



# HOSPITAL INFECTION CONTROL & PREVENTION

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## ➔ INSIDE

**CDC Expands Testing:** As more COVID-19 tests become available, the CDC is broadening its criteria to test more symptomatic patients — regardless of travel history or exposure to a known case . . . . 40

**PPE ‘Flying Off Shelves’:** Hospitals are reporting inordinately high “burn rates” of personal protective equipment, as healthcare personnel are exposed to nonstop media coverage of panicked shoppers and grim-faced public health officials . . . 42

**COVID-19 Kills 32 in Seattle Nursing Homes:** Coronavirus infections at several long-term care facilities in the Seattle area have killed at least 32 elderly residents and infected two healthcare workers . . . . . 44

**CMS Drops Routine Surveys:** Infection prevention will be in the spotlight in the Center for Medicare and Medicaid Services’ new emphasis plan . . . . . 45

**COVID-19 Mortality 10 Times That of Flu:** Though there are variables by health status and age, the mortality rate of COVID-19 is about 10 times greater than a seasonal flu virus . . . . . 46



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## CDC Revises Guidelines as Coronavirus Spreads in U.S.

*As pandemic sets in, recommendations to maintain staff, PPE*

By Gary Evans, Medical Writer

The containment phase of identifying and tracking contacts of individual COVID-19 cases is giving way to a broader social mitigation strategy as the outbreak increases in the United States. Travel information is still important, but it will become less predictive of infection as person-to-person transmission occurs in the community.

To blunt community transmission, on March 15, 2020, the Centers for Disease Control and Prevention (CDC) recommended that, for the next eight weeks, all gatherings of 50 people or more throughout the United States be canceled or postponed. In general, the CDC recommends that decisions about school closures be made at the state and local level based, in part, on community transmission rates.

The U.S. response has been complicated by the lack of diagnostics, particularly at the point of care, but as tests become more available and

widely distributed, expect an upsurge in coronavirus cases that heretofore were undetected. This may create the false impression of rapid transmission, but the numbers will give a truer picture of the scale of the outbreak in the United States.

“We know it is going to get out into the community, but by taking a [containment] approach up front we are buying time,” said **Michael Bell**, MD, deputy director of the Centers for Disease Control and Prevention Division of Healthcare Quality Promotion.

“We are trying to suppress the peak of our epidemic curve and delay the arrival of that peak,” he said at a recent meeting of the CDC’s Healthcare Infection Control Practices Advisory Committee (HICPAC). “That has the impact on the health system of having a slightly smaller and hopefully a lower magnitude of the arrival of cases.”

The containment phase has given hospitals and healthcare settings much-needed time to prepare, says **Connie**

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**Steed**, president of the Association for Professionals in Infection Control and Epidemiology (APIC).

“APIC has stood up a task force, and IPs [infection preventionists] are in roles of emergency management preparation for COVID-19,” Steed told *Hospital Infection Control & Prevention*. “All over the country, there is preparatory work going on to make sure they have the appropriate PPE [personal protective equipment] and the training. They are making sure if there is a surge of cases, where are you going to put them? What are the plans to address that? All hospitals are in close connection with the [state and local] public health departments as instructed by the CDC.”

IPs also are involved in trying to allay fears and putting the coronavirus threat in perspective for both the public and healthcare workers, Steed adds. The hope is that this preparation and community mitigation, such as social distancing and canceling large-crowd events, will prevent the healthcare system from becoming overwhelmed if the outbreak continues to expand.

## A 'Brittle' System

“When I talk about mitigation, a lot of what I’m thinking about is how we assist what is in fact an extremely brittle healthcare system to continue to function despite the outbreak,” Bell said.

The U.S. healthcare system is vulnerable to a pandemic, in part because of lean staffing practices, just-in-time supply chains and purchasing, and the expectation that hospital patients will be moved fairly quickly to less expensive post-acute locations, such as nursing homes and outpatient settings, he said.

“This makes sense during normal times, but we are really not well

designed to stand up to something like an outbreak,” Bell said. “So, we are seeing all of the predictable effects of that, and a lot of what we are doing as we move to mitigation is to try to accommodate those realities in a way that is safe for healthcare personnel (HCP), protects our patients, and allows us to keep the doors open to continue delivering care.”

An immediate threat to this goal is maintaining the needed stock of PPE. The CDC has outlined contingency plans for measures that can be taken if N95 respirators are in short supply.<sup>1</sup>

If supply shortages are not an issue, the original recommendations for PPE for healthcare workers treating suspected or confirmed COVID-19 patients still are a fit-tested N95 respirator or higher level, eye protection, and gowns and gloves. The latter two are recommended because the CDC is concerned about the role the environment may play in transmission of the virus.

“Eye protection is something we have culturally, for a generation or more, been lax about,” Bell said. “I think that is frankly unacceptable in routine times, given that influenza strikes wildly across our communities every year. So, this [outbreak] is an opportunity to firm up our eye protection. The fact is that our eyes drain into the back of our throat and we are trying to keep respiratory viruses out of our throat.”

Although surgical masks provide some protection from large particulate droplets, there is concern that small particles could be inhaled via the mask gaps on either side of the face if the worker is within six feet of the patient.

“That’s why we recommend respirator protection,” Bell said. Medical procedures that create aerosols are a prime concern, but there is no evidence that COVID-19 is a true airborne pathogen like measles.

The mask vs. respirator issue really came to the fore in the 2009 influenza pandemic, and additional research has found little difference in terms of subsequent respiratory infections in healthcare personnel.

“What we see is that people are much more likely to adhere correctly to surgical mask use than to respirator use,” Bell said. “We will continue to navigate that gray zone, but for the time being, that is the recommendation that we made during the containment phase. That has led to a very inconveniently timed reality that we are running short of much of this protective equipment.”

The CDC’s National Institute for Occupational Safety and Health (NIOSH) is working on a report about using stockpiled respirators that are past their “use by” date, Bell said. In addition, the CDC now is recommending a strategy in times of shortage to save respirators for the most high-risk situations.

“We have negotiated intensively with our labor union colleagues and worked closely with NIOSH and OSHA [Occupational Safety and Health Administration] to get to a point where we can say that during a time of shortage we need to prioritize the available respirator protection — whether that is N95s, powered air purifying respirators, or anything else — for the highest-risk activities, so the healthcare personnel who undertake those activities are still protected,” Bell said. This recommendation suggests wearing a surgical mask for general care of coronavirus patients, while still requiring respirators for aerosol-generating procedures. Those wearing surgical masks should still don gloves, gowns, and eye protection. The patient should be masked for source control of the virus.

“This is a temporary state of affairs,” he said. “The intent would

be that once the supply chain [issues] are resolved, we would go back to recommending respirator protection once it is available. This is a pivot that we are making so we are not painted into a corner. We don’t want to wait until everything is gone and there isn’t anything left for those high-risk procedures. So now is the time to do this.”

## ‘Low-Risk’ Exposures

Another CDC guideline change anticipates that as the coronavirus outbreak expands in the United States, healthcare workers will be exposed to infected patients through minor breaks in protocol or PPE.<sup>2</sup>

“As we look at the progress of this outbreak, there are going to be greater and greater numbers of HCP exposed, not necessarily high-risk exposures like doing an induced sputum or something like that, but nonetheless a non-negligible exposure,” Bell said.

Routine two-week furloughs for workers with minor exposures could lead to inadequate staff to care for patients. Thus, the CDC has designed contingency planning guidelines that would allow asymptomatic healthcare workers to still work if they have a “low-risk” exposure to a coronavirus patient.

These include allowances for asymptomatic HCP — who have had an exposure to a COVID-19 patient — to continue to work after options to improve staffing have been exhausted.

“Facilities could consider allowing asymptomatic HCP who have had an exposure to a COVID-19 patient to continue to work after consultation with their occupational health program,” the CDC states. “These HCP should still report temperature and absence of symptoms each day prior to starting work. Facilities could have exposed HCP wear a face mask

while at work for the 14 days after the exposure event if there is a sufficient supply of face masks.”

If these workers develop even mild symptoms consistent with COVID-19, they must stop all patient care, notify their supervisor, and leave work, the CDC recommends. The thinking, in part, is to maintain the critically needed healthcare workforce rather than have arbitrary and extensive furloughs.

Examples of low risk include occupational exposure to a COVID-19 patient without wearing any one of these: eye protection, a gown, or gloves. (See *Table 1*.) Wearing a surgical mask instead of an N95 respirator while exposed to a coronavirus patient also is categorized as a low risk. Of course, individual circumstances could affect these situations greatly, and the CDC recommendations are nonregulatory and optional.

The guidelines state that the CDC has “removed [the] requirement under ‘self-monitoring with delegated supervision’ for healthcare facilities to actively verify absence of fever and respiratory symptoms when HCP report for work. This is now optional.” The CDC also simplified risk exposure categories based on the most common scenarios involving source control measures, use of PPE, and the duration of contact with the patient.

## Community Transmission

“[Community transmission] means previously recommended actions (e.g., contact tracing and risk assessment of all potentially exposed HCP) are impractical for implementation by healthcare facilities,” the CDC guidelines state.

“In the setting of community transmission, all HCP are at some risk for exposure to COVID-19, whether

in the workplace or in the community. Facilities should shift emphasis to more routine practices, which include asking HCP to report recognized exposures, regularly monitor themselves for fever and symptoms of respiratory infection, and not report to work when ill.”

IPs and their employee health colleagues should develop a plan for how they will screen for symptoms and evaluate sick workers. This could include having healthcare workers report absence of fever and symptoms prior to starting work each day.

“I think this will make a large difference,” Bell said. “The issue of [allowing] symptomatic personnel to work is not currently on the table. It is something, however, I think a great deal about because during cold and flu season it is a reality that many healthcare workers come to work with a minor snuffle or a scratchy throat.”

There may come a time during this outbreak where shorthanded facilities need to consider letting workers with mild symptoms be allowed to work while wearing a mask.

“This is at odds with the very concrete statement that people often make, of ‘don’t come to work when you’re ill,’” he said. The problem with that blanket policy — and one of the explanations for the longstanding problem of presenteeism — is that many healthcare workers have limited

sick leave, must use vacation days, or are not paid if they are out ill.

“I think our [HICPAC] committee is going to have to weigh in,” Bell said. “Not just for this outbreak but looking forward — do we want to see a change in our culture about how we manage healthcare personnel with very mild symptoms?”

## A Public Health Pivot

The CDC will continue to grapple with these problems in healthcare, but the shift to community mitigation will dominate the coming months, Bell added.

“With regard to the healthcare system, right now the focus is on protecting a very critical asset to the nation,” he said. “At a certain point, healthcare personnel are going to be more likely to get this infection at the grocery store than they are at the hospital.”

As of March 16, 2020, the United States had 3,487 total cases of the coronavirus and 68 deaths. Cases have occurred in 49 states and the District of Columbia. The CDC was gearing up for many more cases in the days and weeks ahead. In a move that was anticipated, the World Health Organization declared COVID-19 a global pandemic on March 11, with the case count reaching more than 14,000 cases with more than 4,000

deaths in at least 114 countries. China still bears the bulk of COVID-19, but new cases are declining there in a hopeful sign that mitigation strategies can be effective.

“If you look at the vast outbreak in China, it peaked and started to resolve in three or four months,” Bell told HICPAC members.

“We are now in month two. We probably have two or three more months of work to do in terms of accommodating this. Everything we do, we have to try to be nimble, making sure what we have said so far doesn’t get in the way and getting ready for what happens next.” ■

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# CDC Broadens Testing to Include More Patients

*Prioritize hospitalized patients, older adults*

As more COVID-19 tests become available, the Centers for Disease Control and Prevention (CDC) is broadening its criteria to test more symptomatic patients — regardless of travel history or a known exposure to another case. The move comes as the outbreak response

shifts from containment to broader social mitigation strategies, such as social distancing and banning large gatherings.

“With expanding spread of COVID-19, additional areas of geographic risk are being identified and the criteria for considering testing

are being updated to reflect this spread,” the CDC stated in a health alert.<sup>1</sup> In addition to public health labs, the Food and Drug Administration has granted emergency use authorization for more tests in clinical laboratories.

“Clinicians should use their judgment to determine if a patient

has signs and symptoms compatible with COVID-19 and whether the patient should be tested,” the CDC stated. “Most patients with confirmed COVID-19 have developed fever and/or symptoms of acute respiratory illness (e.g., cough, difficulty breathing).”

Priorities for testing include:

- hospitalized patients who have signs and symptoms compatible with COVID-19 in order to inform decisions related to infection control;
- other symptomatic individuals, such as older adults (age  $\geq$  65 years) and individuals with chronic medical conditions and/or an immunocompromised state that may put them at higher risk for poor outcomes (e.g., diabetes, heart disease, receiving immunosuppressive medications, chronic lung disease, chronic kidney disease);
- any persons, including healthcare personnel, who, within 14 days of symptom onset, had close contact with a suspect or laboratory-confirmed COVID-19 patient, or who have a history of travel from affected geographic areas within 14 days of their symptom onset.

## Test for Flu as Well

“There are epidemiologic factors that may also help guide decisions about COVID-19 testing,” the CDC stated. “Documented COVID-19 infections in a jurisdiction and known community transmission may contribute to an epidemiologic risk assessment to inform testing decisions. Clinicians are strongly encouraged to test for other causes of respiratory illness (e.g., influenza).”

As this story was filed, the CDC was estimating that flu had led to about 350,000 hospitalizations and 20,000 deaths during the 2019-2020 season. Thus, many facilities have

posted signs telling patients to cover coughs and sneezes and practice hand hygiene while waiting to check in.

“We believe in respiratory hygiene and etiquette,” says **David Weber**, MD, hospital epidemiologist and associate chief medical officer at the University of North Carolina Health Care in Chapel Hill. “If they are coughing or sneezing, they are given a mask and [told to] stay six feet away from other people — the droplet spread distance. They are given tissues and asked to sneeze into them and throw them away. Then as soon as we are able, we move them to a private room. We are not just worried about COVID-19, but also transmission of flu and other respiratory diseases.”

Patients are screened at every

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hospital entrance, including those just coming in for an X-ray or a blood draw, he says.

“If we had a case [of COVID-19] admitted, we would put a monitor outside the room 24/7 to make sure that healthcare providers and everyone going in the room are logging in and out,” Weber says. “And to make sure someone doesn’t inadvertently go into the room without the proper personal protective equipment and that they don and doff it correctly.”

Mildly ill patients should be encouraged to stay home and

contact their healthcare provider by phone for guidance about clinical management, the CDC recommends. Patients who have severe symptoms, such as difficulty breathing, should seek care immediately. Older patients and individuals who have underlying medical conditions or are immunocompromised should contact their physician early in the course of even mild illness.

Walk-in patients typically seen at clinics and emergency departments should be encouraged to call ahead if they may have been exposed during travel, says **Michael Bell**, MD, deputy director of the CDC Division of Healthcare Quality Promotion.

“If you receive such a call, we are telling healthcare systems that those individuals should be asked to put a mask on before they arrive,” he says. “Any assessment should be done in a place where they are not exposing other healthcare staff or patients.”

Protective equipment is only one factor in safe and appropriate care.

“Use nurse triage lines, call lines, advice lines for people who don’t require hospital care,” he says. “Include the option of symptomatic people waiting in their vehicles to be assessed. We do it when we are waiting for a table at [a restaurant]. We should be able to do it in the emergency department — simply use their cell phones to bring them in one at a time.” ■

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# Personal Protective Equipment ‘Flying Off the Shelves’

*Protecting supplies in a time of pandemic*

Hospitals are reporting inordinately high “burn rates” of personal protective equipment (PPE), as healthcare personnel are exposed to nonstop media coverage of panicked shoppers and grim-faced public health officials.

“Our PPE is flying off the shelves,” said **Michael Anne Preas**, RN, senior director of Infection Prevention and Hospital Epidemiology at the University of Maryland Medical Center in Baltimore. “Our burn rate is so much higher than our actual need rate because of the public perception that everyone is going to die. There is this perception among our healthcare force that COVID-19 is going to be their demise.”

Preas commented on the situation at a recent infection control advisory committee meeting at the Centers for Disease Control and Prevention (CDC). Some level of fear can be ascribed to the lack of infection prevention training in many healthcare personnel, said **Michael Bell**, MD, deputy director of the CDC Division of Healthcare Quality Promotion.

“We have major gaps in infection transmission training and teaching, ranging from medical schools to nursing schools,” he said. “I hate to say it, but what we are seeing now is the result of a very long problem of neglecting that part of our education.”

One of the lessons of this pandemic is that infection control education should be emphasized in all medical and nursing training.

“I think we need to be asking ourselves what should we be doing for our existing staff, and also for the

people coming through this process, to make sure for the next one of these — and there will be a next one — we don’t have such a heavy lift to do,” Bell said.

However, some of the fear and concern expressed by healthcare workers may be their perception that

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they do not have sufficient supplies of PPE in their facilities to protect themselves while treating patients.

National Nurses United found evidence of this in a recent survey of 1,000 registered nurses in California.<sup>1</sup> The survey found that:

- Only 27% of respondents said there is a plan in place to isolate a patient with a possible novel coronavirus infection. Another 47% reported they don’t know if there is a plan.

- Overall, 73% percent reported that they have access to N95 respirators on their units. In addition, 47% reported access to powered air purifying respirators (PAPRs) on their units.

- Only 27% reported that their employer has sufficient PPE stock on hand to protect staff if there is a rapid surge in patients with possible coronavirus infections.

A common theme in pandemic planning is ensuring a supply of PPE, which means frequently talking to distributors and clamping down on hoarding and indiscriminate use within facilities.

“When the virus first started surfacing, everybody wanted an N95 [respirator], and as you and I know, you probably saw boxes, cases, or pallets of N95s going out the back door,” said **Skip Skivington**, MBA, vice president of healthcare continuity and support services at Kaiser Permanente. “We have heard incredible stories of people willing to pay \$100 of their own money for a box of — not even N95s — surgical masks. We are seeing the burn rate on our surgical masks going up much higher. We have put in pretty aggressive techniques to try to control the flow.”

Similarly, **JoAnn Shea**, ARNP, MS, COHN-S, director of employee health and wellness at Tampa General Hospital, decided with her colleagues to secure supplies to ensure they were not being used indiscriminately or taken home. Some are put out in each needed area, but unit managers have the full inventory under lock and key.

In another conservation measure, workers who use N95 respirators for tuberculosis (TB) patients were given plastic bags to cover and reuse them, allowing reuse with the same patient for up to 12 hours. This practice cannot be done for COVID-19, because it can spread from contact and surfaces as well as droplets.

“Before, everybody was putting on the N95 [for TB patients] and then throwing them away,” Shea says.

Likewise, fit-testing for N95s has been expanded to groups not normally targeted for such respiratory protection, like physical rehabilitation workers and clinicians caring for pregnant women and newborns.

“Just in case we get a pregnant mom or infant with coronavirus, we did just-in-time training for [healthcare personnel],” she says. “Also, not all of our security guards were fit-tested. They had a few designated [who] could go into a patient’s room, but now because of this we have fit-tested all of the security guards.”

Respirator fit-testing also was done in all 17 ambulatory care clinics, where patients with respiratory symptoms are being screened on the phone if possible. “We had to increase our fit-testing quite a bit,” Shea says.

In assessing mask and respirator use in the hospital, Shea and colleagues found a lot of staff were wearing N95 respirators in areas and situations where the gear is unnecessary. The respirators are primarily indicated for suspected TB cases, who are placed in airborne isolation rooms.

“At any one time, we have two or three airborne precautions patients with potential TB,” she says. “Most of them are rule-out patients. Last year we had six TB patients out of 232 with potential TB. So, most were not TB, but you have to wear the N95s.”

However, efforts to limit the number of workers going into the

room can preserve respirators, for example when physicians take a large group of medical students into an airborne isolation room.

“We are asking the medical staff to only have people go into the room who have to care for the patient,” Shea says.

CDC guidelines for extending respirator supplies for the emerging novel coronavirus include excluding or limiting patient visitors and consider cohorting patients or staff.

“Another strategy is to limit face-to-face encounters with the patient. For example, healthcare personnel may consider bundling care activities to minimize room entry,” said **Marie de Perio**, MD, an epidemiologist at the CDC’s National Institute for Occupational Safety and Health. Speaking at a CDC webinar on extending supplies of respiratory equipment, de Perio said use a standard face mask — not an N95 respirator — as source control on a suspected COVID-19 patient. Regarding cohorting, when single patient rooms are not available, patients with confirmed COVID-19 may be placed in the same room, she said.

“Cohorting healthcare personnel means assigning designated teams to provide care for all patients with confirmed or suspected novel coronavirus,” she said. “This is another strategy that may limit the number of healthcare personnel exposed and who need to use N95s, and it also limits the number of personnel that need to be fit-tested.”

In general, CDC guidelines recommend that healthcare facilities:<sup>2</sup>

- Minimize the number of healthcare personnel (HCP) who need to use respiratory protection through the preferential use of engineering and administrative controls.
- Use alternatives to N95 respirators (e.g., other classes of filtering facepiece

respirators, elastomeric half-mask and full facepiece air-purifying respirators, powered air-purifying respirators) where feasible.

- Implement practices allowing extended use and/or limited reuse of N95 respirators, when acceptable.
- Prioritize the use of N95 respirators for those HCP at the highest risk of acquiring infection or experiencing complications of infection.<sup>2</sup>

“In times of increased demand and decreased supply, consideration can be made to use N95 respirators past their intended shelf life,” the CDC recommends.

The equipment may degrade under such conditions, and a visible inspection and seal check should be done by the user before donning the equipment. In addition, the CDC allows extended use of N95 respirators on cohorted patients.

“Extended use refers to the practice of wearing the same N95 respirator for repeated close contact encounters with several different patients, without removing the respirator between patient encounters,” the CDC states. “Extended use may be implemented when multiple patients are infected with the same respiratory pathogen and patients are placed together in dedicated waiting rooms or hospital wards.” ■

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# Coronavirus Kills 32 Residents in Seattle Nursing Homes

*More testing likely to reveal many milder cases*

**C**ORONAVIRUS infections at several long-term care facilities in the Seattle area have killed at least 32 elderly residents and infected two healthcare workers, the King County Health Department reported. As of March 15, 2020, 29 of the deaths were associated with a large outbreak at Life Care Center in Kirkland, WA. Three other residents have died of COVID-19 in other area nursing homes.

One healthcare worker employed at the Kirkland nursing home is a woman in her 40s who was hospitalized in satisfactory condition. She had no known travel history outside of the United States, as health officials now think that COVID-19 may have been circulating in the Seattle community for weeks. The other healthcare worker at Kirkland also was in her 40s and is being cared for at home.

The expectation is that more cases will be identified in the area as testing becomes more available and capacity expands. Efforts were underway to expand intensive care unit capacity at area hospitals and convert a hotel to house those who test positive. Broader social mitigation strategies, such as school closures, were in effect for several districts in Seattle.

At least 15 of the COVID-19 patients died at EvergreenHealth in Seattle after being admitted with life-threatening respiratory conditions, such as severe pneumonia. Approximately 50 additional patients with the coronavirus were being treated at EvergreenHealth as of March 11, 2020. The hospital has added more rooms with negative pressure air flow, and healthcare personnel are wearing

the full regalia of personnel protective equipment, said **Ettore Palazzo**, MD, chief medical and quality officer at EvergreenHealth.

“We have made adjustments at the organization to allow for airborne precautions,” he said. “We are in a situation where we are able to convert our entire critical care unit over to a negative pressure scenario, so we keep those patients and staff safe. And we have those capabilities in other areas of the hospital.”

One of the hardest hit states, Washington was reporting 769 cases and 42 deaths as of March 15, 2020. The Seattle and King County area is the epicenter of the outbreak, with 420 cases and 37 deaths.

“There are likely many mild cases in the community that we are not aware of,” said **Jeff Duchin**, MD, public health officer for Seattle-King County. “These cases at facilities like EvergreenHealth are those at the tip of the iceberg — cases with severe illness.”

As the state increased its testing capacity, more cases were found, he said. “This virus has been in our community, and we are now recognizing that because we are looking for it,” he said. “And the more we look for it, the more we are going to find it.”

## CMS Advice for Nursing Homes

In light of nursing home outbreaks, the Centers for Medicare and Medicaid Services (CMS) issued

a March 4, 2020, memorandum detailing compliance issues for long-term care facilities.<sup>1</sup> The CMS memo provided the following answers to frequently asked questions about preventing COVID-19 in nursing homes, which are paraphrased as follows.

**Q:** How should facilities monitor or limit visitors?

**CMS:** Facilities should screen visitors for the following:

- international travel within the last 14 days to restricted countries (for updated information on restricted countries visit: <https://wwwnc.cdc.gov/travel/notices/>);
- signs or symptoms of a respiratory infection, such as a fever, cough, and sore throat;
- has had contact with someone with or under investigation for COVID-19.

If visitors meet the above criteria, facilities may restrict their entry to the facility.

Specifically, a facility may need to restrict or limit visitation rights for reasonable clinical and safety reasons. This includes restrictions placed to prevent community-associated infection or communicable disease transmission to the resident.

**Q:** How should facilities monitor or restrict healthcare facility staff?

**CMS:** The same screening performed for visitors should be performed for facility staff. Healthcare providers who have signs and symptoms of a respiratory infection should not report to work. Any staff that develop signs and symptoms of a respiratory infection while on-the-job, should:

- immediately stop work,
- put on a facemask,
- self-isolate at home;
- inform the facility's infection

preventionist, and include information on individuals, equipment, and locations the person came in contact with;

- contact and follow the local health department recommendations for next steps (e.g., testing, locations for treatment).

**Q:** When should nursing homes consider transferring a resident with suspected or confirmed infection with COVID-19 to a hospital?

**CMS:** Nursing homes with residents suspected of having COVID-19 infection should contact their local health department. Residents infected with COVID-19 may vary in severity from lack of symptoms to mild or severe symptoms or fatality. Initially, symptoms may be mild and not require transfer to a hospital as long as the facility can follow the infection prevention and control practices recommended by the Centers for Disease Control and Prevention (CDC). Facilities without

an airborne infection isolation room are not required to transfer the patient, assuming the patient does not require a higher level of care and the facility can adhere to the rest of the infection prevention and control practices recommended for caring for a resident with COVID-19.

**Q:** What if the resident develops more severe symptoms and requires transfer to a hospital for a higher level of care?

**CMS:** Prior to transfer, emergency medical services and the receiving facility should be alerted to the resident's diagnosis and precautions to be taken, including placing a face mask on the resident during transfer. If the patient does not require hospitalization, he or she can be discharged to home (in consultation with state or local public health authorities) if deemed medically and socially appropriate. Pending transfer or discharge, place a face mask on the patient and isolate him or her in a room with the door closed.

**Q:** When should a nursing home accept a resident who was diagnosed with COVID-19 from a hospital?

**CMS:** A nursing home can accept a patient diagnosed with COVID-19 as long as it can follow CDC guidance for transmission-based precautions. If a nursing home cannot, it must wait until these precautions are discontinued. The CDC states that decisions to discontinue transmission-based precautions in hospitals will be made on a case-by-case basis in consultation with clinicians, infection prevention and control specialists, and public health officials. Nursing homes should admit any individuals that they would normally admit to their facility, including individuals from hospitals where a case of COVID-19 was/is present. ■

## REFERENCE

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# CMS Drops Routine Surveys to Focus on COVID-19

*Infection prevention will be in the spotlight*

The Centers for Medicare and Medicaid Services (CMS) is suspending routine inspections to focus on issues related to infection control and COVID-19 in hospitals, nursing homes, and other accredited sites, a CMS official announced.

“[We are] suspending non-emergency surveys across the country so our surveyors can focus on the most serious health and safety threats like infectious disease,” said **Daniel**

**Schwartz**, MD, MBA, chief medical officer, CMS. “Our colleagues in the accrediting agencies will follow this policy as well.”

Hospital, dialysis centers, and other facilities with a history of infection control deficiencies are still in line for surveys, he said.

In a March 4, 2020, memorandum, CMS said the action allows “inspectors to turn their focus on the most serious health and safety threats like

infectious diseases and abuse.<sup>1</sup> This shift in approach will also allow inspectors to focus on addressing the spread of the coronavirus disease 2019 (COVID-19).”

According to CMS, effective immediately, surveys are limited to the following, which are listed in priority order:

- all immediate jeopardy complaints (cases that represent a situation in which entity noncompliance

has placed the health and safety of recipients in its care at risk for serious injury, serious harm, serious impairment, or death or harm) and allegations of abuse and neglect;

- complaints alleging infection control concerns, including facilities with potential COVID-19 or other respiratory illnesses;
- statutorily required recertification surveys, such as nursing homes, home health, and hospice;
- any re-visits necessary to resolve current enforcement actions;

- initial certifications;
- surveys of facilities/hospitals that have a history of infection control deficiencies at the immediate jeopardy level in the last three years;

- surveys of facilities/hospitals/dialysis centers that have a history of infection control deficiencies at lower levels than immediate jeopardy.

If CMS inspectors identify or suspect COVID-19, they are to work closely with CMS regional offices in coordination with the Centers for Disease Control and Prevention

(CDC). The CMS has deployed an infection preventionist to the CDC in Atlanta to assist with guideline development. ■

## REFERENCE

1. CMS. Suspension of survey activities. March 4, 2020. <https://www.cms.gov/medicareprovider-enrollment-and-certificationsurveycertificationgeninforpolicy-and/suspension-survey-activities>

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# Questions: COVID-19 Mortality, Conspiracy Theories, and the Mysterious Lack of Sick Children

*'Flu has a mortality of 0.1% – this has a mortality 10 times that.'*

Although there are variables by health status and age, the mortality of COVID-19 is about 10 times greater than a seasonal flu virus, said Anthony Fauci, MD, head of the National Institute of Allergy and Infectious Diseases (NIAID) at the National Institutes of Health (NIH).

“The stated mortality [of COVID-19], when you look at all the data, is about 3%, but I think if you count all the cases that are minimally symptomatic or asymptomatic, that probably brings the mortality rate down to somewhere around 1%,” Fauci said in recent testimony before Congress. “People always say the flu does this, the flu does that. The flu has a mortality of 0.1%. This has a mortality 10 times that.”

That is not a comforting calculation when you consider that a particularly bad flu season — take 2017-2018 as the most recent example — killed 60,000 people and caused more than 800,000 hospitalizations.<sup>1</sup> Applying

Fauci's tenfold estimated mortality rate means the potential death toll of COVID-19 is more than half a million people in the United States. On the other hand, when looking at the 2011-2012 influenza season, there were 12,000 deaths, the least over the last decade. Based on Fauci's formula, the range of COVID-19 death rates extrapolated from these two influenzas could vary from 120,000 to 600,000 deaths in the United States. The Centers for Disease Control and Prevention (CDC) declined to comment on such modeling estimates or clarify whether it is working from one of its own.

Regardless, Fauci's considerable reputation and experience in infectious diseases makes him an authority on these matters, and he has become the voice of calm reason in the federal response to the pandemic. The scale of the COVID-19 pandemic is starting to become clear, as public health officials try to underscore the severity

of the threat without setting off a panic.

Conspiracy theories about how COVID-19 originated and whether it is some kind of bioweapon are not helpful in this effort. All evidence suggests that the new coronavirus came from bats through an animal source to humans, much as did its predecessors, severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).

“I think we need to speak out often and loudly about how much nonsense this is,” Fauci testified. “This is not new with coronavirus. There are always conspiracy theories when there is a new disease that people are afraid of. I have to say that about 37 years ago, I sat in this room trying to explain to the committee then that HIV [human immunodeficiency virus] was not a virus that was developed by the CIA [Central Intelligence Agency] to essentially eliminate certain populations. It's crazy, but this is what

happens when you have outbreaks. There is a lot of misinformation.”

## Vaccine Misunderstandings

In that regard, Fauci painstakingly explained again why a vaccine would not be available in the near term, emphasizing it would be more like one year to a year and a half.

“I want to clear up misunderstandings,” he said. “Right now, the technology we have has allowed us to go from the time the sequence of a virus was put into the public database to the time we can actually stick a candidate into the arm — the fastest we have ever done. I expect that at least one of these vaccine candidates will likely go into clinical trials in a phase 1 study within two months or maybe even six weeks. That would be a record. However, that is not a vaccine.”

Rather, three more months of testing will be needed to determine if the vaccine is safe. Past vaccine debacles have shown that if you don't get a vaccine right, people will lose faith in the system, and the resulting mistrust could undermine herd immunity to all manner of vaccine-preventable diseases.

“If you show it is safe, you've got to put it into a phase 2 trial to show that it works,” Fauci said. “There are medical, ethical, and other considerations. We would be giving this to normal [healthy] people to prevent infection. So, you must be sure. The edict of medicine is, first do no harm.”

It is more likely that treatment of COVID-19 will be available first, with the antiviral remdesivir one of the top candidates under research currently.

“It is being tested in a large trial in China and is also being tested here in the United States in an NIH-

sponsored trial,” Fauci said. “We should know within a period of several months whether this particular drug works. If it does, the implementation of that would be almost immediate. I can't guarantee that it or other drugs in the pipeline will work, but the timetable for a treatment is different than a timetable for a vaccine.”

There has been much discussion whether COVID-19 would fade out in the warmer months, possibly returning later as a seasonal virus.

“When the weather gets warmer, as will happen in March, April, and May, you will inevitably see a marked diminution of influenza,” Fauci said. “The same holds true for other respiratory viruses — including some of the common cold coronaviruses. This could happen with [COVID-19], but we don't know. This is a brand-new virus, with which we have no experience. So even though the concept is that when warm weather comes, many respiratory viruses diminish, we have no guarantee at all that this is going to happen with this virus.”

## Asymptomatic Spread?

There are several other unanswered questions about the novel coronavirus, including whether it can spread in the absence of symptoms. There are reports from China of asymptomatic patients with COVID-19 infecting healthcare workers and people in the community.

“[A] patient undergoing surgery in a hospital in Wuhan infected 14 healthcare workers even before fever onset,” researchers in China reported.<sup>2</sup>

Another case cited in the paper was a patient who traveled from Shanghai to attend a meeting in Germany and was asymptomatic until the flight back to China. Two of the patient's close contacts were infected, and

another two people at the meeting acquired the coronavirus without close contact. In addition, the authors cited an asymptomatic 10-year-old boy who was found to have unusual lung images and markers of the disease in his blood.

“These findings warrant aggressive measures (such as N95 masks, goggles, and protective gowns) to ensure the safety of healthcare workers during this COVID-19 outbreak,” the authors reported.

Unrecognized cases are thought to have contributed to spread in Chinese hospitals, as more than 3,000 healthcare workers have suspected or confirmed novel coronavirus infections.<sup>2</sup>

It is not completely clear whether children generally remain asymptomatic or do not acquire the coronavirus, but there are few cases reported in pediatrics.

“A group that we would have expected to have poor outcomes — if we used influenza as a guide — is children,” says **Amber M. Vasquez**, MD, MPH a member of the CDC's COVID-19 response team. “But based on limited data so far, symptoms of COVID-19 and the clinical course appear to be milder in children. Of [a group of] 44,000 cases in China, only about 2% were less than 20 years old, and no deaths were reported among those less than 10 years old.”

Of course, there are always outliers in any outbreak, and children certainly have been infected with COVID-19.

“What I still don't totally understand is the lack of detectable infections in children, as well as the lack of any degree of serious disease,” Fauci said. “In some of the [case] reports, there wasn't even a single identified case of a person less than 15 years old, which seems almost unbelievable. They have to be getting infected. Why they are not developing



## HOSPITAL INFECTION CONTROL & PREVENTION

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clinical disease is really interesting. This is something we really need to study because it will certainly tell us something about a correlative immune protection." ■

### REFERENCES

1. CDC. Disease burden of influenza. Reviewed Jan. 10, 2020. <https://www.cdc.gov/flu/about/burden/index.html>

2. Chang D, Xu H, Rebaza A, et al. Protecting health-care workers from subclinical coronavirus infection. *Lancet Respir Med* 2020;8:e13. doi: 10.1016/S2213-2600(20)30066-7

## CME/CE QUESTIONS

**1. The rationale for the Centers for Disease Control and Prevention's (CDC) contingency plan to use surgical masks for the care of coronavirus patients is:**

- a. it will be easier to wear masks for routine care for all patients.
- b. to preserve respirators for aerosol-generating procedures.
- c. new filtered surgical masks are being distributed from the national stockpile.
- d. healthcare workers can only wear respirators for a short period of time.

**2. Michael Bell, MD, cited which of the following as a reason for the high level of fear in healthcare workers and the rapid "burn rate" of personal protective equipment (PPE) supplies?**

- a. Concern that much of the PPE in the national stockpile is beyond its "use by" date
- b. Desire to wear PPE outside the hospital, as well as at work
- c. The perception that COVID-19 can spread through ventilator systems
- d. Lack of infection control education in medical and nursing schools

**3. JoAnn Shea, ARNP, MS, COHN-S, said healthcare workers who use N95 respirators for tuberculosis patients:**

- a. were given plastic bags to cover and reuse them.
- b. were told they could clean the respirators and use them for COVID-19 patients.
- c. were instructed to dispose of them after one use.
- d. do not have to have them fit-tested unless they have beards.

**4. Which of the following was at the top of a priority survey list issued by the Centers for Medicare and Medicaid Services?**

- a. All immediate jeopardy complaints and allegations of abuse and neglect
- b. Infection control concerns about COVID-19
- c. Statutorily required recertification surveys, such as nursing homes
- d. Facilities/hospitals that have a history of infection control deficiencies at the immediate jeopardy level in the last three years

**Table 1. Epidemiologic Risk Classification for Asymptomatic Healthcare Personnel Following Exposure to Patients with Coronavirus Disease (COVID-19) or their Secretions/Excretions in a Healthcare Setting, and their Associated Monitoring and Work Restriction Recommendations**

<b>Epidemiologic Risk Factors</b>	<b>Exposure Category</b>	<b>Recommended Monitoring for COVID-19 (until 14 days after last potential exposure)</b>	<b>Work Restrictions for Asymptomatic HCP</b>
<b>Prolonged close contact with a COVID-19 patient who was wearing a facemask (i.e., source control)</b>			
HCP PPE: None	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection	Low	Self with delegated supervision	None
HCP PPE: Not wearing gown or gloves <sup>a</sup>	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator)	Low	Self with delegated supervision	None
<b>Prolonged close contact with a COVID-19 patient who was not wearing a facemask (i.e., source control)</b>			
HCP PPE: None	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing a facemask or respirator	High	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing eye protection <sup>a</sup>	Medium	Active	Exclude from work for 14 days after last exposure
HCP PPE: Not wearing gown or gloves <sup>a,b</sup>	Low	Self with delegated supervision	None
HCP PPE: Wearing all recommended PPE (except wearing a facemask instead of a respirator) <sup>b</sup>	Low	Self with delegated supervision	None

HCP: healthcare personnel; PPE: personal protective equipment

<sup>a</sup>The risk category for these rows would be elevated by one level if HCP had extensive body contact with the patients (e.g., rolling the patient).

<sup>b</sup>The risk category for these rows would be elevated by one level if HCP performed or were present during a procedure likely to generate higher concentrations of respiratory secretions or aerosols (e.g., cardiopulmonary resuscitation, intubation, extubation, bronchoscopy, nebulizer therapy, sputum indication). For example, HCP who were wearing a gown, gloves, eye protection and a facemask (instead of a respirator) during an aerosol-generating procedure would be considered to have a medium-risk exposure.

Adapted from the Centers for Disease Control and Prevention, <https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-risk-assesment-hcp.html#table1>