

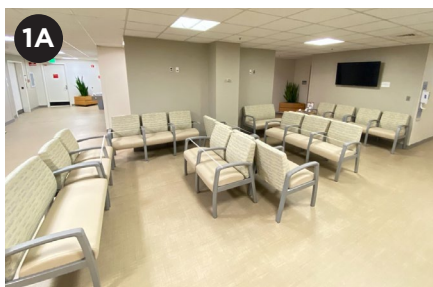
## MD Roundtable: COVID-19 and Clinical Precautions

**A**s the COVID-19 pandemic sweeps across the globe, ophthalmologists have been grappling with questions about ocular manifestations of the disease, protective measures to reduce transmission, and keeping patients informed. Kathryn A. Colby, MD, PhD, of the University of Chicago, hosted an MD Roundtable with Ashley Behrens, MD, of the Wilmer Eye Institute, Jodhbir S. Mehta, MD, PhD, of the Singapore National Eye Centre, and Sonal S. Tuli, MD, of the University of Florida. These cornea experts discuss their firsthand experience with the disease and what they have learned thus far. (For the discussion of ocular manifestations, see “Clinical Experience and Scientific Insights,” with this article at [aao.org/eyenet](http://aao.org/eyenet).) These conversations took place on April 22, 2020.

### Screening and Eye Care

**Dr. Colby:** *Let's begin with outpatient treatment since that's the majority of what we do as ophthalmologists. Which measures are you using to screen patients for SARS-CoV-2 infection in the clinic, and how are you caring for patients who require outpatient procedures, such as laser treatments or injections, during the COVID-19 pandemic?*

**Dr. Behrens:** Patients who come to the clinic must first complete a questionnaire to help us determine the potential risk of infection (see Table 1).



**NEW CONFIGURATION.** At the Wilmer Eye Institute, waiting area of the Comprehensive Eye Care Clinic (1A) before and (1B) after the pandemic started.

Patients with confirmed COVID-19 and persons under investigation (PUIs) are not seen in our clinic. They are examined in the emergency department, where we have a slit lamp in a negative-pressure room. For those seen in the clinic, exam rooms are cleaned thoroughly between patients.

**Dr. Mehta:** We also have patients complete a questionnaire, and they undergo a thermal scan at the entrance of the hospital before arriving at the clinic. If a patient is from a COVID-19 hot-spot region, he or she is seen in an isolated area, separate from our main clinic. We also take the temperature of staff members twice a day.

Patients deemed to be at low risk for SARS-CoV-2 infection are seen in the clinic for routine procedures such as retinal injections. We review electronic medical records to determine whether we really need to see the patient at that time, and we ask patients to come to the clinic alone, if possible. We encour-

age social distancing in the waiting room; we've removed half the chairs, and there are markings on the chairs to make sure patients are well separated.

We keep hand sanitizer by every slit lamp and apply it every time a patient is seen. The slit-lamp breath shields are cleaned between patients because even though patients are masked, any droplet or respiratory action against the shield could transmit infection.

**Dr. Tuli:** We screen every patient—as well as all faculty and staff—before they come into the clinic. We have someone at the door who gives a questionnaire to patients, and we do a temperature scan. We check for sense of smell with scratch-and-sniff cards because loss of this sense is a sign of COVID-19. We're also considering implementing pulse oximetry because hypoxia is another sign of infection. In general, nonemergency patients are asked to return at a future date.

In the clinic, we have always advised patients and staff to avoid talking at the slit lamp and during injection procedures, and we're continuing to do that. We're performing posterior laser

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ROUNDTABLE HOSTED BY KATHRYN A. COLBY, MD, PHD, WITH ASHLEY BEHRENS, MD, JODHBIR S. MEHTA, MD, PHD, AND SONAL S. TULI, MD.

treatments as usual. However, we're not doing any excimer laser treatments because of the plume generated, so we're avoiding any surface ablation, including phototherapeutic keratectomy (PTK).

**Dr. Behrens:** As a refractive surgeon, I haven't yet had a case requiring PTK during the pandemic, and of course there are no emergency hyperopic or myopic excimer laser treatments.

For patients with glaucoma who require a Humphrey visual field test, we're trying to determine the best way to disinfect the machine between patients. The manufacturer recommends a brief cleansing procedure, but even with masking, the bowl can be contaminated by droplets during the test. I'm concerned that infectious virus could still pose a risk to patients.

**Dr. Colby:** We've been considering regular nasal swabbing of our staff, possibly every two weeks or 10 days, as a means of surveillance. We also discourage talking during the exam—when the ophthalmologist and patient are in close proximity—and we're allotting at least five minutes for cleaning the exam room between patients.

**Dr. Colby:** *How are you providing ophthalmic care to patients who are hospitalized with COVID-19?*

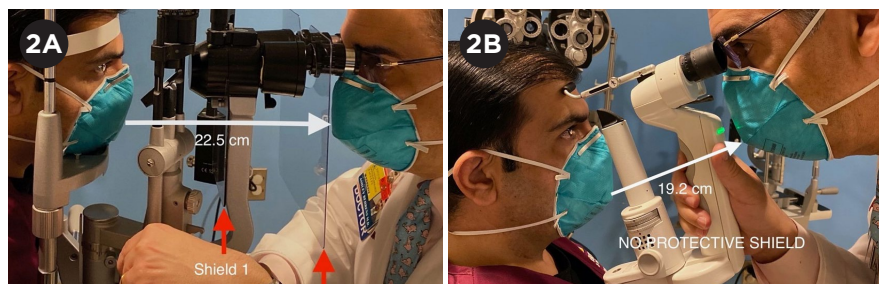
**Dr. Tuli:** For patients given ventilatory assistance who are not conscious, we protect the eyes with lubrication and ensure there's no lagophthalmos. These are standard measures, not specific to COVID-19.

**Dr. Mehta:** In the intensive care unit, we also use standard procedures to protect the ocular surface.

## Personal Protective Equipment

**Dr. Colby:** *Describe the personal protective equipment (PPE) that you're using. Are you triaging PPE according to symptoms?*

**Dr. Mehta:** Patients with COVID-19 are being isolated in the hospital wards. When we see these patients, we wear full PPE, including fit-tested N95 masks. After the experience of severe acute respiratory syndrome (SARS) in Singapore, these measures have become routine for hospital employees. Staff members who cannot physically wear N95 masks must avoid the isolation units.



**AVOID PORTABLE SLIT LAMPS.** A standard slit lamp with double breath shield (2A) is preferable to a portable slit lamp (2B) for reasons of social distancing.

**Dr. Colby:** At our institution, we do annual fit testing for N95 masks to be in compliance, and it has felt like a major undertaking, but now we're glad to have had the fit test.

**Dr. Mehta:** For our clinic patients determined to be at low risk of infection, we are not in full PPE. We don't wear gloves, but we do wear surgical masks while in the exam rooms. The protective gear, including, for example, breath shields on the slit lamp, can be cumbersome for certain procedures, including Goldmann applanation tonometry.

**Dr. Behrens:** Evidence suggests that asymptomatic patients account for nearly 50% of those infected<sup>1</sup> and that almost 50% of transmission can be attributed to asymptomatic or presymptomatic index cases.<sup>2</sup> Therefore, our technicians, examiners, and ophthalmologists have been wearing full PPE to see any patient; this means fit-tested N95 masks, gloves, eye protection, and a plastic visor to shield the face. The slit lamp also is equipped with two breath protectors. I tried wearing goggles, but they interfered with exams at the slit lamp. Instead, I wear my regular glasses. Portable slit lamps should be avoided because they require you to be even closer to the patient (see Fig. 2). When we have any difficulty examining a patient with a standard slit lamp, we use a penlight instead.

**Dr. Tuli:** When we see COVID-19 patients in the hospital for consultations, we wear full PPE, including fit-tested N95 masks, gloves, and gowns. Similarly, we have designated an area of the clinic for PUIs, and we also wear full PPE to examine those individuals.

For patients who do not have symptoms and are at low risk of SARS-CoV-2 infection, we wear eye protection and

surgical masks in the exam rooms. We found low-elevation goggles that work well at the slit lamp, but wearing them for indirect ophthalmoscopy remains a challenge.

Gloves can create a false sense of security. The glove-wearing provider touches the patient and then may touch pens and other items in the room while still wearing the gloves, potentially contaminating those things. For a patient at low risk of infection, it is better to use a cotton-tip applicator or your fingers and then wash your hands.

Some of our providers wear N95 masks for every patient because they're more concerned, but we generally save the N95s for seeing high-risk patients. Until recently, we didn't have a sufficient supply of N95 masks to be worn for outpatient care.

**Dr. Colby:** We set up a room with ultraviolet (UV) light to sterilize our N95 masks, mostly the ones used in the operating room. With UV sterilization, we're able to use the same mask four times; after sterilization, each mask is returned to the original user.

**Dr. Behrens:** Our current supply of N95 masks is sufficient to not require sterilizing them. We use them until they are soiled and then change them. Our staff members are universally masked, with N95s for physicians and techs and at least cloth masks for front office staff. If a patient is not already wearing a mask when he or she reaches the entrance of the Wilmer Eye Institute, we provide one.

## Telemedicine

**Dr. Colby:** *Are you using telemedicine in any way during the pandemic?*

**Dr. Tuli:** We're trying to do as much telehealth as possible to limit exposure.

## Table 1. Wilmer Eye Institute—COVID-19 Entrance Screening

(Updated 5/1/20. At this date, only emergent and urgent patients were seen.)

### PERSON (PATIENT, VISITOR, ESCORT) PRESENTS TO SCREENER

- ☐ Provide mask to any unmasked individual.
- ☐ Ask: "Do you have an appointment today?"

**If YES and if escorted:** "We are asking that your escort does not accompany you to clinic, if you are able to proceed unescorted." (No escort, unless patient needs physical assistance.)

**INFORM:** "We will be asking you a series of questions and checking your temperature before you proceed."

**If NO:** Request reason for requested visit. If urgent/emergent, contact the clinic for permission to add. All other requests should be scheduled through the call center.

#### ☐ CATEGORY 1

- Have you experienced any new unexplained loss of taste or smell? **If YES**, proceed to Section A. **If NO**, go to Category 2.
- Have you had a positive COVID-19 test within the past 14 days? **If YES**, proceed to Section A. **If NO**, go to Category 2.
- Have you been advised to obtain COVID-19 testing and/or are you awaiting results? **If NO**, go to Category 2. **If YES**, "Was the test ordered because of a planned surgery or procedure?"
  - **If YES and otherwise asymptomatic**, proceed to Category 2.
  - **If NO** (not due to upcoming surgery), proceed to Section A.

#### ☐ CATEGORY 2

Ask each symptom question individually: Have you experienced, in the last three days any new:

- Fever
- Cough
- Sore throat
- Shortness of breath
- Muscle aches
- Diarrhea
- Headache

**If YES to TWO or more of these symptoms**, proceed to Section A.

**If YES to only ONE of these symptoms**, proceed to Category 3.

**If NO to ALL symptoms**, proceed to Category 3.

#### ☐ CATEGORY 3

- Have you had exposure to a person confirmed to have COVID-19?
- Have you traveled to New York City or New Jersey in the past 14 days?
- Do you live in a long-term care facility (e.g., nursing home, skilled nursing facility, assisted living, rehab unit)?

**If YES to at least ONE of the Category 3 situations and any ONE symptom from Category 2**, proceed to Section A.

**If YES to ONE or more of the Category 3 questions**, proceed to Section B.

**If NO**, proceed to Section C.

### FOR ALL PATIENTS

- ☐ Proceed to use of scanning thermometer. If patient's temperature is 100.4 or higher:

**If NO symptoms or any Category 3 criteria are present**, proceed to Section B.

**Otherwise**, proceed to Section A.

### SECTION A. RETURN TO VEHICLE PROCESS

- ☐ Obtain contact information using Contact Form, and advise patient to return to their vehicle.
- ☐ Explain to patient that they will be contacted in a few minutes to manage their office visit as their screening has provided some concern for a visit

in our typical clinic setting.

- ☐ Provide appropriate clinic with the Contact Form so they can contact the individual immediately with plan for office visit.

### SECTION B. PROCEED TO ISOLATION ROOM, AND CALL CLINIC

- ☐ Provide a surgical mask to any individual who is wearing homemade mask or face covering.
- ☐ Escort patient to isolation room and call clinic to inform of status and obtain plan for visit.

### SECTION C. PROCEED TO CLINIC

- ☐ **INFORM:** "Please proceed to the clinic. We ask that you continue to wear your mask while in our building."

**SOURCE:** Adapted from the Wilmer Eye Institute screening form dated May 1, 2020. Special thanks to Donna Vierheller, COT, and Michelle J. Campbell, MBA.

This includes phone consultations or video chats, with the patient at home. Some physicians have adopted this more readily than others. We are offering drive-through testing of intraocular pressure (IOP), whereby a technician uses a disposable tip to check IOP. We're also doing hybrid visits—so, for instance, a patient may undergo optical coherence tomography (OCT) in the clinic and return home. The physician would then call the patient later that day and conduct a telehealth visit. Such hybrid visits help us determine whether a patient needs to come back for an injection and assess the stability of a macular degeneration case. We're finding that there is a fair bit that we can do by telehealth.

**Dr. Behrens:** Our glaucoma specialists initially offered drive-through IOP testing, but they stopped because patient response was low. I have done a few telemedicine visits as an anterior-segment ophthalmologist. We use Polycom video conferencing (Poly), which integrates with the Epic system, and it has been difficult to achieve high-quality video for a good examination.

**Dr. Mehta:** The COVID-19 pandemic has caused us to reevaluate the amount of time patients spend in the hospital clinic. Retina and glaucoma specialists in Singapore have transitioned to hybrid virtual clinics, like those Dr. Tuli described. For example, patients have a visual field test or imaging in the office, and the results are viewed by a consultant. Patients are contacted by text message to inform them of the results, upcoming appointments, and prescription information. We may also follow up by video conference to explain the findings and schedule the next appointment. We're finding that these hybrid visits work for about 25% to 30% of our patients; most of them have stable conditions and are presenting for follow-up. An option we're considering is doing the imaging at a satellite diagnostic center.

We've encountered some obstacles with telemedicine. Many of our patients are older and less tech savvy, and we need to make sure they have access to the video conferencing platform. Providing telehealth can be time-intensive,

and it requires more imaging than we'd normally do. Another issue has been ensuring that these extra services will be billable.

**Dr. Behrens:** I've been asking some patients to take photos of the eye with their cell phones, and I have a few telehealth imaging tips. I advise patients to use the back camera with flash enabled (not the selfie camera) to produce higher-resolution images. With this, we've been able to readily detect conditions such as corneal ulcer and even more subtle presentations, like peripheral keratitis. However, with photos, you can miss a lot.

### Precautions With Patients

**Dr. Colby:** *We care for a population that is predominantly older and at risk, and we want to reassure patients that it's safe to come to the clinic for necessary injections or glaucoma care. How are you letting patients know that it's safe to come in for exams, and what are you telling them about using contact lenses and eye-drops during the pandemic?*

**Dr. Tuli:** It's more important than ever to advise patients on good contact lens hygiene, including washing hands before inserting and removing lenses, as well as avoiding touching the eyes while the contacts are in. Disposable lenses should be considered to decrease the risk of contamination associated with reusable lenses. We tell patients to keep using eyedrops and to wash their hands before and after instilling them. This is the advice we've given all along, but we're now emphasizing it more.

We've been informing patients by phone on how we're screening for infection and that we're deep cleaning the entire clinic twice daily, as well as cleaning exam rooms after each patient's visit. It's important to reassure them that the clinic is a safe place to receive ophthalmic care. We're also planning to provide this information in a letter that is mailed to patients.

**Dr. Behrens:** I recommend daily-wear contact lenses over reusable ones, and I emphasize that patients should avoid touching the tips of eyedrop bottles. When possible, I use preservative-free medications.

Basically, our clinics are closed; we're not seeing patients for routine follow-up. We are treating only emergency cases and those that require special care, such as patients who need injections or present with uveitis.

**Dr. Mehta:** I've been recommending that patients avoid wearing contact lenses altogether; I advise wearing glasses for now. My concern is that even with hand washing, patients are likely to contaminate the eye from use of contact lenses. I'm reminding patients to apply eyedrops with clean hands, and we're strongly recommending that they have eyedrops delivered rather than travel to the pharmacy for them.

To help patients feel confident about their safety in the clinic, we show them the strict protective measures we're taking. In the lobby of the hospital, there's a large screen that depicts how we are keeping people from coming to the hospital unnecessarily. Patients see that we are using thermal scanning to check everyone's temperature. We're also sharing this information through text messaging.

When we decide that a nonessential appointment should be delayed to mitigate risk, we explain this reasoning, and we emphasize that the doctor has determined that it's safe to delay the visit. This way, the patient understands that it wasn't simply an administrative decision to delay an appointment.

### Closing Pearls

**Dr. Colby:** *What overarching statements would you like readers to take away from this discussion?*

**Dr. Mehta:** Be aware that conjunctivitis might be an early presenting sign of SARS-CoV-2 infection, even in an otherwise asymptomatic patient (see "Clinical Experience and Scientific Insights," which is posted with this article at [aao.org/eyenet](http://aao.org/eyenet)). Take extra precautions and obtain a thorough and relevant patient history, including whether the sense of smell or taste has been compromised.

I think the practice of ophthalmology, and of medicine in general, will be changed even after we get through this pandemic; it will be a driver for us to implement more video conferencing



and teleophthalmology.

**Dr. Behrens:** Be exceedingly pre-cautious. Wash your hands thoroughly for 20 seconds before and after seeing a patient and use PPE. Until we have evidence from robust controlled studies showing how SARS-CoV-2 affects the eye, we must practice extreme safety measures to prevent spread to physicians, other health care workers, technicians, and other staff members.

**Dr. Tuli:** We don't have definitive evidence about conjunctivitis as a COVID-19 sign or on the likelihood of viral transmission through tears, but practicing strict hand and eye hygiene is always a good idea.

Understandably, our families, staff, and patients are scared and stressed. It's important for us to explain to them that with appropriate precautions, they can reduce their risk of getting this infection, and that the vast majority of people who become infected will recover. We need to reassure our staff and those under our care that even though the COVID-19 world may be different, we're resilient and will get through it.

1 Moriarty LF et al. *MMWR*. 2020;69(12):347-352.

2 He X et al. *Nat Med*. 2020. doi: 10.1038/s41591-020-0869-5.



**Dr. Behrens** is the KKESH/WEI professor of international ophthalmology and chief of the comprehensive eye care division at the Johns Hopkins Wilmer Eye Institute in Baltimore. *Relevant financial disclosures: None.*



**Dr. Colby** is Louis Block Professor and Chair, Department of Ophthalmology and Visual Science at the University of Chicago.

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**Dr. Mehta** is head of the tissue engineering and stem cell group at the Singapore Eye Research Institute and head of the corneal

service and senior consultant in the refractive service of the Singapore National Eye Centre.

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**Dr. Tuli** is professor and chair of ophthalmology at the University of Florida in Gainesville. *Relevant financial disclosures: None.*

For full disclosures, view this article at [aao.org/eyenet](http://aao.org/eyenet).



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