



Statement: Doctors of Optometry and COVID-19

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 **COVID-19**ⁱ, previously referred to as "2019-nCoV" or the "Wuhan coronavirus." Every doctor of optometry should understand the risks associated with this outbreak to ensure continued ability to care for our patients. On Jan. 30, 2020, the World Health Organization (WHO) declared COVID-19 (then known as 2019 nCoV) as a global health emergency, acknowledging that the disease now represents a risk beyond China, where it emerged in December 2019.ⁱⁱ

Important Update:

With growing community spread in the U.S. the CDC has announced that they are now moving into a "mitigation phase" of COVID-19 response. According to a New York Times data base at least 545 people have been treated for coronavirus in 34 states and Washington, D.C., and at least 22 patients with the virus have died as of March 9, 2020.

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. This included waived expiration dates and other manufacturer requirements.ⁱⁱⁱ

On March 5, 2020 HPI attended a CDC webinar to learn important new updates on what clinicians need to know to prepare for COVID-19. HPI learned that expansion of testing will be accomplished through outside industry under another FDA EUA. Quest will be receiving tests ordered by doctors beginning Monday March 9, 2020 with labs set on the U.S. West Coast. Other commercial labs will soon follow. This means clinicians will no longer have to rely on public health labs. The CDC states that community spread should inform testing decisions.

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 unknowns about this virus. Expect that CDC guidance's will change as CDC learns more.

WHO places the risk of COVID-19 on a "Global Level" as "Very High."

On March 2, 2020 WHO reports that more than 88,900 people have been confirmed sickened and 3,043 have died of COVID-19. These global numbers represent a death rate of 3.4 percent. This includes a growing number of cases outside China, now consisting of 8,756 confirmed cases in 68 countries.^{iv}

As of February 23, 2020, the U.S. Centers for Disease Control and Prevention (CDC) reports that the potential public health threat posed by COVID-19 is high, both globally and to the United States.^v Outbreaks have now occurred in South Korea, Italy and Iran.

CDC notes that widespread transmission of COVID-19 in the United States would translate into large numbers of people needing medical care at the same time. Schools, childcare centers, workplaces, and other places for mass gatherings may experience more absenteeism. Public health and healthcare systems may become overloaded, with elevated rates of hospitalizations and deaths. Other critical infrastructure, such as law enforcement, emergency medical services, and transportation industry may also be affected.^{vi}

"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 encourage to monitor and become involved with this process.

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.

As of March 2, 2020, CDC reports that there are 12 travel related and four person-to-person spread confirmed cases in the United States. COVID-19 confirmed cases among "persons repatriated to the United States" include three from Wuhan, China and 45 from the Diamond Princess cruise ship.

On February 11, 2020 the AOA Health Policy Institute attended updates by representatives of the White House, Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH). NIH

expressed caution that death rates might be overestimated, due to the possibility that people infected with the virus but experiencing only mild symptoms might not be reported and measured. The death rate for seasonal influenza is 0.1 percent while the global death rate for the catastrophic 1918 Spanish flu was 3-6 percent. The HPI also learned:

- CDC is in planning stage for a pandemic. These plans if implemented would include “social distancing.” Although children appear less susceptible in China, they may only have less severe disease symptoms and still have the disease. Schools may have to close, and individuals may have to prepare for tele-learning, tele-work and tele-socializing with decreased mass gatherings (e.g. conferences, concerts, etc.).
- Personal Protection Equipment (PPE) (e.g. face masks) should be reserved now for health care providers and for individuals sickened.
- Individuals incoming to U.S. facilities deemed at risk are being quarantined in a way that makes a 14-day stay protective to the public health.
- There are currently no U.S. drug shortages for drugs being repurposed for COVID-19 treatments. On February 20, 2020 CDC reports working closely with health care systems across the country to reinforce infection control principles and plans for surges of people seeking and requiring care. “We’re collaborating with supply chain partners to understand what medical supplies are needed and available.”

Preparation for COVID-19 should include government collaboration with professional organizations, hospitals and manufacturers.

What 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.
- The following [checklist](#) highlights key steps for healthcare personnel in preparation for transport and arrival of patients potentially infected with COVID-19.

When dealing with 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 2019 novel coronavirus (2019-nCoV) 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. Therefore, the oral or injectable vaccine (flu shot) individuals receive each year as part of a plan of protection from influenza (the flu) will not be protective against COVID-19. It is important to note that the virus is transmitted person-to-person through either direct contact or an exchange of bodily fluids.

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>

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, 2019-nCoV-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.

ⁱ On February 11,2020 the WHO renamed 2019-nCoV to COVID-19.

ⁱⁱ [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-\(2019-ncov\)](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))

ⁱⁱⁱ <https://www.fda.gov/media/135763/download>

^{iv} https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200223-sitrep-34-covid-19.pdf?sfvrsn=44ff8fd3_2

^v <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>

^{vi} <https://www.cdc.gov/coronavirus/2019-ncov/summary.html>

^{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](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30183-5/fulltext)