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Contents lists available at ScienceDirect

## The Journal of Arthroplasty

journal homepage: [www.arthroplastyjournal.org](http://www.arthroplastyjournal.org)

## Education

## Educating Surgeons to Educate Patients About the COVID-19 Pandemic



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## ARTICLE INFO

## Article history:

Received 9 April 2020

Received in revised form

15 April 2020

Accepted 15 April 2020

Available online 18 April 2020

## Keywords:

COVID-19

patient education

surgeon education

pandemic

hip and knee arthroplasty

## ABSTRACT

The spring of 2020 has been a trying time for the global medical community as it has faced the latest pandemic, COVID-19. This contagious and lethal virus has impacted patients and health care workers alike. Elective surgeries have been suspended, and the very core of our health care system is being strained. The following brief communication reviews pertinent details about the virus, delaying elective surgeries, and what patients can do during this time. The goal is to disseminate factual data that surgeons can then use to educate their patients.

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Nearly 1.3 million people have been diagnosed with coronavirus disease–2019 as of the writing of this article (COVID-19) [1]. In comparison, the deadliest pandemic on record is the 1918 influenza pandemic (“Spanish Flu”) with over 500 million people (33% of the world’s population at the time) afflicted and an estimated 50 million deaths worldwide [2]. At first thought, orthopedic surgeons would not be overly involved in the management of a highly contagious lung disease. But with the rapid spread of virus in only weeks and the potential for mortality between 5% and 20%, all health care providers will need to take an active role [3].

This article is published as part of a supplement supported by the American Association of Hip and Knee Surgeons and by an educational grant from Aerobiotix.

One or more of the authors of this paper have disclosed potential or pertinent conflicts of interest, which may include receipt of payment, either direct or indirect, institutional support, or association with an entity in the biomedical field which may be perceived to have potential conflict of interest with this work. For full disclosure statements refer to <https://doi.org/10.1016/j.arth.2020.04.037>.

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<https://doi.org/10.1016/j.arth.2020.04.037>

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This pandemic has already strained our medical resources and affected all sectors of health care, especially elective surgical procedures. At some point, many orthopedic surgeons will be called on to provide their expertise and compassionate care to COVID-19 patients with fractures, infections, or other emergencies. In various ‘hot spots’ around the country, orthopedic surgeons are being redeployed to the front lines to assist medical teams in the emergency department, hospital floors, and intensive care units. It is an all-hands-on-deck effort to save lives. During this time of need, orthopedic providers can help limit the spread of the illness by educating patients and by following recommended behaviors, such as hand hygiene and avoiding close social contact. This allows us to provide leadership to our patients, staff, families, and communities to make a direct impact in minimizing transmission.

## What is COVID-19?

Despite a tremendous amount of media coverage, a large portion of our patient population likely does not understand COVID-19. This disease, caused by the SARS-CoV-2 virus, is believed

to have emerged from a live animal market in Wuhan, China, and was transmitted to humans through close contact; although, there are competing theories on the viral origin. The virus is part of a larger family of viruses called coronaviruses that are single-stranded ribonucleic acid viruses [4]. Coronaviruses are not new and classically have caused mild respiratory or gastrointestinal symptoms in humans [5]. If the name SARS sounds familiar, it is because there have been two strains related to outbreaks this century to include severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).

### How Does COVID-19 Affect Patients?

This viral illness spreads from person to person, primarily through respiratory droplets. This mode of transmission is more common when people are in close proximity (within 6 feet) of one another. It can also be contracted by touching contaminated surfaces (also known as fomites) and then introducing them to the respiratory tract through the mucous membranes of the eyes, nose, or mouth [6].

With other illnesses, quarantining the sick or symptomatic patients can help slow the spread. The challenge with COVID-19 is that people can harbor the virus and display mild symptoms or even be asymptomatic, making it easy to spread the illness to others. Most patients demonstrate symptoms within 5 to 12 days of contracting the virus [7]. Patients can initially present with fever (>100°F), cough, shortness of breath, headache, and fatigue [8]. Some cases have presented with diarrhea and anosmia. More serious cases present with severe pneumonia and/or respiratory failure, which can lead to death. Confirmation testing is of importance to help determine the incidence of the disease and to direct quarantine measures.

Currently, there are various options being used and investigated to detect the virus and/or antibodies to the virus to determine if someone has been exposed. Most importantly, these resources are limited, and at this time, it is not recommended that all patients and health care workers be tested. It is strongly recommended that an individual with the above described symptoms should self-quarantine and get tested only if recommended by a medical professional, instead of presenting to a testing facility or further straining the resources of local emergency departments.

### What Can Patients Do to Avoid COVID-19?

Given the ease of transmission and potential for severe symptoms including death, all efforts to prevent the spread of the disease are imperative. Individuals older than 65 years with underlying medical conditions that are not well controlled including obesity, chronic obstructive pulmonary disease (COPD), asthma, diabetes, chronic kidney disease, serious heart conditions, or a weakened immune system are at higher risk for severe illness [9]. Patients can help by avoiding contact with people who are ill. This has led many health care facilities (eg, hospitals, nursing homes, skilled nursing facilities) to ban all visitors. Stress can ensue when friends and family members are hospitalized, but it is important to follow these guidelines. Many states and locales have instituted social distancing policies with the goal of decreasing viral transmission; therefore, it is important for the public to follow current regulations to avoid congregating and gathering in groups.

In addition, patients should remain vigilant about frequent hand washing. It is important to educate patients about proper hand washing techniques and to advise them to avoid touching their face without first washing their hands. Individuals should always cover their mouth or nose when coughing or sneezing and disinfecting any contaminated areas. Recently, the Centers for Disease Control has recommended wearing cloth face coverings over the nose and

mouth while in public settings where social distancing would be difficult (grocery store or pharmacy) to limit viral transmission [10].

If a patient thinks they may have been exposed to the virus, they should contact their primary care physician. If they are not symptomatic, simply quarantining for 14 days may suffice. If they are having mild symptoms (similar to a common cold), their doctor may order a test to confirm the diagnosis. If they are having severe symptoms such as difficulty breathing, they may be referred to an emergency room for diagnosis, evaluation, and treatment.

### Treatment

There is no specific treatment regimen for patients with COVID-19. Antibiotics are highly effective in treating bacterial illnesses, but they are not useful for viral illnesses [11]. There are multiple theorized medical treatments such as hydroxychloroquine, azithromycin, or corticosteroids, but none have been proven to provide clinical benefit [11–13]. Antiviral medications exist, and clinical trials are ongoing to determine the efficacy of these medications. Treatment at this time is mostly supportive with isolation and oxygen therapy when needed. Patients who have difficulty breathing may require intubation and treatment for acute respiratory distress syndrome. At this point, a vaccine is not available for the general public, but clinical trials of various vaccines are currently underway, which is a top priority to prevent future epidemics.

### Impact on Elective Hip and Knee Procedures

Many patients undergoing elective orthopedic procedures, especially hip and knee arthroplasty, suffer from chronic pain and dysfunction. At this time, the United States Surgeon General has recommended suspending elective procedures (including hip and knee arthroplasties) as they are not life-saving procedures and to preserve limited resources. Most hospitals across the nation have followed suit. In addition, the President of the United States has declared a national state of emergency for the coronavirus, and he has suggested each state consider strict quarantine regulations throughout the country.

This has impacted all Americans and has led to the cancellation of many elective hip and knee surgeries. Many urgent and emergent cases are still being performed under the guidance and protocols of individual hospitals. As a rule, if delaying the surgery (such as prosthetic joint infections, periprosthetic fractures/impending fracture, and/or ruptured tendons/ligaments) more than 4 to 6 weeks will cause more harm than good, it is likely in the patient's best interest to move forward despite the current state of the health care system. However, the risks of being infected with COVID-19 in the perioperative setting must be discussed with the patient, as emerging data suggest a worse clinical outcome if this occurs in the postoperative setting. Furthermore, disposition to a higher risk facility such as a nursing home or rehabilitation facility may place patients in an unsafe environment. In these urgent and emergent cases, preoperative planning to determine where the patient will recover after surgery is imperative.

During these trying times, it is important to remember that delaying elective surgery is for the greater good of patients as most hospital resources are necessary to prevent and treat the spread of COVID-19 virus. Undergoing a successful hip or knee arthroplasty requires a dedicated team of nurses, therapists, doctors, and other providers. By allowing these medical providers to work in other sectors of health care or simply stay home and promote social distancing, we are fighting this disease as a global team. There is also the unnecessary risk that an asymptomatic patient is brought in for elective surgery and then infects members of the surgical

team or other patients. It is paramount that individuals adhere to government recommendations during this time.

Orthopedic surgeons and their teams remain conscious of our patients' concerns. The American Association of Hip and Knee Surgeons recommends continued nonsurgical treatment for arthritis, which includes acetaminophen use, bracing, joint injections, stretching, and a low-impact exercise routine. Avoiding painful activities and applying heat or ice to the affected joint will also help alleviate symptoms. Despite no scientific evidence, the Food and Drug Administration is currently recommending to avoid the use of nonsteroidal anti-inflammatory agents as it may aggravate COVID-19 symptoms [14]. Therefore, it may be prudent to choose alternative options if your patients have been exposed to the virus and are trying to manage the pain from their symptomatic arthritis.

In this time of uncertainty, it is important that we maintain communication with patients through telehealth to help them manage the physical, psychological, spiritual, or economic impacts of this pandemic. Telehealth visits are a good way to keep track of our patients while maintaining social distancing. Patients and physicians alike should practice patience as many people have been impacted by the disruption in their care. Our system is resilient, and elective surgeries will resume when safe and resources are available. During this pandemic, recall the Hippocratic Oath and practice in the best interest of the patient by first doing no harm.

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