

COVID-19 DIGEST

From the Infectious Diseases Divisions at UCSF, ZSFG and VA

EPIDEMIOLOGY

LOCAL

As of today, there are **43 confirmed COVID-19 cases and 0 deaths*** in San Francisco. Hospitals are seeing more patients seeking evaluation for COVID. It is important to note that **we are still in influenza “season” in San Francisco**. As of last week, 10-20% of samples sent to labs are positive for influenza. *from [SF DPH](#)

NATIONAL

Latest US estimates are **4,226 cases and 75 deaths.** * Testing is expanding to include drive through options in many cities, but overall, capacity still remains inadequate. Health systems are preparing for a surge in cases and have been limiting hospital visits, non-essential surgeries and clinic visits. There is a massive transition to telemedicine in many health systems in an effort to maintain the healthcare workforce. *from [CDC](#)

GLOBAL

There are over **196,00 cases** of COVID-19 and **7,800 deaths globally**. Europe is now the epicenter of the epidemic; with the greatest number of cases in Italy. The United Kingdom, slow to implement aggressive public health measures has experienced a rapid increase in cases and reports around **1,950 cases** to date. *from Johns Hopkins CSSE

Public Health Action:

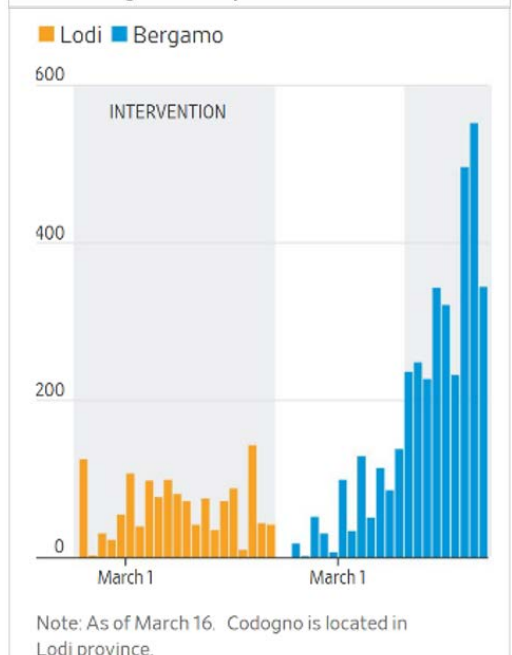
Over the last 72 hours, there has been **unprecedented actions** taken by countries around the world (e.g. **border closings**, mandatory 14 day **quarantines** of all persons entering a country, regional quarantines). After a period of inaction, the US Federal government has put in place multiple aggressive measures (e.g. closing border to Europeans) to contain the spread of COVID-19. San Francisco and surrounding counties extended their early measures (limitations on gathering size and school closure) to **“shelter in place”**—a new term for most persons. The three week “shelter in place” public order requires citizens to stay at home unless they are providing (e.g. health care) or executing (e.g. food purchase) essential services.

Some **optimistic news from Italy**: A region (Lodi) that implemented strict adherence to measures consistent with “shelter in place” in mid -February has contained cases vs a region (Bergamo) that did not. See Figure 1 (graph from Wall Street Journal article, “Lockdown of Recovering Italian Town Shows Effectiveness of Early Action”)

DAILY UPDATES

<https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

Figure 1. COVID-19 cases in Lodi and Bergamo regions in Italy



COVID TESTING CAPACITY

COVID-19 PCR testing at UCSF Medical Center is currently at 80 tests/day and is expected to increase to 200-500 tests/day within a week. Currently, NP/OP swab kits are a limiting reagent. At Zuckerberg San Francisco General Hospital, capacity for inpatient samples is being met; outpatient testing remains limited. The turnaround for test results

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is 6-12 hours at UCSF and 24hours (from DPH) at ZSFGH and 3-5 days when sent to private labs who are experiencing extreme backlogs.

PATIENT EVALUATION

UCSF Health updated its adult inpatient/ED algorithm, developed workflow for the ambulatory setting, and is working to provide clarification of points around PPE use.

- **Updates in testing:** In an effort to maximize sensitivity of testing while conserving testing materials, they now recommend either a single nasopharyngeal (NP) swab when using a single flocked swab kit or when using a dual flocked swab kit, place the NP swab and oropharyngeal swab into a single vial. Also, all respiratory viral testing (COVID-19, RVP, rapid flu/RSV) should be done on the same swab. Order should be either for RVP or rapid flu/RSV but not both.
 - **Workflow for patients with respiratory symptoms in the ambulatory setting:** Depending on patients symptoms and risk factors, they may be triaged to either home self-monitoring, a UCSF Health respiratory screening clinic, or the emergency department. Details can be found on UCSF Health link below
 - **PPE for patients being evaluated for COVID-19 or diagnosed with COVID-19:**
 - **Routine care for patients who are not receiving aerosol-generating interventions:** Don surgical mask/eye protection plus gloves/gown
 - **Obtaining an NP+/-OP swab:** Don (N95 mask/eye protection or PAPR) plus gloves/gown
 - **Patient receiving nebulized medication or other discrete aerosol-generating procedures:** Don (N95 mask/eye protection or PAPR) plus gloves/gown (1-hour after procedure is complete can return to routine care recommendations)
 - **Patient intubated, high-flow nasal canula, non-invasive ventilation, or tracheostomy in place:** Don (N95 mask/eye protection or PAPR) plus gloves/gown (in negative pressure isolation)
 - **Cohorting** has begun of inpatients with COVID-19 to a single floor when possible
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FAQ

1. What is the sensitivity of the PCR test to diagnose COVID-19?

The sensitivity of a single nasopharyngeal (NP) swab PCR is ~75-80%. Sampling by pooled NP + oropharynx (OP swab) likely increases sensitivity by another ~ 10%. The addition of a lower respiratory sample (BAL, endotracheal aspirate) may further increase sensitivity.

2. Should steroids be used in the treatment of severe disease?

Presently, there are insufficient data to recommend steroids during ARDS in the setting of COVID-19. One recent small retrospective study (N=201 hospitalized patients in China) published by Wu, et al in JAMA Internal Medicine reported 84 (42%) with ARDS, and a 54% mortality among the 84 patients. Some of the risk factors associated in ARDS/mortality included older age, higher neutrophil count and organ dysfunction. Higher fever (>39) was associated with higher risk (1.77) of ARDS and lower mortality rate (0.41) . Among, the 84 patients with ARDS, steroids were used in 31%.The hazard ratio death was lower (0.38, 95% CI 0.20-0.72) in steroid recipients. Despite this association, it is not possible to assess the effect of steroids in absence of a randomized comparison; other studies have also shown prolonged viral shedding in the presence of steroids.

3. What treatment trials are up and going at ZSFG and UCSF hospitals?

We have 2 active trials here; there are many trials ongoing around the world. Both ZSFG and UCSF are participating

Update: March 17, 2020

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in an NIH sponsored double blinded, placebo controlled RCT of IV remdesivir (nucleoside analogue that inhibits viral RNA polymerase) given for up to 10 days to hospitalized individuals with COVID-19 (NCT04280705, UCSF PI Luetkemeyer). Patients are eligible if they have radiographic findings or evidence of hypoxia and are required to have PCR confirmation of COVID-19. More severely ill patients with ARDS may qualify for a study of mesenchymal stromal cells, which may reduce lung injury by targeting several ARDS-triggered pathways to reduce injury and accelerate repair (NCT02097641, UCSF PI Matthay). Please contact the COVID ID service (remdesivir) and Pulmonary/Critical Care (mesenchymal stromal cells) at each site to discuss potential participants or you can reach out to Annie.Luetkemeyer@ucsf.edu or Michael.Matthay@ucsf.edu

4. Are there any prevention trials for COVID ongoing?

Yes, post-exposure prevention trials are being planned, and some are underway. Chloroquine and hydroxychloroquine (Plaquenil) show robust *in vitro* activity against the virus causing COVID-19. This mechanism of action is thought to be interference with viral entry. We will be participating in a study using hydroxychloroquine for household contacts of known COVID-19 cases. Expected start date is late April 2020. Lopinavir/ritonavir (Kaletra) has been used for post-exposure prophylaxis during MERS in a small series, and is being actively investigating for both prophylaxis and treatment in COVID-19. There are many trials ongoing around the world investigating other agents with potential COVID-19 activity for post-exposure prophylaxis.

EDUCATION

The UCSF Task Force can provide updates by ID faculty on COVID-19 to your department, division or team in varying formats: a 15-minute talk, a Grand Rounds, a Q&A session or another format that might suit your group. *For more information or to schedule a session, please contact Chesa Cox at chesa.cox@ucsf.edu.*

INSTITUTIONAL CONTACTS FOR CLINICAL OPERATIONS

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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.sfc-dcp.org/infectious-diseases-a-to-z/coronavirus-2019-novel-coronavirus/>