantly decreasing transmission. It is unclear how much risk is specifically associated with examining patients at the slit-lamp, although we know transmission occurs from asymptomatic patients simply by being in their proximity, and thus in a time of scarce resources, ophthalmologists must use their best judgement to ensure the safety of themselves and their patients. A fitted N95 mask worn by the examiner is the best prevention when an examination is required, with the understanding that optimal use of finite resources may limit its availability, in which case a surgical mask can be utilized.

- 3) If a face-shield is not worn, goggles or other eye protection should be worn.
- 4) Gloves should be worn and disposed of immediately afterwards. Cotton tip applicators should be used to manipulate the eyelids.
- 5) Drops should ideally be single use to avoid patient-to-patient transmission. If clinically appropriate, tonometry and dilation can be deferred.
- 6) Examinations should be performed expeditiously, with minimum talking during the examination.
- 7) After the visit, all surfaces that the patient touches or exposed to respired droplets from the patient should be disinfected with wipes capable of killing the virus. Such areas typically include the parts of the slit-lamp that touches the patient's face, the handles, the arms of the examining chair. All devices (tonometer tips, cotton swabs, etc) that contact the patient should be disposed of or disinfected.
- 8) Whenever possible, deferral of care for non-urgent cases is advisable. Space your clinical bookings to avoid crowds in the waiting room. Consider moving to virtual care when possible, either by telephone, audiovisual calling or other forms of telemedicine.

Recommendations specific to surgical and subspecialty care

- 1) As with ambulatory care, surgery uses resources that might otherwise be needed for the care of COVID-19 patients. Such resources include supplies (masks, gloves, etc.), personnel, and recovery or inpatient rooms. Surgery also exposes patients to risk of transmission in the hospital setting, exposes hospital staff to possible transmission from the patient, and exposes the caregivers associated with the patient's transport to both.
- 2) In general, elective surgery should be deferred unless there is a clear risk of irreversible visual loss in the short-term. For example, cataract surgery and epiretinal membrane peeling can be deferred, while macula-threatening retinal detachment and post-operative hypotony cannot. This can be difficult to assess, and the following subspecialty-specific guidelines must be viewed in the setting of the local environment and the specifics of the patient's clinical presentation.
 - a) General
 - Trauma including globe rupture, intraocular foreign body, lid lacerations, orbital cases
 - Any emergency surgery for a vision threatening condition
 - b) Anterior segment
 - Corneal perforation or risk of perforation
 - c) Glaucoma

- Glaucoma uncontrolled on maximal therapy and with significant risk of visual field deterioration
 - Bleb leak
 - Device exposure
 - Hypotony with hypotonous maculopathy and/or choroidal effusions
- d) Oculoplastics
- Cancer-related care
- e) Retina
- Retinal detachment
 - Endophthalmitis
 - Dropped nucleus from cataract surgery
 - Scleral buckle extrusion
 - Drainage of choroidal hemorrhage or effusions
- f) Pediatrics
- ROP treatment

Recommendations specific to the teaching environment

- 1) The benefit of training has to be balanced against the risk to the learner. In general, ophthalmology teaching of medical students in the patient setting should be deferred.
- 2) For residents, the general guidelines above should be followed.
- 3) For all learners, didactic, small-group, and rounds-based teaching should be done online using widely available conferencing packages.
- 4) Examinations such as the Royal College written examinations are already being rescheduled. The OKAP examinations have been deferred and will be done online.

Recommendations specific to the research environment

- 1) Participants of clinical studies are usually required to be assessed and/or treated as part of the trial protocol. In the case of the COVID-19 pandemic, the above guidelines for patient care are relevant to participants in clinical studies.
- 2) In the case of where an assessment is required for which there is no safety issue, consideration should be given to deferring or obtaining the information via online methods. In these situations, a protocol deviation will normally be recorded.
- 3) Postpone recruitment of new study patients for both ongoing and new studies.