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The Impact and Economic Impact of Coronavirus Disease 2019

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Abstracts: CDC is responding to an outbreak of respiratory disease caused by a novel (new) coronavirus that was first detected in China and which has now been detected in almost 70 locations internationally, including in the United States. The virus has been named "SARS-CoV-2" and the disease it causes has been named "coronavirus disease 2019" (abbreviated "COVID-19").

On January 30, 2020, the International Health Regulations Emergency Committee of the World Health Organization declared the outbreak a "public health emergency of international concernexternal icon" (PHEIC). On January 31, 2020, Health and Human Services Secretary Alex M. Azar II declared a public health emergency (PHE) for the United States to aid the nation's healthcare community in responding to COVID-19.

Key word: *Respiratory, Disease, Coronavirus.*

I. INTRODUCTION

CDC is responding to a pandemic of respiration disease due to a singular (new) coronavirus that turned into first detected in China and which has now been detected in nearly 70 places the world over, along with inside the United States. The virus has been named "SARS-CoV-2" and the ailment it reasons has been named "coronavirus disorder 2019" (abbreviated "COVID-19").

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Coronavirus Disease 2019 (COVID-19) Situation Summary

Source and Spread of the Virus

Coronaviruses are a huge own family of viruses which can be common in human beings and lots of different species of animals, along with camels, livestock, cats, and bats. Rarely, animal coronaviruses can infect humans after which spread among human beings which include with MERS-CoV, SARS-CoV, and now with this new virus (named SARS-CoV-2).

The SARS-CoV-2 virus is a betacoronavirus, like MERS-CoV and SARS-CoV. All 3 of those viruses have their origins in bats. The sequences from U.S. Patients are just like the only that China to start with published, suggesting a probable single, latest emergence of this virus from an animal reservoir.

Early on, many of the sufferers at the epicenter of the outbreak in Wuhan, Hubei Province, China had some link to a massive seafood and live animal marketplace, suggesting animal-to-character spread. Later, a developing quantity of patients reportedly did now not have publicity to animal markets, indicating person-to-person spread. Person-to-man or woman unfold was ultimately reported out of doors Hubei and in countries out of doors China, together with in the United States. Some international locations now have obvious network unfold with the virus that causes COVID-19, such as in a few parts of the USA. Community spread manner a few people had been inflamed and it is not known how or in which they became uncovered. Learn what is thought approximately the spread of this newly emerged coronaviruses.

COVID-19 cases in the U.S.

Situation in U.S.

- Imported cases of COVID-19 in travelers have been detected in the U.S.
- Person-to-person spread of COVID-19 was first reported among close contacts of returned travelers from Wuhan.
- During the week of February 23, CDC reported community spread of the virus that causes COVID-19 in California (in two places), Oregon and Washington. Community spread in Washington resulted in the first death in the United States from COVID-19, as well as the first reported case of COVID-19 in a health care worker, and the first potential outbreak in a long-term care facility.

Illness Severity

Both MERS-CoV and SARS-CoV had been recognized to purpose extreme infection in human beings. The whole scientific image with reference to COVID-19 is not absolutely understood. Reported ailments have ranged from mild to excessive, consisting of contamination ensuing in demise. While statistics to this point suggests that most COVID-19 illness is slight, a reportexternal icon out of China indicates severe infection occurs in sixteen% of cases. Older human beings and those with positive underlying fitness conditions like coronary heart disorder, lung disease and diabetes, as an example, seem to be at greater danger of serious infection.

There are ongoing investigations to analyze more. This is a rapidly evolving state of affairs and statistics may be updated because it becomes available.

Risk Assessment

Outbreaks of novel virus infections amongst humans are constantly of public health difficulty. The danger from those outbreaks depends on traits of the virus, inclusive of how well

it spreads between people, the severity of resulting infection, and the medical or different measures to be had to manipulate the impact of the virus (as an example, vaccine or remedy medicinal drugs). The reality that this ailment has precipitated infection, such as contamination resulting in loss of life, and sustained man or woman-to-individual spread is concerning. These elements meet of the criteria of a pandemic. As community unfold is detected in more and more international locations, the sector movements closer toward meeting the third criteria, worldwide spread of the brand new virus.

Reported community unfold of COVID-19 in components of the US increases the level of challenge about the instant risk for COVID-19 for the ones groups. The capability public health danger posed by means of COVID-19 may be very excessive, to america and globally.

At this time, however, most people within the United States could have little instant danger of exposure to this virus. This virus is NOT presently spreading widely within the United States. However, it's miles important to be aware that modern-day worldwide instances suggest it is possibly that this virus will purpose a virulent disease. This is a hastily evolving state of affairs and the hazard evaluation can be up to date as needed.

Current risk assessment:

- For most of the American public, who are unlikely to be exposed to this virus at this time, the immediate health risk from COVID-19 is considered low.
- People in communities where ongoing community spread with the virus that causes COVID-19 has been reported are at elevated, though still relatively low risk of exposure.
- Healthcare workers caring for patients with COVID-19 are at elevated risk of exposure.
- Close contacts of persons with COVID-19 also are at elevated risk of exposure.
- Travelers returning from affected international locations where community spread is occurring also are at elevated risk of exposure.

What May Happen

More cases of COVID-19 are likely to be diagnosed within the coming days, consisting of greater instances within the United States. It's also **possible** that person-to-man or woman unfold will keep to occur, including in groups in the United States. It's possibly that at some point, massive transmission of COVID-19 in the United States will occur.

Widespread transmission of COVID-19 would translate into huge numbers of people desiring hospital treatment on the equal time. Schools, childcare centers, offices, and different locations for mass gatherings may additionally experience more absenteeism. Public fitness and healthcare systems may additionally end up overloaded, with extended quotes of hospitalizations and deaths. Other important infrastructure, inclusive of law enforcement, emergency clinical services, and transportation enterprise will also be affected. Health care providers and hospitals may be crushed. At this time, there's no vaccine to shield against COVID-19 and no medicinal drugs accredited to deal with it. Nonpharmaceutical interventions will be the most critical response method.

CDC Response

Global efforts right now are focused simultaneously on containing the spread and mitigating the effect of this virus. The federal government is running closely with nation, local, tribal, and territorial partners, as well as public fitness companions, to reply to this public fitness chance. The public health response is multi-layered, with the aim of detecting and minimizing introductions of this virus in the United States. CDC is operationalizing all of its pandemic preparedness and response plans, operating on multiple fronts to meet those goals, consisting of particular measures to prepare groups to respond to local transmission of the virus that causes COVID-19. There is an abundance of pandemic guidance developed in anticipation of an influenza pandemic that is being repurposed and tailored for a COVID-19 pandemic.

Highlights of CDC's Response

- CDC established a COVID-19 Incident Management System on January 7, 2020. On January 21, CDC activated its Emergency Operations Center to better provide ongoing support to the COVID-19 response.
- The U.S. government has taken unprecedented steps with respect to **travel** in response to the growing public health threat posed by this new coronavirus:
- Effective February 2, at 5pm, the U.S. government suspended entry of foreign nationals who have been in China within the past 14 days.
- U.S. citizens, residents, and their immediate family members who have been in Hubei province and other parts of mainland China are allowed to enter the United States, but they are subject to health monitoring and possible quarantine for up to 14 days.
- On February 29, the U.S. government announced it was suspending entry of foreign nationals who have been in Iran within the past 14 days.

CDC has issued the following travel guidance related to COVID-19:

- China — Level 3, Avoid Nonessential Travel — updated February 22;
- Hong Kong — Level 1, Practice Usual Precautions — issued February 19;
- Iran — Level 3, Avoid Nonessential Travel — updated February 28;
- Italy — Level 3, Avoid Nonessential Travel — updated February 28;
- Japan — Level 2, Practice Enhanced Precautions — updated February 22;
- South Korea — Level 3, Avoid Nonessential Travel — updated February 24.

CDC also recommends that all travelers reconsider cruise ship voyages into or within Asia at this time.

- CDC is issuing clinical guidance, including:
    - On January 30, CDC published guidance for healthcare professionals on the clinical care of COVID-19 patients.
    - On February 3, CDC posted guidance for assessing the potential risk for various exposures to COVID-19 and managing those people appropriately.
    - On February 27, CDC updated its criteria to guide evaluation of persons under investigation for COVID-19.

- On February 28, CDC issued a Health Alert Network (HAN): Update and Interim Guidance on Outbreak of COVID-19.

- CDC has deployed multidisciplinary teams to support state health departments case identification, contact tracing, clinical management, and communications.
- CDC has worked with the Department of State, supporting the safe return of Americans who have been stranded as a result of the ongoing outbreaks of COVID-19 and related travel restrictions. CDC has worked to assess the health of passengers as they return to the United States and provided continued daily monitoring of people who are quarantined.

This is a picture of CDC's laboratory test kit for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). CDC is shipping the test kits to laboratories CDC has designated as qualified, including U.S. state and local public health laboratories, Department of Defense (DOD) laboratories and select international laboratories. The test kits are bolstering global laboratory capacity for detecting SARS-CoV-2.

- An important part of CDC's role during a public health emergency is to develop a test for the pathogen and equip state and local public health labs with testing capacity.
- After distribution of a CDC rRT-PCR test to diagnose COVID-19 to state and local public health labs started, performance issues were identified related to a problem in the manufacturing of one of the reagents. Laboratories were not able to verify the test performance.
- CDC worked on two potential resolutions to this problem.
- CDC developed a new protocol that uses two of the three components of the original CDC test kit to detect the virus that causes COVID-19 after establishing that the third component, which was the problem with the original test, can be excluded from testing without affecting accuracy. CDC is working with FDA to amend the existing Emergency Use Authorization (EUA) for the test, but in the meantime, FDA granted discretionary authority for the use of the original test kits.
- Public health laboratories can use the original CDC test kit to test for the virus that causes COVID-19 using the new protocol.
- Further, newly manufactured kits have been provided to the International Reagent Resourceexternal icon for distribution.
- Combined with other reagents that CDC has procured, there are enough testing kits to test more than 75,000 people.
- In addition, CDC has two laboratories conducting testing for the virus that causes COVID-19. CDC can test approximately 350 specimens per day.
- Commercial labs are working to develop their own tests that hopefully will be available soon. This will allow a greater number of tests to happen close to where potential cases are.
- CDC has grown the COVID-19 virus in cell culture, which is necessary for further studies, including for additional genetic characterization. The cell-grown virus was sent to NIH's BEI Resources Repository external icon external icon for use by the broad scientific community.

CDC Recommends

- Everyone can do their part to help us respond to this emerging public health threat:
- It's currently flu and respiratory disease season and CDC recommends getting a flu vaccine, taking everyday preventive actions to help stop the spread of germs, and taking flu antivirals if prescribed.
- If you are a healthcare provider, be on the look-out for:
- People who recently traveled from China or another affected area and who have symptoms associated with COVID-19, and
- People who have been in close contact with someone with COVID-19 or pneumonia of unknown cause. (Consult the most recent definition for patients under investigation [PUIs].)
- If you are a healthcare provider or a public health responder caring for a COVID-19 patient, please take care of yourself and follow recommended infection control procedures.
- If you are a close contact of someone with COVID-19 and develop symptoms of COVID-19, call your healthcare provider and tell them about your symptoms and your exposure.
- If you are a resident in a community where person-to-person spread of COVID-19 has been detected and you develop COVID-19 symptoms, call your healthcare provider and tell them about your symptoms.
- For people who are ill with COVID-19, but are not sick enough to be hospitalized, please follow CDC guidance on how to reduce the risk of spreading your illness to others. People who are mildly ill with COVID-19 are able to isolate at home during their illness.
- If you have been in China or another affected area or have been exposed to someone sick with COVID-19 in the last 14 days, you will face some limitations on your movement and activity for up to 14 days. Please follow instructions during this time. Your cooperation is integral to the ongoing public health response to try to slow spread of this virus.

References

[1] https://www.cdc.gov/coronavirus/2019-ncov/summary.html