

WASHINGTON STATE EXPECTING  
MORE COMMUNITY SPREAD

# COVID-19 Outbreak in Nursing Home Includes HCW Infection, Resident Deaths

*Gary Evans, Medical Writer, Relias Media*

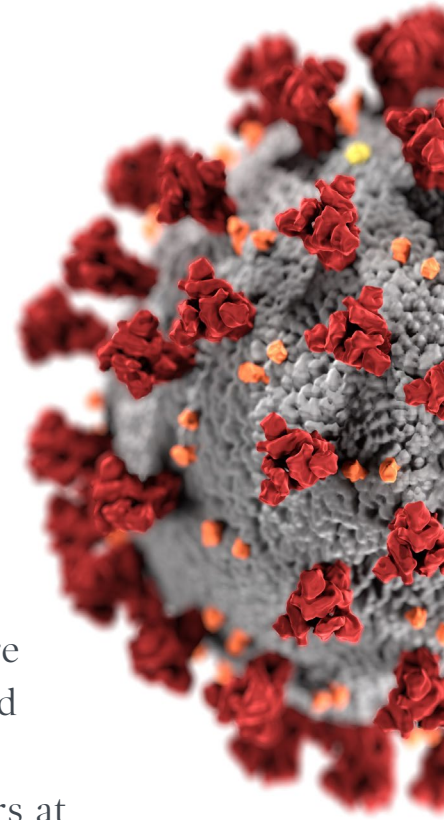
An outbreak of novel coronavirus COVID-19 at a long-term care facility near Seattle has killed at least five elderly residents and infected two healthcare workers. The situation was changing rapidly as this report was filed, but other residents and workers at the facility were under investigation for COVID-19 infection. More cases were expected as the Seattle area is experiencing the largest community outbreak in the United States.

“There are approximately 108 residents at the facility and approximately 180 staff,” Jeff Duchin, MD, public health officer for Seattle and King County said at a recent press conference.

“Among the residents, we have reports that approximately 27 have symptoms, and among the staff approximately 25. We are working with CDC regarding isolation, and all of these people will be tested. We will take every step to minimize exposure to others.”

The 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 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 undergoing care at home.

As of March 4, there were 27 cases of the coronavirus and nine deaths in the Seattle area. It is expected that more cases will be identified in the area as testing becomes more available and



*Image from  
CDC, via  
Unsplash*

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capacity expands. Efforts were underway to expand ICU capacity at area hospitals and convert a hotel to house those who test positive. Broader social mitigation tactics like school closures had not been resolved as this report was filed.

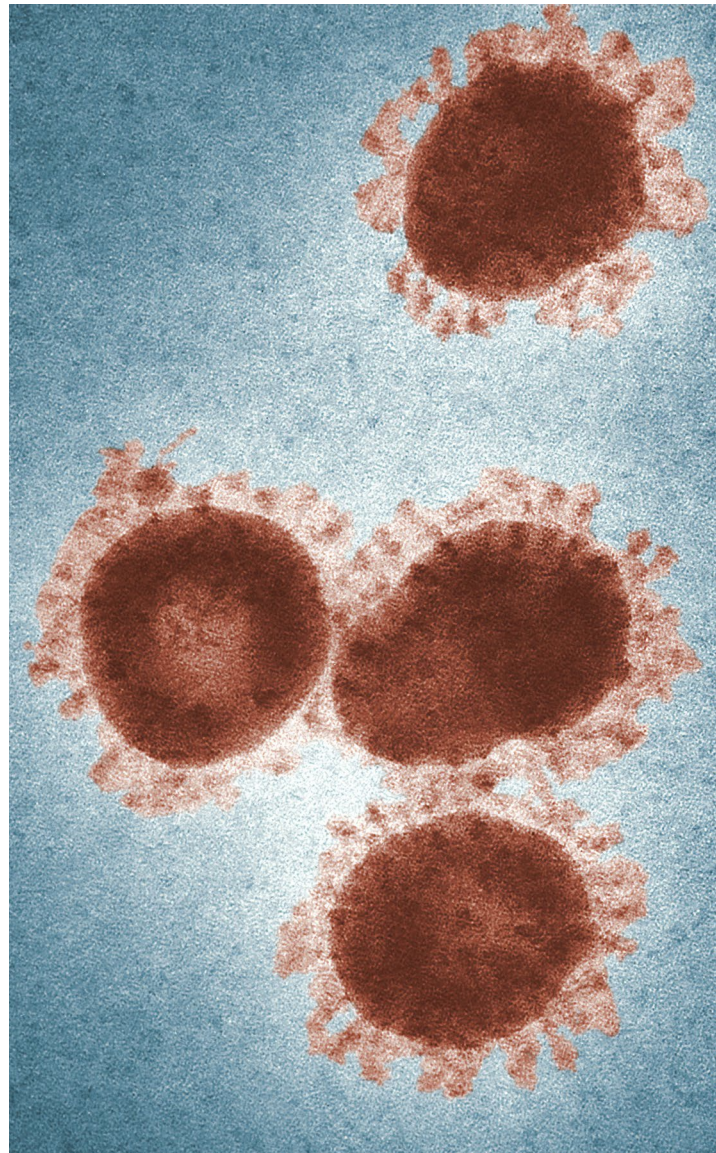
At least six COVID-19 patients died at EvergreenHealth in Seattle after they were admitted with life-threatening respiratory conditions like severe pneumonia. The hospital had 29 patients under investigation as of March 2, said Ettore Palazzo, MD, chief medical and quality officer at EvergreenHealth. The hospital has added more rooms with negative pressure air flow, and healthcare personnel are wearing the full regalia of personal protective equipment (PPE).

The cases were found partly because of an expanded protocol to test seriously ill people with unexplained pneumonia, regardless of travel history. If outbreaks hit other communities, this is likely to become the norm, as travel history can no longer be linked to local person-to-person spread.

### COMMUNITY SPREAD EMERGING

The outbreak represents the first COVID-19 deaths in the United States, and the first infected healthcare worker. The reports from Washington follow others of community spread in Oregon and California. Initially, there was a glitch in the CDC test kits, but that has been corrected, and thousands are being distributed nationwide. This likely will reveal many undetected cases as the bottom of the iceberg becomes more defined, and the most seriously ill are no longer the bulk of identified infections.

With cases of community spread of novel coronavirus in several states as this report was filed, employee health professionals must prepare for the next phase of what increasingly appears to be a pandemic of COVID-19. However, more than 80% of infections are mild or moderate, while the elderly with underlying conditions remain at greatest risk.



*Image from CDC, via Unsplash*

The cases in Washington bring the total U.S. diagnoses to at least 120 in 12 states, with nine deaths. As of March 1, 2020, the World Health Organization reported COVID-19 cases in 53 countries, with 91% of the more than 87,000 cases in China.<sup>2</sup> There were 3,736 cases in South Korea, 1,835 in Italy, and 239 in Japan. Given this global pressure, the CDC is essentially saying that community spread in the United States is inevitable.

“We expect we will see community spread in this country,” Nancy Messonnier, MD, director of the CDC National Center for Immunization and Respiratory Diseases, said at a recent press conference. “We will maintain as long as practical a dual approach where we continue measures to contain this disease, but also employ strategies that minimize the impact on communities.”

Under this scenario, the method of case identification and contact tracing could shift to broad mitigation techniques like social distancing and school closings. One driving factor in the CDC assessment is community spread in countries beyond China.



“The spread in other countries has certainly raised our level of concern and the expectation that we will have community spread here,” she said.

It is clear that community spread will complicate efforts to identify cases, and heighten the risk of occupational exposures to an unsuspected patient.

“It is going to be much more difficult to separate [COVID-19] from everything else that causes fever and respiratory symptoms,” said Allison McGeer, MD, director of infection control at Mount Sinai Hospital in Toronto. “That could present a very significant challenge to protecting healthcare workers. Say a case comes to a hospital for a reason that is completely unrelated to novel coronavirus but happens to be incubating it and develops illness in the hospital. Your go-to diagnosis in a post-op patient who develops fever is not novel coronavirus.”

## ASYMPTOMATIC PATIENTS

Moreover, there are reports from China of asymptomatic patients diagnosed 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>3</sup>

The authors also cited the case of a patient who traveled from Shanghai to attend a meeting in Germany. The patient was asymptomatic until the flight back to China. Two of the patient’s close contacts were infected, and two additional people at the meeting acquired the coronavirus without close contact. The authors also cited an asymptomatic 10-year-old boy who was found to have unusual lung images and markers of the disease in 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.

Eye protection has traditionally been a weak link in PPE, with exposures to the unprotected eyes frequently cited in surveillance systems. Chinese researchers reported a medical expert who visited the epicenter at Wuhan later developed conjunctivitis of the lower left eyelid and the onset of fever.

“The individual tested positive for COVID-19, suggesting its tropism to nonrespiratory



mucosal surfaces, thus limiting the effectiveness of face masks,” the authors reported.

This latter case underscores why healthcare workers must wear eye protection in the form of goggles or face shields for suspected cases of this coronavirus.

“In 2018, 66.9% of all mucocutaneous exposures reported by the International Safety Center were extremely high risk — occurring to the eyes, nose, and/or mouth,” says Amber Mitchell, DrPH, MPH, CPH, director of the center and its longstanding Exposure Prevention Information Network (EPINet).

Of those exposed, only 15.5% were wearing eye protection, face shields, or surgical masks, she adds.

“The eye protection is easy to forget about, but if people cough into your unprotected eyes, you have tear ducts that lead to the back of your throat,” says Michael Bell, MD, deputy director of the CDC Division of Healthcare Quality Promotion. “It’s something that is easily forgotten, and we keep reminding people it is certainly a vulnerability.”

Bell clarifies that safety glasses do not provide the sufficient eye protection for the emerging coronavirus. The CDC recommends goggles and/or face shields. “Unfortunately, safety glasses do not provide the wrap-around extension that we would prefer,” Bell says. “You can imagine if they were to slide down your nose, your eyes would be somewhat exposed, so that would not be an option.”

## SUPPLY WOES

As the situation continued to escalate, clinicians were focusing on identifying patients who have traveled to China, Japan, Iran, South Korea, and Italy, or who had contact with a known suspected case. This applies to healthcare workers, as listed on the screening form used at Tampa (FL) General Hospital. (See questions from following page.)

“If it spreads in the community, we have a pandemic flu plan where we would set up triage outside the hospital if we had to,” says JoAnn Shea, ARNP, MS, COHN-S, director of employee health and wellness at Tampa General Hospital.

Under pandemic planning, sick workers, or “team members” as they are called at the hospital, also would be triaged outside the hospital.

“At this time, we are screening any team members who have gone to any of



# TAMPA GENERAL HOSPITAL COVID-19 SCREENING QUESTIONNAIRE

Tampa General Hospital developed a screening tool to use for patients and healthcare workers suspected of COVID-19 infection. Patients can be screened via phone or in person. The form includes these questions—

*Have you returned from a visit to China, Japan, Iran, South Korea, or Italy?*

*Have you been in contact with a person who has returned from one or more of the above countries in the past 14 days who also exhibits respiratory symptoms (fever, cough, difficulty breathing)?*

**IF YOU ANSWERED NO TO ALL THE ABOVE QUESTIONS  
YOU DO NOT NEED TO CONTINUE**

**IF YOU ANSWERED YES TO ANY OF THE ABOVE QUESTIONS  
PLEASE COMPLETE ALL SECTIONS BELOW**

*Do you currently feel ill or have any respiratory symptoms or fever?*

**IF YES, PLEASE ANSWER BELOW**

*Have you had any of the following during the past 14 days:*

*Fever of 100°F or greater. If yes, when did the fever start?*

*Do you have a cough? If yes, when did the cough start?*

*Do you have difficulty breathing? If yes, when did this start?*

*Do you have any other symptoms? If yes, describe.*

*Describe countries and cities you or contact person visited with dates.*

*Describe contact you had with person with COVID-19.*

*Date you or contact person returned to U.S.*

## TEAM MEMBER HEALTH SECTION

*Temperature*

*Blood pressure*

*Pulse*

*Respiration*

*Team member/  
healthcare worker  
symptomatic. Referred  
to team member  
director/manager. Not  
cleared to work.*

*Team member placed  
on administrative leave  
and advised to self-  
quarantine. Must return  
to TM Health clinic  
for clearance.*

*Team member cleared to  
work per team  
member director.*

*Call Florida  
Department of Health to  
determine if COVID-19  
testing should be  
performed.*

those countries,” Shea says. “If they have gone to any part of China, we pay them to stay home for 14 days. They can’t work. If they were around somebody who returned from those countries and they became symptomatic within 14 days, we would probably quarantine them for 14 days also. We have had to self-quarantine about three people so far.” To the degree possible, these situations are handled over the phone to avoid sick workers coming into the hospital.

A common theme in pandemic planning is ensuring a supply of PPE, which means talking frequently 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,” says 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 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, Shea and colleagues decided to secure supplies to ensure they were not being used indiscriminately or taken home. Some are placed 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 patients were given plastic bags to cover and reuse them with the same patient for up to 12 hours. This 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.

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 that could go into a patient’s room, but now because of this, we have fit-tested all of the security guards.”

Respirator fit-testing was performed in all 17 ambulatory care clinics, where patients with respiratory symptoms are screened via phone if possible.

“We had to increase our fit-testing quite a bit,” Shea says. “The recommendation [for a suspect coronavirus case] by the CDC is an N95. We are hoping they will change that to a surgical mask, but that has not happened yet. When the CDC changes, we change.”

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. Most were not TB, but you have to wear the N95s.”

However, efforts to limit the number of workers entering 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 explains.

Florida has reported one case in a returning traveler. The Tampa General staff have not had problems with the

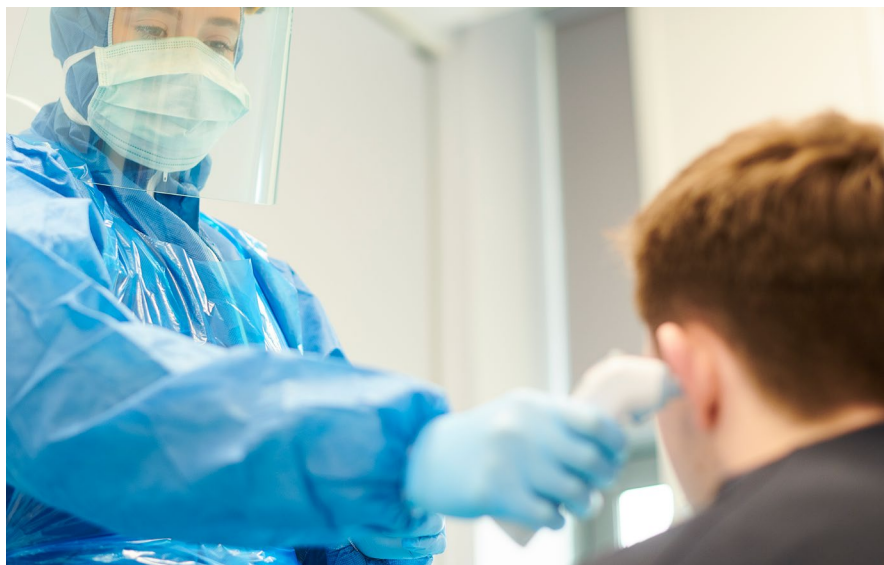
tightening controls on respiratory gear or the ongoing education and preparation, Shea says.

“I think everyone is on board, but if we start seeing cases and there’s no vaccine, then we are going to have challenges. People will get concerned,” Shea notes. “If this continues, we are concerned about our ongoing supply of N95s, although we did order powered air-purifying respirators.”

The CDC is in discussions with its federal partners, including the FDA, to ensure respiratory equipment will be available for healthcare employees.

“Healthcare workers put themselves on the frontline caring for patients, and it certainly is a priority to make sure they are protected,” Messonnier said.

As fate would have it, China manufactures many medical masks and other equipment. “As their ability to produce is tempered by the outbreak, we are concerned that our supply chain may be impacted,” Bell says.





## REMEMBER THE FLU

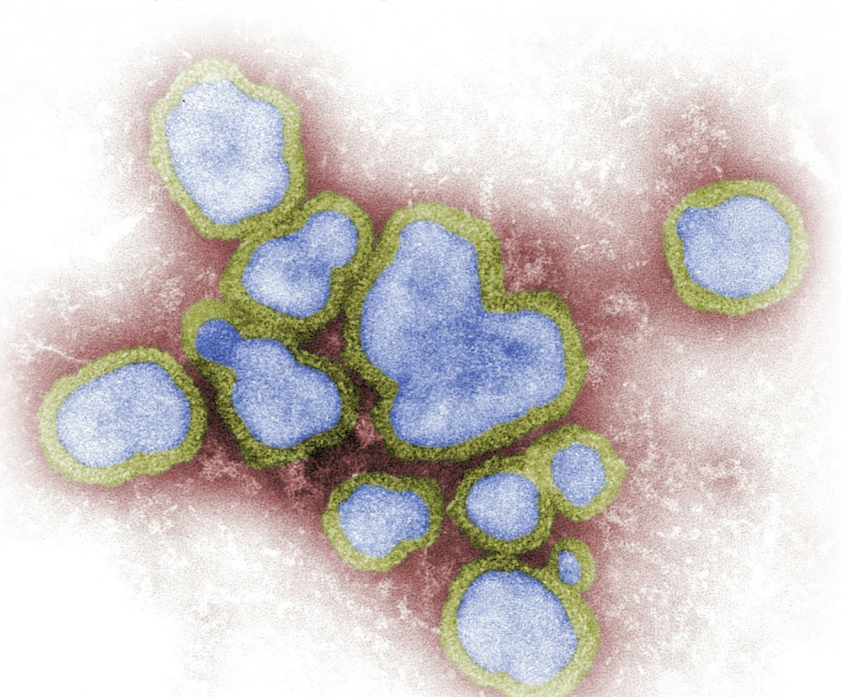
With seasonal influenza now accounting for 250,000 hospitalizations and 12,000 deaths, respiratory measures already are in place at many hospitals. This includes signs reminding patients to cover coughs and sneezes, practice hand hygiene while waiting to check in, and answer questions about travel history.

“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. As soon as we are able, we move them to a private room. We not are just worried about COVID-19, but also transmission of flu and other respiratory diseases.”

Patients are screened at every hospital entrance, including those just coming in for an X-ray or a blood draw. One case of COVID-19 was reported in North Carolina on March 3.

“If we had a case 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. “We also make sure someone doesn’t inadvertently go into the room without the proper personal equipment, and that they don and doff it correctly.”

*Image from CDC, via Unsplash*



While there are a lot unknowns about this emerging coronavirus, Bell notes the key baseline intervention is placing a mask on patients presenting with respiratory symptoms.

“Thing No. 1 is source control,” he says. “Preventing someone from coughing or sneezing openly is an incredibly effective thing. You will see that in all of our guidance, the first thing we promote is getting a simple surgical mask on a patient who is ill. This can have a much bigger impact, from a physics perspective, than trying to put protective equipment on people around them.”

Failure to recognize and mask a suspected case can lead to a hospital outbreak, as happened with the two other major coronaviruses: severe acute respiratory syndrome and Middle East respiratory syndrome.

“We have seen in both of those instances if there is a lot of interaction between patients, visitors, and family members —and if healthcare delivery isn’t done in accordance with appropriate hygiene practices — the hospital can become a location of tremendous amplification,” Bell says.

While the CDC recommends full PPE, particularly for procedures that may generate aerosols, this coronavirus is not thought to spread like a true airborne pathogen.

“Is airborne transmission of this virus happening often?” Bell says. “We don’t have any evidence to suggest that it is. This is not behaving like measles.”

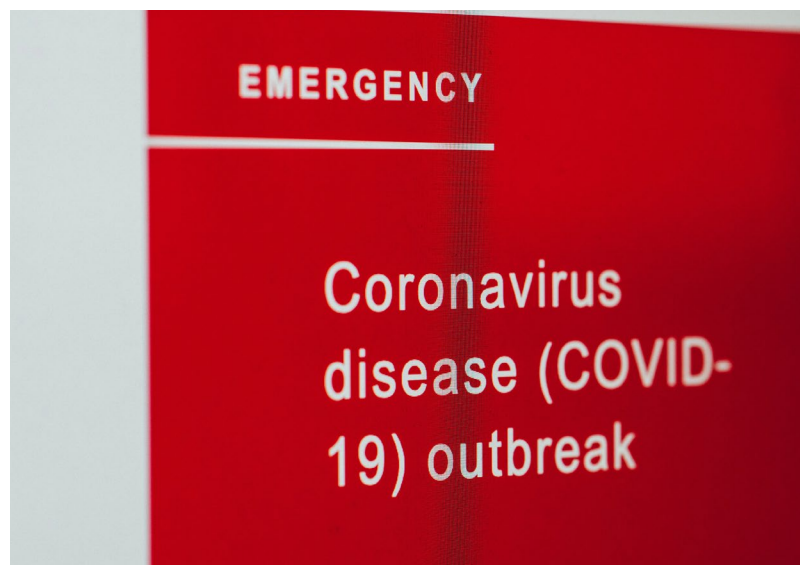
As is often the case, the CDC is taking a conservative approach with a novel pathogen, but may revise recommendations at some point. “We feel like we are being more conservative than absolutely required, and that gives us the ability with ongoing assessments and new information to start planning ahead for how we might change our approach,” Bell explains. “We don’t expect to use airborne isolation and [N95] respiratory protection forever for viruses of this sort.”

Walk-in patients typically seen at clinics and emergency departments should be encouraged to call ahead if they may have been exposed during travel.

“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,” Bell 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 urges. “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 cellphones to bring them in one at a time.”

*Image by Markus Spiske, via Unsplash*



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