Statement: Doctors of Optometry and COVID-19

Updated March 24, 2020

The American Optometric Association's Health Policy Institute (HPI) is providing information relevant to the eye health and vision care community regarding the novel coronavirus **and COVID-19**[i]. Every doctor of optometry should understand the risks associated with this outbreak to ensure continued ability to care for patients. On Jan. 30, 2020, the World Health Organization (WHO) declared COVID-19 (then known as 2019 nCoV) as a global health emergency. The U.S. Secretary of Health and Human Services (HHS) declared a public health emergency on January 31, 2020, under section 319 of the Public Health Service Act (42 U.S.C. 247d), in response to COVID-19.[ii] [iii]

WHO Director General in a March 18, 2020 briefing reported more than 200,000 cases and 8,000 lives lost worldwide. His focused message was that physical distancing measures are necessary to slow the transmission of the virus to aid the health care system in its response to COVID-19. Adding, "to suppress and control COVID-19 epidemics, countries must isolate, test, treat and trace. If they don't, transmission chains can continue at a low level, then resurge once physical distancing measures are lifted. Don't assume your community won't be affected. Prepare as if it will be. Don't assume you won't be infected. Prepare as if you will be. But there is hope. There are many things all countries can do."[iv] The U.S. Centers for Disease Control and Prevention (CDC) stresses that COVID-19 can result in severe disease, including hospitalization, admission to an intensive care unit, and death, especially among older adults (ages 55 and over). Everyone can take actions, such as social distancing, to help slow the spread of COVID-19 and protect older adults from severe illness.

Important U.S. Update:

According to a March 24, 2020 New York Times data base, 43,499 people across every state, plus Washington, D.C., and three U.S. territories, have tested positive for coronavirus, and at least 537 patients with the virus have died. This represents 6.2 times increase in COVID-19 individual cases and 4.4 times increase in deaths since our March 19, 2020 HPI update, just 5 days ago. In New York State there are over 20,000 total confirmed cases with 12,000 in New York City. A state-wide lockdown took effect March 23, 2020. On March 24, 2020, WHO announced that the U.S. may become the global epicenter of COVID-19 and warned that the virus is still accelerating across Europe and the U.S.

On March 2, 2020, the Food and Drug Administration (FDA) issued an Emergency Use Authorization (EUA) for release of all disposable filtering N95 facepiece respirators from the Strategic National Stockpile to be distributed to HCPs. To our knowledge these have not been distributed and HPI has contacted FDA to

determine that mechanism for distribution with no response. On March 4, 2020, it was reported that US medical workers will need 3.5 billion face masks and that the country only has 1 percent of that number.

With new physical distance measures, necessary social isolation and data confirming a burgeoning strain on hospitals and other health care resources from COVID-19, the CDC on March 17, 2020 offered new COVID-19 guidance that all healthcare facilities and clinicians should prioritize urgent and emergency visits and procedures now and for the coming several weeks. The CDC noted "the following actions can preserve staff, personal protective equipment (PPE), and patient care supplies; ensure staff and patient safety; and expand available hospital capacity during the COVID-19 pandemic:

- Delay all elective ambulatory provider visits
- Reschedule elective and non-urgent admissions
- Delay inpatient and outpatient elective surgical and procedural cases
- Postpone routine dental and eyecare visits

On March 18, the Centers for Medicare & Medicaid Services (CMS) announced (https://www.cms.gov/files/document/31820-cms-adult-elective-surgery-and-procedures-recommendations.pdf) that all elective surgeries, non-essential medical, surgical, and dental procedures be delayed, including cataract surgery, which is essential to conserving critical resources such as ventilators and PPE, as well as limiting exposure of patients and staff to the COVID-19 virus.

Together with CDC guidance on strategies for optimizing the supply of PPE, a way forward for doctors of optometry to care for patients during this critical period of social distancing and the need for everyone to stay at home is now coming into focus. As example, HPI analysis of 2016 Healthcare Cost and Utilization Project (HCUP) data showed that 1 percent of all U.S. visits to emergency departments were for eye-related encounters and that 98.9 percent were treat and release that could be taken care of by doctors of optometry in their offices. The CDC reports a national rate of 45.8 per 100 persons encountering an emergency department in 2016, so eye visits to optometry facilities could divert approximately five people out of 100 away from the emergency department.[v] Additionally, claims data for eye emergency care outside the emergency departments show that approximately 50 percent of eye emergencies are treated in eye doctors' offices presently as opposed to emergency departments. Treating eye emergencies at eye doctors' offices has the combined potential to divert up to 10 patients per 100 away from emergency departments by remaining accountable to emergency care and encouraging hospitals to defer eye care to optometry offices, most especially at this critical time when the U.S. needs to reserve emergency departments for COVID-19.[vi]

On March 17, 2020, a recorded webinar entitled "COVID-19 and Medicare Telehealth Services" discussed non-face-to-face services, including virtual check-in, e-visits, telephone services and telehealth services billed under a 1135 waiver; CMS relaxed rules that doctors of optometry can use to extend their practice to patients virtually. This can assist doctors of optometry in evaluating patients' chronic and acute medical conditions and in triaging the need for urgent or emergency treatment provided in the optometry clinic.

Here are additional updates HPI learned:

1) Facilities/clinics should begin making contingencies for reduced health care workforce as some become ill.

2) Checking fever of health care workers daily is now optional. They should monitor themselves and not come to work if sick.

3) Not all patients have fever at presentation.

4) Sore throat, nasal congestion has been part of the symptomology as is gastroenteritis.

5) More severe symptoms develop in week two of COVID-19 infection.

6) Corticosteroids should be avoided.

7) May use respirators and face masks beyond expiration date.

8) Lymphopenia is very common early in COVID-19 with decreased lymphocytes.

9) Place face mask on patients to limit potential source.

10) All health care workers are at risk especially now that there is community spread.

The COVID-19 situation is rapidly changing. There is still a great deal of unknows about this virus. Expect that CDC guidance will change as the CDC learns more.

"Front-line healthcare personnel in the United States should be prepared to evaluate patients for COVID-19."[vii]

Front-line healthcare personnel will have an increased risk of infection. State and county health and emergency management officials are coordinating efforts across agencies and healthcare providers to ensure preparations for the situation as it evolves. Doctors of optometry are encouraged to monitor and become involved with this process. Strengthening the resilience of the U.S. to COVID-19 through systematic preparation and response is a laudable and necessary goal and one that doctors of optometry with their expertise and training can assist, as outlined by HPI here:

https://www.aoa.org/documents/HPI/Disaster%20Draft%20Brief%20HPI%20FINAL%2010.04.17_lg.pdf

As of February 10, 2020, information had emerged identifying the conjunctiva as an alleged route of exposure. COVID-19 may enter the body through the eyes and then spread to the whole body through the superficial blood vessels within the conjunctiva. All front-line medical staff should pay attention to eye protection. While a properly fitted N95 face mask may protect against the virus, it may not be effective without concurrent eye protection. CDC guidance now states that standard and transmission-based precautions (i.e., contact and airborne precautions with eye protection) should be used for persons with laboratory-confirmed 2019-nCoV infection. This guidance applies to patients being managed in a hospital in an airborne infection isolation room (AIIR) and to patients being cared for in home isolation.

What additional information doctors of optometry need to know:

- Apart from the death rate, the secondary attack rate of transmission of a virus is an important number to monitor. This number (R_0, pronounced R-nought or r-zero) serves as an indicator of how easy the

disease spreads from person-to-person, as indicated by its reproductive number, which represents the average number of people who will catch the disease from a single infected person. An outbreak with a reproductive number of below 1.0 will gradually disappear. As of February 10, 2020, the R_0 of COVID-19 has been reported as high as 4.08.[viii] Preliminary studies had estimated R_0 to be between 1.5 and 3.5. [ix] [x] [xi] Based on these numbers, on average every case of COVID-19 would create three to four new cases.

- Although viral conjunctival infection is usually caused by adenovirus, COVID-19 may cause ocular signs and symptoms, including photophobia, irritation, conjunctival injection and watery discharge. These are predominantly self-limited but may require supportive care. Ocular discharge and tears are a potential source of contamination and the eye is also a route of exposure, so personal protection is required for the patient and care team.

- CDC has created a checklist to highlight key steps for healthcare personnel in preparation for transport and arrival of patients potentially infected with COVID-19.

When evaluating a patient with an infectious virus, doctors of optometry need to have a clear understanding of the proper protocols to prevent the spread of infection. Vigilance and good hygiene—thorough handwashing, using gloves, eye protection, appropriate face mask, disinfecting equipment and other recommendations provided by the CDC—in the office when in contact with bodily fluids, such as tears, can help prevent infection. It is important to proactively reinforce such infection mitigation techniques with doctors and staff, no matter the size of the office setting.[xii]

Be mindful of potential coronavirus activity in the community or region and a doctor in any of the areas currently affected can minimize the risk of exposure by encouraging patients to stay home if they have symptoms of cold, flu or respiratory infections. CDC releases information regarding the number of cases and people under investigation, updated regularly on Mondays, Wednesdays, and Fridays. Doctors of optometry should routinely track the progression in the number of suspected and confirmed cases in their state. WHO recommends that the follow-up of contacts of confirmed cases is 14 days.

- Doctors of optometry should plan for basic contingencies. As examples,

    a. Doctors of optometry can cross-train key staff members so that one person's absence won't derail the practice.

    b. Doctors of optometry can anticipate manufacturing disruptions and add stock to necessary medical office supplies.

- Staff, family members and friends should be watchful of one another's health and welfare and stand prepared to care for the moderately ill if hospitals become overtaxed. CDC recommendations of what to do if you are sick with coronavirus disease 2019 (COVID-19) can be found here.

- Patients with a mild clinical presentation do not initially require hospitalization. However, clinical signs and symptoms may worsen with progression to lower respiratory tract disease in the second week of illness; all patients should be monitored closely.

- Possible risk factors for progressing to severe illness may include, but are not limited to, older age, and underlying chronic medical conditions such as lung disease, cancer, heart failure, cerebrovascular disease, renal disease, liver disease, diabetes, immunocompromising conditions, and pregnancy.

- Interim guidance for clinicians caring for patients with confirmed COVID-19 infection has been issued by the CDC and can be found here. This update includes interim guidance for discontinuation of transmission-based precautions and in home isolation.

COVID-19 is of high concern because it is a novel virus, meaning it has never occurred before in humans. It is important to note that the virus is transmitted person-to-person through either direct contact or an exchange of bodily fluids. A new study published in the New England Journal of Medicine on March 17, 2020 found that viable virus could be detected up to three hours later in the air, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel.

Global concern has escalated due to the rapid spread of the disease internationally including cases now identified and presenting in the U.S. The CDC believes at this time that symptoms of COVID-19 may appear in as few as two days or as long as 14 days, with median estimates of 5-6 days after exposure. Evolving information from the CDC on the outbreak can be found here:

https://www.cdc.gov/coronavirus/2019-ncov/about/index.html

American adults of all ages—not just those in their 70s, 80s and 90s—are being seriously sickened by the coronavirus, according to a report on nearly 2,500 of the first recorded cases in the United States. The report, issued March 18, 2020 by the CDC, found that, as in other countries, the oldest patients had the greatest likelihood of dying and of being hospitalized. But of the 508 patients known to have been hospitalized, 38 percent were notably younger—between 20 and 54. And nearly half of the 121 patients who were admitted to intensive care units were adults under 65, the CDC reported.

Better understanding of the transmissibility and severity of the virus is urgently required to guide other countries on appropriate response measures. The Lancet reports that of the original cohort of 41 COVID-19-infected patients, 49 percent were aged 25–49 years, and 34 percent were aged 50–64 years, and 32 percent were admitted to the ICU because they required high-flow nasal cannula or higher-level oxygen support measures to correct hypoxaemia. Most of the infected patients were men (73 percent); less than half had underlying diseases (32 percent), including diabetes (20 percent), hypertension (15 percent), and cardiovascular disease (15 percent).[xiii]

All health care providers, including doctors of optometry, should be on the lookout for viral symptoms.

Frequently reported signs and symptoms include fever (83-98 percent), cough (46-82 percent), myalgia or fatigue (11-44 percent), and shortness of breath (31 percent) at illness onset. Sore throat has also been reported in some patients early in the clinical course. Less commonly reported symptoms include sputum production, headache, hemoptysis, and diarrhea. Some patients have experienced gastrointestinal symptoms such as diarrhea and nausea prior to developing fever and lower respiratory tract signs and symptoms. The fever course among patients with COVID-19 infection is not fully understood; it may be prolonged and intermittent.

For any patient meeting criteria for evaluation for COVID-19, clinicians are encouraged to obtain a detailed travel history to establish a medical risk profile and to contact and collaborate with their state or local health department. Guidance for health care professionals can be found here:

https://www.cdc.gov/coronavirus/2019-nCoV/hcp/clinical-criteria.html

The CDC 2019 novel coronavirus test is intended for use with upper and lower respiratory specimens collected from people who meet CDC criteria for 2019-nCoV testing. The test uses a technology that can provide results in four hours from initial sample processing to result.

Information on specimen collection, handling, and storage is available at: Real-Time RT-PCR Panel for Detection 2019-Novel Coronavirus.

In addition, the WHO has advice on how individuals can protect themselves and those around them from contracting the virus. Information can be found here:

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public

As discussed above, this information is evolving as public health organizations track and learn more about the spreading COVID-19 coronavirus. It is important to monitor for changes in information from CDC and WHO to best protect against infection.

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[i] On February 11,2020 the WHO renamed 2019-nCoV to COVID-19.
[ii] https://www.whitehouse.gov/presidential-actions/proclamation-declaring-national-emergency-concerning-novel-coronavirus-disease-covid-19-outbreak/
[iii] https://www.who.int/news-room/detail/30-01-2020-statement-on-the-second-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-outbreak-of-novel-coronavirus-(2019-ncov)
[iv] https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---18-march-2020
[v] https://www.aoa.org/documents/HPI/HCUP%20HPI%20December_2019.pdf
[vi] Am. J. Ind. Med. 49:45–53, 2006. © 2005 Wiley-Liss, Inc.
[vii] https://www.cdc.gov/coronavirus/2019-ncov/summary.html
[viii] Estimating the effective reproduction number of the 2019-nCoV in China - Zhidong Cao et al., Jan. 29, 2020
[ix] Novel coronavirus 2019-nCoV: early estimation of epidemiological parameters and epidemic prediction - Jonathan M. Read et al, Jan. 23,2020.
[x] Early Transmissibility Assessment of a Novel Coronavirus in Wuhan, China - Maimuna Majumder and Kenneth D. Mandl, Harvard University - Computational Health Informatics Program - Posted: 24 Jan 2020 Last revised: 27 Jan 2020
[xi] Report 3: Transmissibility of 2019-nCoV - 25 January 2020 - Imperial College London
[xii] https://www.cdc.gov/coronavirus/2019-ncov/hcp/infection-control.html
[xiii] https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext