

## COVID-19 DIGEST

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### *From the Cross-Campus Infectious Diseases COVID-19 Task Force*

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## EPIDEMIOLOGY

### LOCAL

As of today, there are **28,899 confirmed COVID-19 cases and 1,021 deaths in California**. Today, California Governor Gavin Newsom [announced the creation](#) of a 80-member task force to advise on reopening the state, but did not give any dates or deadlines for reopening. [In San Francisco](#), there are **1,058 confirmed COVID-19 cases and 20 deaths**. An update on the MSC South Shelter outbreak is provided below in the interview of Dr. Liz Imbert from the containment team. Today, Mayor London Breed [announced a new mandate](#) that San Franciscans will be required to wear face coverings while running essential errands, seeking healthcare, waiting for or taking transit. People who are exercising outdoors with proper social distancing precautions (running, biking, etc.) are not required to wear face coverings but should carry one with them.

### NATIONAL

There are now over **708,297 cases reported and 36,959 deaths in the United States**. New York State remains the epicenter of the epidemic, both in the United States and worldwide with New York continuing to report more coronavirus cases than any other country worldwide. New York State has 222,284 cases and 7844 deaths to date. Rates of hospitalizations and infections have slowed and Governor Cuomo announced yesterday that the New York State shutdown will be extended to May 15<sup>th</sup>. On Wednesday, the NY Governor also mandated the wearing of face masks in public for all New York residents. **Today we make note of the [eight states in the United States where the governors have resisted issuing statewide "shut down" orders despite the ongoing U.S. coronavirus pandemic](#):** Arkansas, Nebraska, North Dakota, Oklahoma, South Dakota, South Carolina, Utah, and Wyoming. Over [the past week](#), Oklahoma saw a 53% increase in cases, Arkansas saw a 60% jump in cases, and Nebraska reported a 74% increase in cases. South Dakota saw an alarming 205% increase in coronavirus cases. Today in the national scene, President Trump called for "liberation" of states where protestors gathered (mainly without masks) to protest stay-at-home restrictions, including [Michigan and Minnesota](#). President Trump this week also halted U.S. funding to the World Health Organization, with Ireland deciding to [quadruple funding](#) to the international public health organization as a result.

### GLOBAL

There are currently **2,248,029 million cases of COVID-19 and 154,108 deaths** reported around the world. The US continues to lead the world in the total numbers of infections. Germany has been reporting falling numbers of infections, deaths, hospitalizations and ICU admissions and has announced a plan to reopen the country, stating a statistic that, on average, each infected person is spreading the virus to 0.7 other people at this point (with an Ro of >2 reported as the number predicting exponential growth). Chancellor Angela Merkel [announced this week](#) the first steps to ease restrictions, allowing some stores to reopen this coming Monday and high school students to return to classrooms to prepare for or take exams. Yesterday came with [dire warnings from the United Nations](#) on the impact of the COVID-19 pandemic on children. While children are largely spared severe disease from SARS-CoV-2, the United Nations has warned that the social and economic fallout of the pandemic "risk being catastrophic and amongst the most lasting consequences" for children. As schools remain closed, families lose income and the ability to procure food. Moreover, the health needs of children go unmet, with the threat of thousand or even millions of children worldwide being plunged into greater poverty as a result of the pandemic.

## UP TO THE MINUTE DISPATCHES

### Iceland conducts widespread population screening resulting in early response and containment of COVID-19

Iceland conducted an extensive testing campaign which included both targeted testing (symptoms plus travel risk) and population screening (random invitations) to 13,080 individuals. In this [study](#), ~7% of Iceland's population (n=24,562) was tested via these two strategies. With targeted testing, 13% tested positive with 0.7% testing positive in the general population, a proportion which remained stable 20 days later. In the population-screening group, 0/848 children <10 years of age tested positive vs. 100/12,232 persons (0.8%) among those ≥10 years of age. 43% of those who tested via population screening were asymptomatic. Travel and work contacts were identified as a key risk factor early in the epidemic, while exposure to infected family members became most important later in the epidemic. After viral sequence analysis, later cases in Iceland were found to represent new introductions rather than persistent community spread. **Conclusions:** A widespread testing and contact tracing campaign following by isolation helped to curb the epidemic in Iceland. Children were largely spared from infection and asymptomatic infection was common.

### COVID-19 among US Healthcare Workers

This week, several studies highlight COVID-19 among US healthcare workers (HCWs). The [first study](#) examines 121 HCWs in unknowingly exposed to a COVID-19 patient during a 4-day admission in mid-February Northern California hospital. The patient was on standard precautions and underwent multiple aerosol-generating procedures (AGPs). Of 121 exposed HCWs, 43 (35.5%) developed potential COVID-19 symptoms but only 3 (2.5%) had a positive COVID-19 PCR result. Risk factors for acquisition were prolonged patient contact and exposure to AGPs. The [second study](#) examined all COVID-19 cases reported to the CDC between February 12 and April 9, 2020. They identified 9,282 HCWs with COVID-19 accounting for at least 2.9% of all cases in the US. Healthcare occupational status was only available for 15.6% of all COVID-19 cases suggesting that this represents a substantial underestimation. Only 10% of HCW with COVID-19 required hospitalization and amongst those 184 (8-10%) required ICU admission and 27 (0.3%-0.6%) died. A recent [report](#) found that as of April 15, 2020, there have been 2,789 confirmed COVID-19 cases among HCWs in California.

**Conclusion:** HCWs are at increased risk for acquisition of COVID-19 infection and it remains crucial to make all possible efforts to ensure their health and safety.

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## FAQ

### 1. What neurological manifestations are seen in patients with COVID-19?

Several reports were published this week on neurological findings in patients with COVID-19. A Chinese [study](#) described 214 patients and found that 36.4% had neurologic manifestations which included dizziness (16.8%), headache (13.1%), myopathy (10.7%), impaired consciousness (7.5%), taste impairment (5.6%), smell impairment (5.1%), acute stroke (2.8%), and seizure (0.5%). A second French [study](#) of 58 ICU patients found agitation (69%), corticospinal tract signs such as clonus (67%), and confusion (65%). 13 patients had MRIs which revealed leptomeningeal enhancement in 62% and acute stroke in 15%. 7 patients had an LP – all were normal and negative for COVID-19 by PCR. **Conclusion:** Neurologic findings are common in patients with severe COVID-19. Possible mechanisms include hypercoagulability, inflammation, exacerbation of underlying vascular comorbidities, or direct CNS infection. However, only a single [case](#) of meningoencephalitis with a positive CSF PCR has been published to date.

### 2. Where do we stand in the development of a COVID-19 vaccine?

In response to the global COVID-19 pandemic, the global vaccine R&D effort has moved at an unprecedented speed. Just over two months after the genetic sequence of SARS-CoV-2 was published (Jan 11), the first vaccine candidate

entered human clinical testing ([mRNA-1273](#), Moderna). [As of last week](#), there are 78 confirmed exploratory vaccine candidates. Most of the vaccine candidates aim to induce neutralizing antibodies to the spike (S) protein which mediates attachment of the virus to the host cell and facilitates cell entry. [A diverse array of technologies](#) is being used to develop candidates. 7 have moved into clinical development, 5 of which have early phase clinical trials, [which have opened for recruitment](#). **Conclusion:** Based on the scale and speed at which vaccine development is proceeding, there is an indication that a vaccine could be available by early 2021 under emergency use protocols.

## FRONTLINE: Interviews with Leaders Responding to the COVID-19 Epidemic

*From the editors: We are starting a new feature of conversations with faculty working on the front line.*

*Dr. Elizabeth Imbert (photographed) was seconded to temporarily work for the Department of Public Health to assist in their efforts at our City's Shelters and is our featured guest interviewee today.*

### **What is your role title at UCSF/ZSFG and how did you start working full time for the SFDPH during the COVID-19 epidemic?**

*I am an Assistant Professor in the Division of HIV, ID and Global Medicine at ZSFG and the Director of the POP-UP Program at Ward 86, a program that aims to reduce health inequities among people living with HIV who experience homelessness and unstable housing. Two weeks ago, I started to work in the San Francisco Department of Public Health (SFPDH) Departmental Operations Centers (DOC) Containment Branch on the shelter health response*



### **Can you describe the outbreak of COVID-19 at the homeless shelter in San Francisco?**

*From the time SFDPH opened its emergency operations on Jan. 21, protecting vulnerable populations including people experiencing homelessness (PEH) and preparing our response has been one of the top priorities of the department. When the first two cases were confirmed at Multi-Service Center (MSC) South, which is San Francisco's largest shelter, we were able to immediately launch contact tracing investigations and test symptomatic patients. We quickly found several cases in close proximity in the shelter, at which point we decided to deploy mass testing and offer all patients an isolation and quarantine hotel room. Of the 225 residents and 65 staff at risk for infection, we tested 147 residents and 62 staff. 65% (95/147) of residents and 16% (10/62) tested positive for COVID-19. We learned two important things: the prevalence rate was extremely high, and most of the people testing positive did not yet have symptoms.*

### **What strategies are you taking to provide care for and help prevent further spread and mitigate morbidity and mortality of COVID-19 in patients experiencing homelessness?**

*The entire city is working together to protect the most vulnerable, including PEH, on a population level. DPH is working with Department of Homelessness and Supportive Housing (HSH) on strategies to improve social distancing, implement universal masking, enact heightened infection control practices and train shelter staff to do symptom screening. DPH in partnership with the Human Services Agency has created isolation and quarantine hotels, and DPH is developing medical shelters and recovery centers with wraparound services for patients. DPH and UCSF are trying every approach to expand testing to this population. Other departments have leased hotel rooms and are offering these to PEH who are over 60 or have co-morbidities. The City is adding toilets and hand-washing stations. The COVID-19 situation is rapidly evolving and we are learning every day and making progress. We are united in our commitment to protect those most in need.*

\*Photo of Dr. Imbert by Noah Berger

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**UCSF Hospital Epidemiology and Infection Prevention COVID-19 webpage:**

<https://infectioncontrol.ucsfmedicalcenter.org/ucsf-health-covid-19-resources>

**San Francisco DPH link:** <https://www.sfcdcp.org/infectious-diseases-a-to-z/coronavirus-2019-novel-coronavirus/>

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*Previous digests can be found: [hividgm.ucsf.edu/covid-19](http://hividgm.ucsf.edu/covid-19)  
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