



# HOSPITAL INFECTION CONTROL & PREVENTION

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## IPs Face Threat of COVID-19, Flu Season Convergence

*Universal public masking could lower deaths in viral storm*

By Gary Evans, Medical Writer

Infection preventionists (IPs) are preparing for an unknown but widely predicted possibility this fall and winter: a large second wave of SARS-CoV-2 (COVID-19) hitting hospitals amid the 2020-2021 influenza season.

“It’s sort of a nightmare scenario if and when the two collide and converge on us at the same time,” says **Ann Marie Pettis, RN, BSN, CIC, FAPIC**, president-elect of the Association for Professionals in Infection Control and Epidemiology.

“It makes sense that we would see both at the same time, and that could easily start to overwhelm facilities, which of course was the whole idea of flattening the curve in the first place. We are hoping for the best and preparing for the worst.”

Although the outcome remains unknown as the global pandemic continues, leading epidemiologists say

this respiratory viral confluence is a distinct possibility.

“I am deeply worried that, as we get into the fall and winter, we are going to be hit by a very large second wave that is going to coincide with influenza season,” said **Ashish Jha, MD, MPH**, director of the Harvard Global Health Institute in Boston, in a recent webinar. “That is going to substantially strain our healthcare system, eventually set in, and kill a lot of people.”

Outspoken about the need for more testing since the pandemic began, Jha was skeptical about Department of Health and Human Services (HHS) projections of more COVID-19 tests during flu season.

“Forty to 50 million tests a month sounds a like a big number, but that is about 1.5 million tests a day. While that would be a dramatic improvement over where we are right now, it is hard for me to see [that being sufficient] in

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the middle of an influenza season and what we expect will be an increasing number of [COVID-19] cases.”

However, Jha is hopeful that a shift to new tests will bolster the current, widespread use of reverse transcription polymerase chain reaction (RT-PCR).

“I don't believe that our primary testing strategy in the fall will be RT-PCR,” he said. “I think it will be an important component of it, but I suspect and hope that antigen testing, maybe next-generation sequencing, and some of the [genomic] technologies that are coming out will be available and represent the bulk of the testing. Because I think reagents and other supply chain issues are going to become a limiting factor once you get above about a million tests a day for RT-PCR.”

The interaction between flu and novel coronavirus in the Southern Hemisphere may foretell what the United States will face this fall and winter, he said.

## Flu Vaccination Critical

“One of the main messages IPs need to get out there is the importance of flu vaccination,” says Pettis, director of infection prevention at the University of Rochester, NY. “The symptoms can present pretty similarly with the two diseases, so it could be difficult to sort out. But we have learned a lot of lessons dealing with this pandemic — we have seen a lot of positives. I've been doing this a long time and I have never seen such good teamwork and camaraderie among healthcare providers and staff.”

Although the hospital does not have a mandatory flu shot policy,

Pettis and colleagues will emphasize boosting a voluntary vaccination rate that is already in the high 90th percentile.

“I think healthcare workers have gotten the message and are doing very good with that, but there is still not as much public uptake as we are going to need,” she says. “We are going to be advocating for public messaging and public service announcements for health departments. We don't have a treatment or vaccination for COVID yet, but the things that we can do are flu vaccination and emphasizing the basics of infection prevention, which IPs have been doing on the front lines throughout this.”

**William Schaffner, MD**, one of the nation's leading vaccine proponents, says the message of a “double-barrel” viral season will be emphasized in public messaging that probably will begin in late summer. That includes the Centers for Disease Control and Prevention (CDC) and the annual flu press conference Schaffner leads at the National Foundation for Infectious Diseases in Washington, DC.

“With flu and COVID — not to mention RSV (respiratory syncytial virus) and all the other viruses — we fear a great surge of patients coming into the healthcare system,” says Schaffner, professor of preventive medicine at Vanderbilt University in Nashville. “At the moment, flu vaccine is the best intervention we have — not only to provide individual protection, but to mitigate the impact and very substantial demand for medical care.”

As the novel coronavirus began to emerge globally, more flu testing was done at U.S. hospitals to make sure COVID-19 was not missed,

says **Monica Gandhi**, MD, MPH, an infectious disease physician at the University of California San Francisco.

“A good thing about this last flu season is that we have done more flu testing than ever before,” she says. “We were testing for both SARS CoV-2 and influenza, so we know the strains out there. We should be able to create a really good flu vaccine this year.”

For the 2019-2020 flu season, the CDC has released preliminary estimates of a range of 410,000 to 740,000 hospitalizations and 24,000 to 62,000 deaths.<sup>1</sup>

“We just came off a horrific flu season just as COVID was ramping up,” Pettis says. “We were already seeing patients in corridors and so forth, and that was before we really hit our stride with the pandemic. It could be a rocky ride.”

## Vigilance

In that regard, triage tents are being left up at the hospital, an outward sign of vigilance, even though the novel coronavirus has declined from its peak in the area.

“We are still seeing it in the community, but in the ICUs, what we are seeing now is a surge of folks that were afraid to come in for care [during COVID-19],” she says. “We are seeing a surge of things that we normally deal with. But we are still in emergency command mode as we speak, and my sense is that will continue.”

In the pause in the viral surge, preparations for the next wave continue. “IPs are still constantly educating about appropriate donning and doffing of PPE (personal protective equipment) and that will continue,” she says. “We are still auditing and working with them to

make sure they remember, [because of] the fatigue, as you can imagine, that they have in wearing all the face shields and masks. So, I do worry about that. It is something, as IPs, we must constantly assess.”

The ebb and flow of testing materials, PPE, and other supplies has been a “constant dance,” she says. “As recently as last week in our area, we had issues with our reagents. It’s been a day-to-day fight.”

Pettis and colleagues are ramping up antibody testing for SARS-CoV-2 and will offer that to healthcare workers who want to be tested. “We are still doing the PCR testing for actual infection.”

Rapid flu tests will be used when the season hits because testing before influenza is circulating in the community could lead to false positives. “We do a rapid flu test, but until flu is really prevalent in your community you can have false results on the rapid test. It is a good tool in terms of triaging, but it is certainly not foolproof.”

All admitted patients are being tested for COVID-19, and because of the possibility of asymptomatic transmission, healthcare workers must wear a mask and eye protection throughout their shift. Patients with confirmed coronavirus also must don a mask when healthcare care workers come into their rooms. Pettis, who worked in Toronto during the SARS outbreak of 2003, said universal public masking may become common even after the pandemic ends.

“I think many of us in healthcare have sort of pooh-poohed the idea of using masks in public as source control,” she says. “I think that is going to become a new normal, and moving forward, we are probably going to be emphasizing that more as an effective means of source control.

I won’t be surprised even after [COVID-19] if we will see more and more experts recommending public masking for source control during increased incidence of flu.”

## Universal Public Masking

Emerging data show that widespread public masking could tamp down infections and particularly lower mortality, Gandhi says.

“The CDC recommended universal masking April 3, and many cities have opened and followed suit,” she says. “I think it is going to save us from a second wave. I am profoundly hopeful of that when I look at other countries. The most effective measure, as they open up, to prevent resurgence is universal masking.”

Gandhi cites a study of a coronavirus outbreak on a cruise ship where all passengers were issued surgical masks.<sup>2</sup> It was found that 81% of those testing positive for COVID-19 remained asymptomatic. In a paper in press, Gandhi and colleagues propose an “inoculum” theory hypothesizing that masks lower the viral dose emitted and received in a setting of a universal masking.<sup>3</sup> It is well-established that a mask acts as source control, protecting others from the wearer.

“But there is a second benefit that has received less attention,” Gandhi and co-authors note.

“Exposure to a lower inoculum or dose of any virus (whether respiratory, gastrointestinal, or sexually transmitted) can make subsequent illness far less likely to be severe. Increasing rates of asymptomatic and mild infection with COVID-19 seen over time, in the setting of masking, supports this theory.”

In Asian countries where public mask wearing is a cultural norm, lower rates of COVID-19 mortality are being documented, the authors emphasize.

“While there is some correlation between universal masking and number of COVID-19 cases, there is a near-perfect correlation between public masking and suppression of COVID-related death rates,” they conclude. “Case fatality from COVID-19 is universally low in regions with universal masking.”

There has been confused messaging and political divisiveness on this issue, with the initial rationale that mask wearing is to protect others. Gandhi argues that in a public setting, surgical masks may afford the wearer some protection by lowering the viral inoculum inhaled.

“The beginning message was that it protects others, but in a society that has not exactly been altruistic — especially in the current climate — that has not been the most effective way to convince people to wear masks,” she says. “The message needs to be that masks protect both — it protects others and it protects you as well. It makes sense

that it would protect you. You can’t contract it directly through your skin — you get it into your body through your mouth or nose. Wearing a mask also protects you from touching your mouth and nose.”

Mask-wearing in public is not a cultural norm in the United States, she concedes, but notes that neither is mass isolation of people in their homes.

“We have figured out a lot about this virus in the last few months,” she says. “Before it was ‘radioactive’ — can you touch a surface and get it? We [know] that it is shed from the nose and mouth. That makes it so simple in a way — all you have to do is cover the nose and mouth.”

There could be some benefit if any resulting infection is mild or asymptomatic, particularly if it is found that such cases develop immunity and thus increase protection of the herd.

“As the economy opens up, universal masking may not prevent exposure but potentially lead to only mild disease,” Gandhi and colleagues state. “One model found that, if 80% of the population wears a moderately effective mask,

nearly half of the projected deaths over the next two months could be prevented.<sup>4</sup> That means less illness, fewer deaths, and a safer reopening of society.” ■

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## Mysterious Syndrome Strikes Children with COVID-19

*Post-COVID-19 condition may be an inflammatory immune response*

**A**lthough the pandemic of SARS-CoV-2 (COVID-19) has been relatively benign in children compared to adults, there is growing concern about an emerging syndrome that causes severe, sometimes fatal, outcomes in pediatric patients.

The Centers for Disease Control and Prevention (CDC) has

named this condition multisystem inflammatory syndrome in children (MIS-C).

“On April 26, 2020, clinicians in the United Kingdom recognized increased reports of previously healthy children presenting with a severe inflammatory syndrome with Kawasaki disease-like features,” the CDC reported.<sup>1</sup> “The cases

occurred in children testing positive for current or recent infection by SARS-CoV-2 ... based on reverse-transcriptase polymerase chain reaction (RT-PCR) or serologic assay, or who had an epidemiologic link to a COVID-19 case.”

Patients presented with a persistent fever and a variety of symptoms, including hypotension,

multiorgan involvement, and elevated inflammatory markers. Of the eight cases in the United Kingdom, 75% of the patients were of Afro-Caribbean descent and one patient died.

“In early May 2020, the New York City Department of Health and Mental Hygiene received reports of children with multisystem inflammatory syndrome,” the CDC reported. “As of May 12, 2020, the New York State Department of Health identified 102 patients with similar presentations, many of whom tested positive for SARS-CoV-2 infection by RT-PCR or serologic assay. New York State and New York City continue to receive additional reports of suspected cases.”

The CDC did not report in deaths among the U.S. cases and said it is unclear whether the syndrome also could strike adults. The CDC issued a case definition and urged reporting of any cases. The CDC case definition for MIS-C is summarized as:

- an individual aged < 21 years presenting with fever, laboratory evidence of inflammation, and evidence of clinically severe illness requiring hospitalization, with multisystem (> 2) organ involvement (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic, or neurological); AND
- no alternative plausible diagnoses; AND
- positive for current or recent SARS-CoV-2 infection by RT-PCR, serology, or antigen test; or COVID-19 exposure within the four weeks prior to the onset of symptoms.

The CDC recommends that “healthcare providers report any patient who meets the case definition to local, state, and territorial health departments to enhance knowledge

of risk factors, pathogenesis, clinical course, and treatment of this syndrome.”

## ‘Most Likely an Immune Response’

Some insight comes from **Samuel Dominguez**, MD, PhD, an infectious disease physician at Colorado Children’s Hospital in Aurora, who has been treating children with the syndrome.

“Based on the epidemiology, these kids are appearing after about four weeks of the peak of COVID-19 cases overall in the areas where they are seeing this,” he says. “What we are seeing most likely is an immune reaction or some sort of post-infectious inflammatory response to the virus. The vast majority are presenting with a pretty severe gastrointestinal complaints, severe abdominal pain, some with vomiting and diarrhea.”

Some of children are in shock when they are brought in and must be admitted to an ICU for blood pressure support, Dominguez says.

“All of these kids have multiple days of high fever and evidence of pretty higher inflammation in the body,” Dominguez says. “Some of them are presenting very similar to Kawasaki disease, meaning conjunctivitis, rhinitis, and rash.”

All of the children with the syndrome at Children’s Hospital have survived, but there have been deaths caused by MIS-C reported in the United States and Europe, he says. The CDC’s call for case reports should provide some much-needed data on the syndrome. “We don’t actually know how rare this is,” Dominguez says. “We don’t know the baseline of how many kids have been infected and how many people are in this population. So, there are

multiple levels of trying to determine the incidence and prevalence. We think so far that is relatively rare, but I think we need more data to understand the exact rate.”

MIS-C is linked to coronavirus in the case definition by the CDC, but it is not thought that the syndrome itself is transmissible because it probably is an inflammatory immune response. “We are basing our infection control on whether they have a positive PCR test or evidence of active viral shedding at the time they are admitted to the hospital,” he says. “There is no evidence that someone who has MIS-C in the hospital can transfer that to another [patient] or their family, but they can definitely transmit SARS infection. And some patients who have SARS infection can go on to develop this more serious presentation due to their reaction to the virus. Who those kids are, we don’t really know. At this point in time we don’t know what the risk factors are.”

The implications for children returning to school are weighty because some parents may see even a rare risk as too dangerous to expose to kids.

“That’s the million-dollar question,” Dominguez says. “I think the school decisions are best left to our public health authorities. I still think that this is a relatively rare event. The vast majority of kids who are getting infected with SARS-CoV-2 are doing very well compared to their adult counterparts.” ■

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# A Nurse's Story: Hospitalized with COVID-19

*'I started feeling ... I am going to come through this'*

A highly experienced nurse knew to remain calm and turn her healing power inward as she fought COVID-19 in patient isolation for six long days in a hospital.

"You feel like you're suffocating, and you can't take deep breaths of air," she says. "That gives you a panicky feeling sometimes. When I was on the oxygen, I felt a lot better. I'm sure [other patients] are feeling the same way — you panic because you can't take in enough air. You get headaches and you feel fatigued."

**Kay Ball**, PhD, RN, CNOR, CMLSO, FAAN, has decades of nursing experience and has been a professor of nursing at Otterbein University in Ohio since 2010. She also is a perioperative nurse educator and consultant, well-known for her research on the hazards of surgical smoke in the operating room. Ball described her hospitalization and recovery from the pandemic coronavirus in the following interview, which has been edited for length and clarity.

**HIC:** First, how are you feeling now?

**Ball:** I think I have totally recovered. It is something I wouldn't wish on anybody. At the beginning of April, I started getting nauseated. I didn't want to eat, had headaches, and was really tired. I had abdominal pain in the lower right quadrant, but I didn't want to take up a COVID bed. I started thinking, do I have appendicitis? Finally, my family practice doctor told me that I should probably go to the hospital, and that was reconfirmed by a good [physician] friend of ours. There were three hospitals [in the

Columbus, OH, area], and I took the smallest one because I happen to know people there. I went to the emergency room and they did a COVID-19 test to see if I had it. That hadn't even crossed my mind. They gave me a CAT (computerized axial tomography) scan and the right abdomen showed nothing. The doctor came back and told me, "I am almost positive you have COVID-19" — although they had not gotten the test results back. He said, "Look at this," and turned the computer around and showed me my chest X-ray, saying, "You have viral pneumonia, and it's probably COVID."

**HIC:** As you explain, you were sent home under precautions and advised to take zinc and vitamin C to boost your immune system. You were told to come back to the hospital if you started to struggle with breathing.

**Ball:** I had not thought about my breathing, but I was breathing very shallowly and if I took a deep breath, I would cough. I went home and sent an email to my "Ya Ya" sisters, four nurse friends, one of whom lives right in this area. I said I needed a pulse oximeter. My friend called around and found the only one available and brought it over and put it on the front porch of the house. I didn't even see her. I didn't sleep in my own bedroom that night because I didn't want to expose my husband. I didn't know then that he was going to test positive, too.

All night long, I did my pulse oximeter readings, which should be 95 to 100 in a healthy person. Mine were low- to mid-80s. I had a

fever of 100.3°F, which is not really that high of a temperature, but it just came up. In the morning, we decided I needed to go back to the hospital. They put me on oxygen right away because I had such a low oximeter reading.

**HIC:** Your test came back positive for COVID-19?

**Ball:** Yes, and I was put in isolation. When you are sick, you are isolated, when you are healthy, you are quarantined. I was isolated in a room on a COVID floor they had set up. The nurses would totally gown up and use all the PPE (personal protective equipment) and take it off at the door before they went out. They didn't come in very often, about three times a day. The doctor would come in about once a day. But we have to protect our PPE. We only have so much, and they can't keep going in and out, because every time they go in they have to change to a new gown and gloves. That's hard, and it's expensive.

**HIC:** How did your treatment proceed?

**Ball:** I was having a pretty rough day and they started me on hydroxychloroquine. The doctor told me to lay prone — on my belly — five times a day for about 20 minutes each time. That allows the alveoli — the air sacs in your lungs — to open up in the lower part of your lungs. They have found that the prone position works for acute respiratory distress and patients can breathe better. When I flipped back over, I was able to take deep breaths a lot easier. Healthcare research has shown that the prone position helps people who are struggling with breathing.

It was a chore because I had all these monitors on my chest — they were monitoring my heart because I was on hydroxychloroquine. I had heard they were using it, and that there were some side effects, but they took care of it by monitoring my heart. I knew it caused arrhythmia, and as a nurse I was feeling my heart to see if I had any [signs]. Being a nurse, you've got to nurse yourself. They also gave me a spirometer that you use to take deep breaths and told me to do that several times a day, too.

Because I was in isolation, they would put my food tray on a shelf right by the door. So, if I wanted to eat, I had to go get the tray myself. And that was good because it made me get out of bed, although I didn't feel very good at all. So, I was in bed a lot and isolated. I watched TV and slept a lot because I was so tired.

**HIC:** You were on oxygen, but you did not have to be intubated and put on a ventilator?

**Ball:** Yes, and when you are just on oxygen how you recover is going to depend on how you are doing. You have to get up every once in a while. I had an O<sub>2</sub> cannula and it felt so much better when I was on oxygen — I could take a deep breath. Because every time you take a deep breath with COVID, you kind of cough. One of the things they say is to take a deep breath in the morning and if you have to cough something might be going wrong. Those were some of the tell-tale signs that I was having. Some of the nurses came in and said, "Dr. Ball," because I have my PhD. They knew I taught nursing at a university, but they were so good because they would still explain to me everything they were doing. Every night I got a shot in my belly of [enoxaparin sodium] to prevent blood clots. That can be a big problem.

**HIC:** You mentioned you had feelings of your own mortality at some of the lowest points.

**Ball:** A lot of things go through your mind when you think of your own life. When is your time going to be and all of that. I had just started a study — a survey of nurses on the effects of surgical smoke. I was having thoughts like, "I need to call my statistician in Texas and tell him my sign-in and my pass code," because I wanted somebody to be able to access this information. I was blessed. I survived, and I didn't have to be intubated. I think it was because so many people were praying for me. The Good Lord's arms were surrounding me, and I could feel that. I started feeling toward the end of my hospitalization, "I am going to come through this." I knew I was getting better because I started to have an appetite. They brought me some roasted pork and mashed potatoes with warm gravy. That tasted so good — I was getting my appetite back. I didn't eat everything — but the ice cream and sherbet always tasted good.

**HIC:** How did it feel to be discharged?

**Ball:** Just going through that door to get out — my husband is in the van, [and] of course as soon as I got in the car, I started crying. I was pretty emotional after being in isolation that long. The thing I would say to healthcare workers is to try to be as healthy as you can be, so your own immune system will fight this ravaging virus.

**HIC:** Your husband tested positive as well, but remained asymptomatic?

**Ball:** Yes, and we recently got antibody testing and we were both positive on that, so we are making the antibodies. So many people have asked me, "Well, how did you get

it?" My husband and I were staying at home, and when we went to the store we had N95 respirators and gloves on. We were doing everything, but I am a face toucher. I tell people don't touch your face, but you put hand underneath your chin leaning on a table. It can come in through your nose or mouth, or maybe I just scratched my face — it can come through the mucosa around the eyes. So, my bottom-line now is do not touch your face — make sure you wash your hands. The other thing I am experiencing now, and you probably are too: People go out to grocery stores and they don't even wear a mask. The mask is not to protect you — it is to protect everyone around you. I don't think I can get it a second time, but maybe I can, I don't know. If you think that masks don't prevent the spread of germs, when you come in for surgery we will let your anesthesiologist, surgeon, and nurses know. We are glad not to wear a mask around your incision. Think of it that way. If I was going in for surgery, would I tell my surgical team not to wear masks? We are not protecting ourselves, we are protecting you. Think about that when you are out in public, you are protecting everybody around you.

**HIC:** Where are you at on the research paper you mentioned?

**Ball:** I am trying to write the article for the *AORN Journal* based on the nurse responses — 1,300 nurses responded to my survey in a one-month period. It shows that we have so many nurses now with respiratory problems from breathing in surgical smoke when we cut and coagulate tissue. This happened in April in the middle of COVID, and the nurse could write comments at the end of survey. Many commented on how COVID has pushed their hospitals to have a smoke-free

surgical department. Hospitals are mandating smoke evacuation in some of their places. Some of the

surgeons who were so resistant are saying, “We better not be breathing this stuff in if we are operating on a

COVID patient — we don’t know how it is transmitted.” So that has been a silver lining. ■

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## CDC’s COVID-19 Guidelines on Going Out and Gathering Have Cautions and Caveats

*‘We’re not out of the woods yet’*

Trying to strike a balance epidemiologically, and perhaps politically, the Centers for Disease Control and Prevention (CDC) has issued guidelines for people wanting to leave home and attend gatherings as COVID-19 cases generally have plateaued nationally.

However, this pandemic has been marked by sudden changes, and some states were reporting spikes in cases even as the new guidelines were released at a June 12, 2020, press conference. One unknown is how levels of the novel coronavirus in various communities will be affected by social protests in many cities nationally. Accordingly, the CDC released the guidance with a considerable caveat.

“We are not out of the woods yet,” said **Jay Butler**, MD, who is leading the CDC pandemic response. “In the coming weeks, we could see increases in the number of cases of COVID-19 as states reopen and as there is an increase in public gatherings as we move into the summer across the country.”

The CDC released two online guidelines, one for people going out in the community and another on large and small gatherings.<sup>1,2</sup>

Both urge the now-established measures of frequent hand hygiene, masking, and social distancing. The agency appears to be trying to afford some respite before the onset of a

looming flu season that likely will include a resurgence of the novel coronavirus.

“In addition, we must look ahead to the fall and winter,” Butler said. “If anything, we must be overprepared for what we might face later this year. Getting a flu vaccine will be more important than ever, as flu and COVID-19 could be circulating together as we move into the fall and winter months.”

There are three key variables that provide a general rule of thumb for community activities.

“The more closely you interact with others, the longer the interaction lasts and the greater the number of people involved in the interaction, the higher the risk of COVID-19 spread,” Butler said. “Understanding these risks and how to adopt different prevention measures can help you protect yourselves and others against the virus.”

For example, when dining out, consider restaurants where you can sit outside or choose a table that is at least six feet away from other diners.

“If your local library is open, see if curbside pickup is available,” he said. “If you want to gather with friends for a cookout, as much as possible use single-serve options and remind guests to wash their hands before and after eating. Maintain social distancing, wear cloth face

coverings when possible, practice hand hygiene, and avoid sharing frequently touched items.”

According to the CDC, ask the questions summarized below before you go out into your community, consulting local health department data to inform decisions:

- Is COVID-19 spreading in my community?
- What are the local orders in my community?
- Will my activity put me in close contact with others?
- Will I have potential close contact with someone who is sick or anyone who is not wearing a face covering (and may be asymptomatic)?
- Am I at risk of severe illness if I acquire COVID-19?
- Do I live with someone who is at risk for severe illness?
- Will I have to share any items, equipment, or tools with other people?
- Will I need to take public transportation to get to the activity?
- Does my activity require travel to another community?

“While COVID-19 is still making headlines everywhere, we know that the pandemic hasn’t affected everyone everywhere in the same way,” Butler says.

“The good news is, nationally, we have been successful in flattening the curve. The number of new

cases each day has been relatively plateaued over a prolonged period of time. But, right now, communities are experiencing different levels of transmission, and this is occurring as they gradually ease up on some of the community mitigation efforts and gradually reopen.”

In general, indoor spaces with less ventilation where it might be harder to keep people apart are more risky than outdoor spaces. Interacting without wearing cloth face coverings also increases your risk, the CDC notes.

“The whole goal here is to continue to keep that curve as flattened as possible to delay onset of cases for two reasons,” he said. “We want to make sure that critical infrastructure that is important for societal function as well as the availability of healthcare services is maintained and that none of these services are overwhelmed by a sudden increase in the number of cases.”

## Considerations for Events and Gatherings

As some communities in the United States begin to plan and hold events and gatherings, the CDC offers the following considerations for enhancing protection of individuals and communities and preventing the spread of COVID-19.

“Because COVID-19 virus circulation varies in communities, these considerations are meant to supplement — not replace — any state, local, territorial, or tribal health and safety laws, rules, and regulations with which gatherings must comply,” the CDC states. “Organizers should continue to assess, based on current conditions, whether to postpone, cancel, or

significantly reduce the number of attendees for gatherings.

In general, the risk of COVID-19 spreading at events and gatherings increases as follows:

**Lowest risk:** Virtual-only activities, events, and gatherings.

**More risk:** Smaller outdoor and in-person gatherings in which individuals from different households remain spaced at least six feet apart, wear cloth face coverings, do not share objects, and come from the same local area.

“ORGANIZERS SHOULD CONTINUE TO ASSESS, BASED ON CURRENT CONDITIONS, WHETHER TO POSTPONE, CANCEL, OR SIGNIFICANTLY REDUCE THE NUMBER OF ATTENDEES FOR GATHERINGS.”

**Higher risk:** Medium-sized in-person gatherings that are adapted to allow individuals to remain spaced at least six feet apart and with attendees coming from outside the local area.

**Highest risk:** Large in-person gatherings where it is difficult for individuals to remain spaced at least six feet apart and attendees travel from outside the local area.

## Compliance Is Voluntary

Butler was asked the inevitable question about whether rallies for President Trump, who has declined to wear a face mask for most public events, would be safe.

“The guidelines speak for themselves, and they are not regulations,” he said. “They are not commands. They are recommendations or even suggestions, is I believe how it is titled, of how you can have a gathering that will keep people as safe as possible.”

In general, the “degree of adherence” to the recommended measures will determine the course of the pandemic and future mitigation actions, if warranted.

“If cases begin to go up again, and particularly if they go up dramatically, it’s important to recognize that more intensive mitigation efforts, such as what were implemented in March, may be needed again,” Butler says. “And that is a decision that really needs to be made locally, based on what is happening within the community regarding disease transmission. We know this pandemic is not over. Looking at some of the serology data, the vast majority of Americans still have not been exposed to this virus.”

The increase in cases reported in various areas could be driven by the increased availability of testing.

“It’s important to know, of course, that a certain proportion of people who become infected never develop any symptoms,” he added. “So, as testing has become more widely available, some people are tested without any symptoms.”

The CDC is looking at hospitalizations as a key indicator of whether COVID-19 is increasing in a given area.

“We are also looking at emergency department utilization for COVID-19-like illness, because the test results in and of themselves only reflect a bit of the transmission that’s occurring,” Butler said. “Right now, the [national] hospitalization rates are going down, and in most of the places where we have looked at the increase in the recent week

or two in the number of cases diagnosed, we are not confirming dramatic increases in the number of hospitalizations.” ■

## REFERENCES

1. Centers for Disease Control and Prevention. Deciding to go out. Coronavirus Disease 2019 (COVID-19). Updated June 12,

2020. <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/activities.html>

2. Centers for Disease Control and Prevention. Considerations for events and gatherings. Coronavirus Disease 2019 (COVID-19). June 12, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/community/large-events/considerations-for-events-gatherings.html>

# CDC Updates Guidance on COVID-19 Transmission in Dental Settings

*Concerns about aerosols, splashing*

The Centers for Disease Control and Prevention (CDC) has updated infection control guidelines for COVID-19 in dental settings, including new information on facility and equipment considerations and using test-based strategies to inform patient care.<sup>1</sup>

**Michele Neuburger**, DDS, MPH, a dental officer at the CDC, reviewed the guidelines at a recent webinar.

“You should proactively communicate to both personnel and patients that they need to stay home if sick and know the steps to take if a patient with COVID-19 symptoms enters your facility,” she said.

“The biggest change to our guidance was the inclusion of recommendations for resuming non-emergency dental care during the pandemic.”

Continue to practice universal source control (masking) and actively screen for fever and symptoms of COVID-19 for all patients, visitors, and staff who enter the dental facility. Ensure that staff have sufficient personal protective equipment (PPE) and supplies to treat the volume of patients safely.

For universal source control, dental personnel always should wear a face mask or a cloth face covering while they are in the dental setting, Neuburger said. “You should take steps to prevent self-contamination and perform hand hygiene immediately before and after any contact with your face mask or cloth covering,” she said. “Dental settings should provide personnel with training about when, how, and where face masks and cloth coverings can be used, and you should also request that patients and visitors wear a cloth face covering or provide a face mask if supplies are adequate.”

The guidelines are broken into three tiers, based on the level of coronavirus transmission in the communities:

- None to minimal community transmission
- Minimal to moderate community transmission
- Substantial community transmission is defined as large-scale community transmission, including communal settings (e.g., schools, workplaces)

“Some infected individuals might not be identified based on clinical

signs and symptoms,” Neuburger said.

“So, facilities can consider using a tiered approach to using PPE based on the level of transmission in the community. For example, in areas where there is moderate to substantial community transmission, this might include considering having dental personnel wearing N95 or higher level respirators for higher risk procedures like aerosol-generating procedures.”

Consider implementing preadmission or preprocedure testing for COVID-19, which might inform implementation of PPE use, especially in the situation of PPE shortages, the CDC recommends.

“However, there are limitations to this approach, including negative test results from patients who are in their incubation period and might later become infectious, and also false negative test results,” Neuburger said.

Ask patients to inform the dental clinic if they develop symptoms or are diagnosed with COVID-19 within 14 days after the appointment, the CDC notes.

## Practice Management

Ensure that all patients, visitors, and staff adhere to respiratory hygiene and cough etiquette, and take the following actions to reduce infection risk:

- Place chairs in the waiting room at least six feet apart.
- Remove toys, magazines, and other frequently touched objects that cannot be regularly cleaned or disinfected.
- Minimize the number of persons waiting in the waiting room.
- Review the manufacturer's instructions for reinitiating use of all equipment and devices after a period of non-use.

"Whenever possible, dental personnel should remain with one patient until dental care is complete and minimize the practice of one personnel providing care to multiple patients at once," Neuburger said. "Set up operatories, so that only the supplies and instruments needed for the procedure are readily accessible."

Avoid aerosol-generated procedures, such as the use of dental handpieces, air water syringe, and ultrasonic scalars, she added. "If they are necessary for dental care, use [assistants for] 'four-handed' dentistry, high-evacuation suction, and dental dams to minimize droplet spatter and aerosols."

Dental facilities should implement sick leave policies that are

flexible, nonpunitive, and consistent with public health guidance for dental personnel. Dental personnel should not come to work if they suspect they have COVID-19, and they should regularly monitor themselves for fever and symptoms consistent with COVID-19.

"If a patient arrives at your facility and is expected or confirmed to have COVID-19, defer dental treatment and give the patient a mask, if they're not already wearing one," the CDC states. "If the patient is not acutely sick, send them home and instruct them to call their primary care provider. If the patient is acutely sick — for example, has trouble breathing — refer the patient to a medical facility or call 911, as appropriate."

Ensure that environmental cleaning and disinfection procedures are followed consistently and correctly after each patient. "To clean and disinfect the dental operatory after a patient without suspected or confirmed COVID-19, we recommend that you wait 15 minutes after completion of clinical care and exit of the patient to begin to clean and disinfect the room surfaces," Neuburger noted. "Now, this was developed as an interim recommendation specific for dental settings," she said. "We understand that this is a longer period of waiting than other healthcare settings, and we're continually reviewing this."

There is concern that dental care generates aerosols and splashes that could contaminate the room and expose workers.

"There are a lot of unknowns about the risk of aerosols, but what we do know is one of your greatest risks occurs during clinical procedures when you have the potential of getting splashed directly and the surfaces directly around you get contaminated," she says. "So, the most important thing to focus on is your standard precautions and any other additional transmission-based precautions that are recommended."

In general, sterilization protocols do not vary for respiratory pathogens.

"You should perform routine cleaning, disinfection, and sterilization," Neuburger said. "Follow the manufacturer's instructions for the times and temperatures recommended for the sterilization of specific dental devices." ■

## REFERENCE

1. Centers for Disease Control and Prevention. Guidance for dental settings. Coronavirus Disease 2019 (COVID-19). Updated May 19, 2020. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/dental-settings.html>



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## CME/CE QUESTIONS

1. **Ashish Jha, MD, MPH, said new COVID-19 tests are needed to supplement the current wide use of which of the following?**  
a. Antigen tests  
b. Antibody tests  
c. Reverse transcription polymerase chain reaction  
d. Genomic technologies
2. **Monica Gandhi, MD, MPH, said a study of masking during an outbreak of COVID-19 convinced her it was a highly effective intervention. What was the setting of the outbreak?**  
a. Cruise ship  
b. Hospital  
c. Prison  
d. Homeless shelter
3. **Samuel Dominguez, MD, PhD, said some children are stricken with a mysterious, serious syndrome after COVID-19 has peaked in an area after approximately what period of time?**  
a. One week  
b. Two weeks  
c. Three weeks  
d. Four weeks
4. **According to Michele Neuburger, DDS, MPH, which recommendation for dental settings was different from other healthcare settings?**  
a. Universal source control for healthcare workers  
b. Patients need not be masked  
c. Waiting 15 minutes after care is completed to clean and disinfect the dental procedure room.  
d. Testing of all patients and a 14-day waiting period before receiving treatment