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# Corona Virus: Global Pandemic Causing World-Wide Shutdown

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**W**hat do we know about this virus? What do physicians and other clinicians need to do? Where can one obtain the most reliable advice?

Human coronaviruses constitute a large family of viruses that usually cause mild to moderate upper respiratory illnesses in people such as the common cold.<sup>1</sup> Initial characterization of the coronavirus occurred in the 1960's when Tyrell and Bynoe described passage of a virus named B814 at the time, as a group of viruses causing a large proportion of respiratory tract infections in humans.<sup>2</sup> Coronavirus infections have since been described in multiple animal species as well, including bats, camels, cattle, cats, chicken, dogs, pigs, rabbits, rats and turkeys. Bats account for the largest group of animal reservoirs.<sup>3</sup>

There are many, perhaps even hundreds of coronaviruses circulating in animals with what is occasional spread to humans and termed – spill over events, that then cause more serious illness in humans with worsened outcomes yielding significant morbidity and high mortality rates.<sup>4</sup> Coronaviruses are medium sized positive stranded RNA viruses that are named for the crown-like characteristic structures seen in electron micrographs. The characteristic spikes are formed by heavily glycosylated S protein. Viral replication develops in the cytoplasm of infected cells budding into cytoplasmic vesicles from the endoplasmic reticulum resulting in cellular destruction and death.<sup>5</sup>

While many different coronaviruses exist, seven types are known to cause disease in humans.<sup>6</sup> Four of these viruses 229E, OC43, NL63 and KHU have been associated with mild disease symptoms. Three of the viruses have been associated with causation of more severe illnesses and worse outcomes in humans. The first of these to appear was named Severe Acute Respiratory Syndrome (SARS) and was first reported in Asia in February 2003, although retrospectively it was present in 2002.<sup>7</sup> It subsequently disappeared in 2004. This was followed by Middle East Respiratory Syndrome (MERS) which was first noted in Saudi Arabia in 2012 and is currently still found in camels.<sup>8</sup> The third being COVID-19 and is

caused by the SARS-COV-2 that was first described in Wuhan China in December, 2019.<sup>9</sup>

Among older adults, coronaviruses have been associated with acute exacerbations of chronic obstructive pulmonary disease and acute asthma events in both adults and children as well as community acquired pneumonia. Coronaviruses have also been associated with other diseases including enteric manifestations causing abdominal pain, diarrhea, nausea, and vomiting as well as other symptoms such as chills, fever, headache and myalgia. Other rare conditions including acute and chronic neurologic disease have been reported.<sup>10</sup>

As there is currently no available specific pharmacologic therapeutic or vaccine, supportive care is the mainstay of treatment. Preventive strategies are focused on infection control procedures such as washing hands, careful disposal of material containing nasal and oral secretions, and the use of disinfectants to clean frequently used surfaces. Strategies to prevent infection with the new coronavirus from World Health Organization (WHO) and the Center for Disease Control (CDC) recommend following these precautions for avoiding COVID-19:

- Avoid large events and mass gatherings.
- Avoid close contact (about 6 feet) with anyone who is sick or has symptoms.
- Keep distance between yourself and others if COVID-19 is spreading in your community, especially if you have a higher risk of serious illness.
- Wash your hands often with soap and water for at least 20 seconds, or use an alcohol-based hand sanitizer that contains at least 60% alcohol.
- Cover your mouth and nose with your elbow or a tissue when you cough or sneeze. Throw away the used tissue.

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- Avoid touching your eyes, nose and mouth if your hands aren't clean.
- Avoid sharing dishes, glasses, bedding and other household items if you're sick.
- Clean and disinfect surfaces you often touch on a daily basis.
- Stay home from work, school and public areas if you're sick, unless you're going to get medical care. Avoid taking public transportation if you're sick.

CDC doesn't recommend that healthy people wear a face mask to protect themselves from respiratory illnesses, including COVID-19.<sup>11</sup>

The CDC has produced multiple information and useful guidelines to facilitate care and prevention of corona viruses including:

- Symptoms
- Older Adults and Medical Conditions
- Prepare Your Family
- Resources for the Community
- Checklist for Older Persons
- People Who Are Higher Risk
- Interim Guidance for Businesses and Employers
- Keeping Workplaces, Homes, Schools or Commercial Establishments Safe
- Information for Health Care Professionals
- Information for Healthcare Facilities
- Information for Health Departments
- Information for Laboratories
- Continuous Email Updates.<sup>11</sup>

It is so important that we in the National Medical Association maintain ongoing updates and information for our own and family care, our patients, our communities and our nation.

Get the latest public health information from CDC: <https://www.coronavirus.gov>.

Get the latest research information from NIH: <https://www.nih.gov/coronavirus>.

The Publisher of Journal of the National Medical Association, Elsevier, has compiled an extensive list of publications that may also be useful to physicians and other clinicians and can be found at: Elsevier's Novel Coronavirus Information Center.

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