Coronavirus LTC Collaborative

James McKinnell, MD
Associate Professor, David Geffen School of Medicine, UCLA

1

2

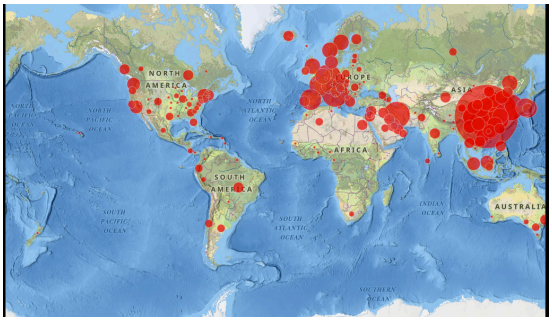
Disclaimers

- This is not the formal opinion of LAC DPH
- Any media who may be on the call, please leave now
- Materials are for clinical consideration and individual providers must do their own reading

2

3

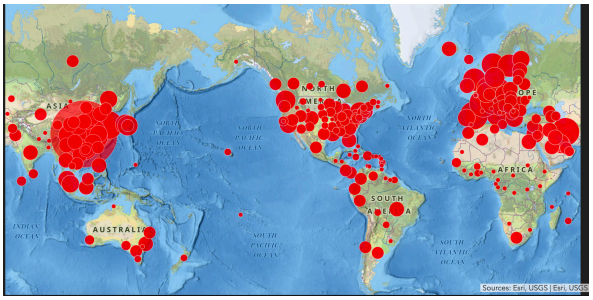
Global Distribution of Cases 3/10/20



3

4

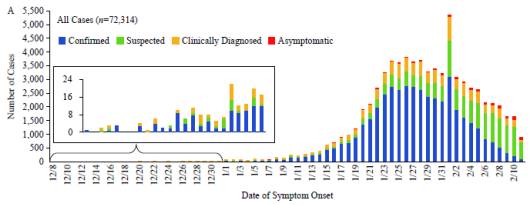
Global Distribution of Cases 3/16/20



4

5

Epidemiological Curves of COVID-19 in China Through February 11, 2020



2020 Feb 17;41(2):145-151. doi: 10.3760/cma.j.issn.0254-6450.2020.02.003.

5

6

Critical Care Utilization for the COVID-19 Outbreak in Lombardy, Italy

Early Experience and Forecast During an Emergency Response

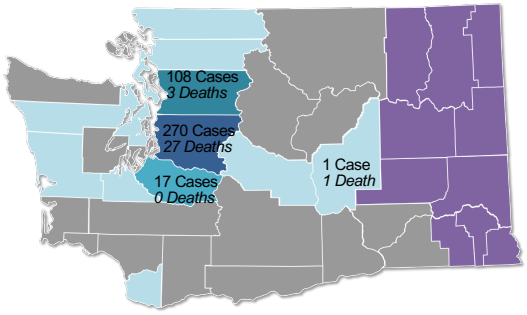
Giacomo Grasselli, MD[1,2]; Antonio Pesenti, MD[1,2]; Maurizio Cecconi, MD[3]
Author Affiliations | Article Information
JAMA. Published online March 13, 2020. doi:10.1001/jama.2020.4031

- Lombardy Italy 10 Million People
- 556 ICU admissions over 15 days

6

7

Washington State 3/12/20



7

8

Washington State 3/12/20

Sex at Birth	Percent of Cases in Washington
Female	57%
Male	40%
Unknown	3%

Tables display number of laboratory confirmed and presumptive positive COVID-19 cases in Washington State by age group. Data are preliminary and presumptive positive tests are subject to change after confirmatory testing.

Age Group (years)	Percent of Cases in Washington
<19	2%
20-29	5%
30-39	9%
40-49	12%
50-59	13%
60-69	16%
70-79	18%
80+	24%

8

9

Washington State 3/12/20

Cases by Sex

Sex at Birth	Percent of Cases in Washington
Female	57%
Male	40%
Unknown	3%

Tables display number of laboratory confirmed and presumptive positive COVID-19 cases in Washington State by age group. Data are preliminary and presumptive positive tests are subject to change after confirmatory testing.

Cases by Age

Age Group (years)	Percent of Cases in Washington
<19	2%
20-29	5%
30-39	9%
40-49	12%
50-59	13%
60-69	16%
70-79	18%
80+	24%

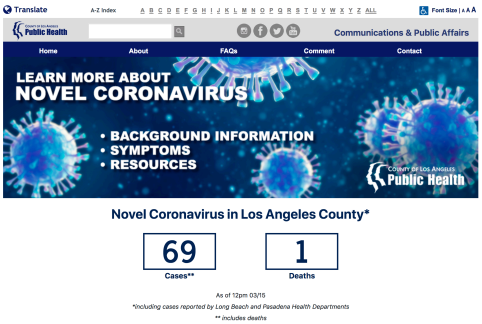
58% were ≥ 60 years

https://www.doh.wa.gov/emergencies/coronavirus

9

10

LAC DPH



10

11

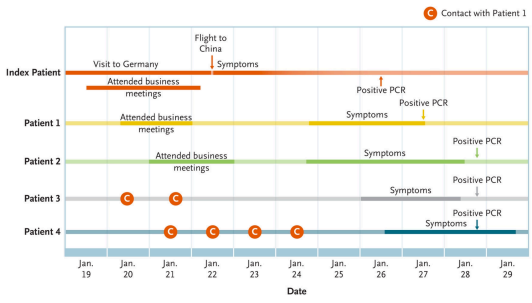
Disease Basics About COVID-19

- How infectious is it?
- Incubation and Transmission
- How Long is Someone Infectious?
- Can transmission occur before symptom onset?
- How long can someone remain infectious after illness?

11

12

Asymptomatic Transmission Can Occur

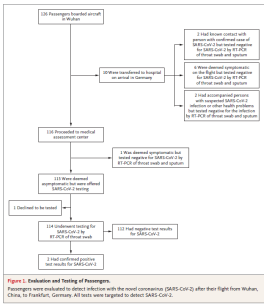


Letter to the Editor NEJM, https://www.nejm.org/doi/full/10.1056/NEJMc2001468

12

13

Asymptomatic Infection --- Germany



- 7 Day Observation
- 2/114 Passengers Positive
- 1 person had faint rash and mild pharyngitis

13

14

Research Letter ONLINE FIRST FREE

March 11, 2020

Detection of SARS-CoV-2 in Different Types of Clinical Specimens

Wenling Wang, PhD[1]; Yanli Xu, MD[2]; Ruqin Gao, MD[3]; et al

Author Affiliations | Article Information

JAMA. Published online March 11, 2020. doi:10.1001/jama.2020.3786

- Live Virus detected in stool, so fecal oral transmission may contribute

Jama accessed March 16

14

15

CORRECTED PROOF

Consistent Detection of 2019 Novel Coronavirus in Saliva FREE

- Viable virus to Hospital Day 10?

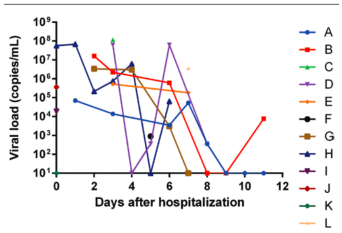


Figure 1. Saliva viral load in patients with 2019 novel coronavirus infection. For this figure, specimens with undetected viral load were assigned a value of 10^1.

CID accessed March 16, 2020

15

16

Clinical Presentation

16

17

Symptoms and Presentation

- Classically Fever and Respiratory Disease
- Fever plus diarrhea or other presentations have been described
- Typically Gradual onset of dyspnea, followed by rapid respiratory decompensation
- May represent brisk cytokine response – see treatment below

17

18

Epidemiologic Characteristics of COVID-19 Cases in China (as of February 11, 2020)

- 72,314 people diagnosed with COVID-19
- 44,672 people with confirmed COVID-19
- Clinical characteristics/outcomes among confirmed cases
  - Majority aged 30–69 years (77.8%) and male (51.4%)
  - 81% of infections are classified as mild[1]
  - 13.8% as severe[2]
  - 4.7% as critical[3]
  - 2.3% died

1.Mild included pneumonia and non-pneumonia cases
2.Severe was characterized by dyspnea, respiratory frequency ≥ 30/minute, blood oxygen saturation ≤93%, PaO2/FiO2 ratio <300, and/or lung infiltrates >50% within 24–48 hours
3.Critical cases were those that exhibited respiratory failure, septic shock, and/or multiple organ dysfunction/failure

2020 Feb 17;41(2):145-151. doi: 10.3760/cma.j.issn.0254-6450.2020.02.003.

18

19

Natural History of 138 Hospitalized Patients with COVID-19 in Wuhan, China

- Median time from symptom onset to:
  - Dyspnea = 5 days (IQR: 1-10 days)
  - Hospitalization = 7 days
  - ARDS = 8 days
- Clinical Outcomes
  - 26% required ICU care
  - 16% developed ARDS
  - 4% died
- Median length of hospital stay: 10 days

https://jamanetwork.com/journals/jama/fullarticle/2761044

19

20

COVID-19 in Hospitalized Children Aged <1 Year --- China

- From Dec 8, 2019 to Feb 6, 2020:
  - 31,211 confirmed COVID-19 cases and 637 fatalities
  - 9 confirmed COVID-19 cases in children aged <1 year
- Characteristics of 9 children
  - Aged 1 month to 11 months; 7 (77%) female
- Symptoms
  - Fever (4), mild upper respiratory tract symptoms (2)
  - 1 with no symptoms (household contact to confirmed case)
  - No information on symptoms (2)
- Outcomes – none required hospitalized; no severe illness

20

21

Radiographic Abnormalities with COVID-19

- Typically a bilateral pneumonia

- From 1st imported COVID-19 case in Canada
- 56 year-old man who presented with mild pneumonia

21

22

Treatment Options?

22

23

DON'T USE BIPAP!!!!!!

Intubate!!!

23

24

Remdesivir

- Remdesivir is a novel antival
- Not approved for Medical Use
- Trial for Ebola in Kivu - less effective than monoclonal antibodies, but safe for use.
- Used in Washington for Compassionate use and ongoing clinical trial
- Considered First Line Treatment by many

24

25

Hydroxychloroquine

- Chloroquine/Hydroxychloroquine has antiviral activity against SARS CoV-2
- Hydroxychloroquine 400 mg po qDay x 5 days?
  - LA County HAI-ARC
  - Stanford University
  - Others
- Decompensated HF, Prolonged QT may be problematic

25

26

Tocilizumab

- Cytokine Release Syndrome Treatment
- IL-6 Receptor Blocker
- Requires measurement of IL-6 levels
- Limited application due to limited clinical experience
  - Cedars Sinai

26

27

No Proven Treatment, but?

- Steroids for severe disease likely a bad idea
- Lopinavir/Ritonavir plus rifampin?
- Darunavir/Cobicistat
- Alpha interferon inhaled 5 million units BID
- Faviprivir plus interferon alpha ChiCTR2000029600
- Faviprivir plus Baloxivir ChiCTR2000029544

Yu et al, Microbes and Infection, 2020, Jin et al. Military Medical Research, 2019

27

28

Too Little Data Available for Strong Recommendations – Do your reading.

28

29

Stopping Transmission Based Precautions and Testing

29

30

Current Rules to Discontinue Isolation

- Case Resolution and two negative tests > 24 hours apart

30

31

Testing Capacity in LA County

- LACDPH capacity to test is being stretched
  - Prioritizing Healthcare Workers and Outbreaks
  - No Test of Cure/Clearance Testing
- UCLA running samples
- Commercial Testing Through Lab Corp and Quest
  - Capacity for testing likely will be limited, if not already

31

32

Testing Capacity in LA County

- Roche High Throughput system 1,000/day – Supplies?
  - UCSD
  - UC-Davis
  - Kaiser Chino Hills
- Biofire and others working on tests
- Other options in development

32

33

Current Rules to Discontinue Isolation

- Two negative tests > 24 hours apart
- 14 days since symptom onset and >72 Hours without fever
- If no COVID cases in your building, consider droplet precautions after admission
- If COVID cases, admit to quarantine units

33

34

Outbreak Mitigation Strategies

34

Things you already should have done:

1. Raise awareness about COVID-19 prevention through education
2. Develop your communication tools
3. Inventory necessary supplies (PPE, alcohol-based hand sanitizer)
4. Develop a process for screening HCP for illness to ensure staff do not come to work with symptoms
5. **Discourage visitation** to the facility; Prohibit symptomatic and high-risk visitors
6. Limit group activities in the facility and field trips
7. Promptly identify residents with symptoms of respiratory infection
   - Implement Transmission-Based Precautions, including room restriction
   - HCP must use appropriate PPE, including eye protection
8. Notify your local health department about suspected COVID-19 and any clusters of respiratory infections

35

Things you already should have done:

1. Sanitize Rental Equipment
2. Consider Zone Cleaning – potentially Three times per day if possible
3. Initiate Daily QAPI meeting SDC/IP, Admin, DON, Providers, Housekeeping supervisors, maintenance director)
4. Review Admission policies
5. Daily meeting staff or communication on stand-up rounds
6. Retain Legal Support
7. Retain Media Consultant
8. Assign someone with clinical knowledge and good communication to man the phones
9. If working with Public Health or CDC, get full names and contact information

36

Healthcare Personnel (HCP) Monitoring

- Screen all staff (including environmental services, ancillary services, contractors and external providers) at the beginning of their shift for fever and respiratory symptoms.
- HCP with fever (T>100.0), shortness of breath, new or change in cough, or sore throat should put on a facemask and self-isolate at home
  - Encourage ill HCP to contact their provider
  - Decisions about return to work policies should be made in consultation with your local health department.

37

HCP Infection Prevention Strategies

- Restrict non-essential personnel including volunteers and non-essential consultant personnel (e.g., barbers, delivery person) from entering the building
- Be aware that HCP, external consultants and contractors may be working in multiple facilities
  - Keep a record of other facilities where your staff are working

38

39

HCW Practicalities

- CDC rules for the 14-day quarantine may not be possible to implement due to HCW shortage
- Prioritize return to work for HCW at lowest risk for actually having the disease
- Watch for cross facility exposures as HCW may work multiple buildings
- Symptomatic HCW likely to have the disease should be excluded

39

HCP Infection Prevention Strategies That You Can Consider

- Geographically cohort residents, limit cross cohort socialization
- Geographically cohort staff by assigning dedicated staff to specific units
- Work your unit, stay on your unit….
- Encourage Social Distancing, particularly for HCW
- Define your quarantine area if needed

40

Preserving PPE supply in times of significant shortage:

- Prioritize gowns for aerosol-generating procedures (AGPs), care activities where splashes and sprays are anticipated, and high-contact resident care activities[1]
- Implement extended use of eye and face protection (respirator or facemask)
  - Extended use means HCP remove only gloves and gowns (if used) and perform hand hygiene between patients with the same diagnosis (e.g., confirmed COVID-19) while continuing to wear the same eye protection and respirator or facemask (i.e., extended use).
  - HCP must take care not to touch their eye protection and respirator or facemask.
  - Eye protection and the respirator or facemask should be removed, and hand hygiene performed if they become damaged or soiled, or when performing AGPs, and when leaving the unit.

[1]High-contact resident care activities: dressing, bathing/showering, transferring, providing hygiene, changing linens, changing briefs or assisting with toileting, device care or use, wound care

41

42

PPE Practicalities

- Consideration for closure to new admissions depending on severity
- Emergency Supplies are being made available
- No Hand Sanitizer Gel --- Use soap
- No Gowns --- Consider re-usable Cloth Gowns
- No n95 masks --- Use Surgical masks and avoid Aerosol Generating procedures

42

43

What do we do when we have a case?

43

44

Single Respiratory Case

- Contact and Droplet
- Test for Respiratory Pathogens
  - Influenza/RSV or others
  - COVID-19 through commercial labs
- Review all residents
- Environmental Cleaning
- Consider Resident Discharge to home
- Discontinue all community groups events and outings
- Limit staff interacting with affected patient

44

Implementing Transmission-Based Precautions

- For residents with symptoms of respiratory infection:
  - Restrict the resident to their room; have them wear a facemask or cover their mouth and nose with tissues if they must leave the room
- HCP should wear the following PPE:
  - Facemask (or respirator if fit-tested and the suspected diagnosis includes COVID-19 or other pathogen requiring a respirator)
  - Gown
  - Gloves
  - Eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face)
    - Personal eyeglasses and contact lenses are NOT considered adequate eye protection.
- Airborne Infection Isolation Rooms (AIIRs) are not required

45

46

Two or More Respiratory Cases

- Notify Public Health for expedited testing
- Define your quarantine area
  - Will depend on your actual building
- Cohort Staff and do not interact with non-quarantined patients
- Notify EMS for all transfers

46

47

After Positive Confirmation

- Presume Widespread distribution
- Move Symptomatic Patients into your quarantine area
- Confirmed patients into same room is okay
- Discharge anyone who can go home
- Notify HCW that they have been exposed
- Notify Visitors
- Notify Families
- Notify Hospitals for all transfers in the last 14 days

47

48

HCW Symptomatic in the Building

- HCW exposures have exposed patients at multiple buildings
- Call DPH

48

49

Hospital Admissions

- CDC recommends two negative tests > 24 hours apart
- As testing is largely unavailable, 14 days since symptom onset and >72 Hours without fever is a current working option
- New York State has suggested 7 days since symptom onset and >72 Hours without fever
- If no COVID cases in your building, consider droplet precautions after admission
- If COVID cases, admit to quarantine units

49

50

Prepare for a Surge

- HCW shortages
- Supply Shortages
- Ventilator Beds
  - Respiratory Therapy
  - MD's – telehealth for ventilator settings?

50

51

Thank you very much….

James A. McKinnell, M.D.
Associate Professor of Medicine
David Geffen School of Medicine

51