How are COVID-19 cases progressing?

There were 6,090 new confirmed cases Monday. Numbers may not represent true day-over-day change as reporting of test results can be delayed. The total number of deaths is 6,448, an increase of 111 from Sunday.

277,774
Positive Cases
+6,090 New Cases
+2.2% Increase

6,448
Total Deaths
+111 New Deaths
+1.8% Increase
Too many COVID-19 topics to cover in one session

- Safe re-opening of schools and universities
- Contact tracing as a strategy to control outbreaks
- Public health practice from the perspective of a county health officer perspective
Safe Reopening of Educational Institutions

Brad Pollock, PhD, MPH, FACE
Chair, Department of Public Health Sciences
Associate Dean for Public Health Sciences,
UC Davis School of Medicine
July 8, 2020
Pre-K and K–12 Schools
COVID-19 in Young Persons

• COVID-19 is much milder in kids, why?
  ▪ Differences in innate and adaptive immune responses
    o Pediatric vaccinations or common infections might stimulate protective innate responses
    o Coronavirus URIs might stimulate deleterious acquired responses in adults
  ▪ Differences in virus binding and infectivity of host epithelial cells

• Long-term sequelae in children remain unknown
  (Aside from a very rare Kawasaki-like illness)

• Closure of schools was based on fear of spread from children to more vulnerable individuals but with very limited evidence
  ▪ From influenza, preventing contact at school thought to reduce spread of SARS-CoV-2
Pre-K and K–12 Schools

• Schools provide not only education but nutritional support, healthcare, and social services

• At-risk kids may be more easily identified in school

• After-school activities and physical education are important
…coming school year should start with a goal of having students **physically present** in school

- Lengthy time away and interruption of supportive services affect:
  - Social isolation
  - Difficulty in identifying important learning deficits, physical or sexual abuse, substance use, depression, and suicidal ideation
  - Increases in morbidity and sometimes mortality
Reopening Schools Safely: The Case for Collaboration, Constructive Disruption of Pre-Coronavirus 2019 (COVID-19) Expectations, and Creative Solutions

Dan M. Cooper, MD1,*, Lisa Guay-Woodford, MD2,*, Bruce R. Blazar, MD3, Scott Bowman, MS4, Carrie L. Byington, MD5, Jeffrey Dome, MD, PhD6, Donald Forthal, MD7, Michael W. Konstan, MD8, Nathan Kuppermann, MD, MPH9, Robert I. Liem, MD10, Eduardo R. Ochoa, Jr, MD11, Brad H. Pollock, PhD12, Olga Acosta Price, PhD13, Bonnie W. Ramsey, MD14, Lainie Friedman Ross, MD, PhD15, Ronald J. Sokol, MD16, and Rosalind J. Wright, MD17

In the US, 40% of families have school-aged children and in more than 90% of these households, at least 1 parent is employed outside the home. Schools play an important role in these working families.1 Yet, schools have been closed for approximately 2 months in an effort to curb the coronavirus 2019 (COVID-19) pandemic, and closing has had a profound influence on family health and well-being. When more, without more community-based data, we don’t know whether most children actually evade infection or, if infected, largely are asymptomatic. This uncertainty is dangerous. In children, who frequently require hands-on care, asymptomatic infection may pose a greater risk to susceptible individuals than might exposure to an asymptomatic adult.

In addition, current data indicate that children and adults
School Safe Reopening

• Demands sensitivity to community inequities

• General challenges:
  ▪ Physical distancing
  ▪ Face coverings
  ▪ Good hygiene

• Special challenges:
  ▪ Food security
  ▪ Safe transportation
  ▪ Healthcare safety nets
  ▪ Emergency preparedness policy
Evidence about SARS-CoV-2 incidence and transmission in schools is sparse

- Contact tracing in 3 COVID-19+ students in Ireland before schools were closed in March found no evidence of student transmission to other students or to adults.
- Recent school re-openings in France, Israel, and Korea showed increased COVID-19 outbreaks.
- Children (<18) are between 1/3 and 1/2 as likely as adults to contract the virus.
  - Lowest for the youngest children.
- Children are unlikely to be the main drivers of the pandemic…it is highly likely that children can transmit the SARS-COV-2 virus, which causes COVID-19, and even asymptomatic children can have viral loads.

*Ludvigsson JF. Acta Paediatr. 2020;apa.15371*
• Encouraging patterns from South Africa to Finland to Israel
  ▪ Keeping student groups small and requiring masks and some social distancing helps keep schools and communities safe
  ▪ Younger children rarely spread the virus to one another or bring it home
  ▪ While outbreaks can happen, with some changes to schools’ daily routines, benefits of attending school seem to outweigh the risks at least where community infection rates are low and officials are standing by to identify and isolate cases and close contacts
School Best Practices

- Symptom screenings
- PPE for students with disabilities
- Hand hygiene (portable handwashing stations)
- Limit number of students physically reporting to school at the same time
- Limit PE to activities that do not involve physical contact
- For re-closures, plan for continuity of education, medical and social services, and meal programs
- Address potential negative consequences of physical distancing rules that could result in unintended segregation of students with disabilities on campuses away from peers without disabilities
Higher Education
CNN, the New York Post, and the Associated Press, among many others report “Tuscaloosa students held parties, bet on who got coronavirus first.”

‘Covid Parties’ Are Not A Thing

No, Alabama frat boys aren’t doing snot shots and betting on who can get sick first. "Why does the media keep suggesting otherwise?" asks Wired in its report ‘Covid Parties’ Are Not a Thing.

“They put money in a pot and they try to get Covid,” said City Council member Sonya McKinstry. “Whoever gets Covid first gets the pot. It makes no sense.”

That much, at least, is true: This story makes no sense. Despite its implausibility and utter lack of valid sourcing, the fantasy of Alabama virus gamblers has nonetheless exploded across the internet, with slack-jawed coverage turning up in CNN, the New York Post, and the Associated Press, among many others. A representative headline declares, “Tuscaloosa students held parties, bet on who got coronavirus first.”
The Seattle campus of the University of Washington, pictured in March, is seeing a growing outbreak of COVID-19 cases among fraternity house residents this summer.

Karen Ducey/Getty Images

The University of Washington announced on Sunday that at least 112 fraternity house residents north of its Seattle campus have tested positive for COVID-19, bringing the total number of students infected on Greek Row so far to 121.

The nine additional students who tested positive were close contacts of the residents, but do not live in the fraternity houses, according to a statement from The University of Washington.
University of California System Guidance

• Strategies for Reducing Transmission of SARS-CoV-2 at UC Campuses
  (UC Public Health COVID-19 Working Group)
Strategies for Reducing Transmission of SARS-CoV-2 at UC Campuses

- Consideration of spaces for instruction, research, and work
- Access to special campus facilities
  - Office spaces
  - Research laboratories and studios
  - Common spaces
    - Libraries
    - Food service locations
    - Recreational spaces
- Residential housing for students
Strategies for UC Campuses

1. Work Environment Distancing
2. Classrooms and other Common Instructional Spaces
3. Student Housing
4. Other Common University Spaces
5. Student Responsibilities
6. Mental Health and Emotional Support
7. Recreation and Physical Activities
8. Other Considerations
   Visitors, transportation, local conditions
Student Housing

• General measures:
  Lower density of rooms and bathrooms
  Family-like pods
  Disinfection
    High-touch contact surfaces
    Hand cleaning stations
  Targeted dorm-specific viral testing/surveillance/contact tracing, symptom screening
  Initial quarantine and testing

• Temporary dwellings for students and employees for those infected or potentially exposed

• Mitigation measures for off-campus living
Student Personal Behaviors

- Enhance physical distancing, use of face coverings, and good hand hygiene

- Health behavior messaging:
  - Online courses, webinars, and other messaging through learning management systems, social media, signage, and verbal reminders
  - Extend into the community and to off-campus activities

- Student participation in the design and implementation of mitigation strategies

- Student organization engagement
Mental Health and Emotional Support

• Increase in emotional stress with the loss of campus life and the transition to remote instruction

• Moving to college + impact of the pandemic may exacerbate psychological and emotional distress
  ▪ Compounded by the current charged atmosphere related to civil unrest?

• Increased use of Student Health and Counseling services
University of California System Guidance

- **Strategies for Reducing Transmission of SARS-CoV-2 at UC Campuses**  
  (UC Public Health COVID-19 Working Group)

- **Recommendations for Testing and Contact Tracing**  
  (UC Testing and Tracing Task Force)

- **Symptom Screening Task Force Recommendations**  
  (Symptom Screening Task Force)
Symptom screening, testing and case identification
“Testing is key”

• Benchmarks
  ▪ Number of tests performed daily
  ▪ Positive test rate

• Testing is only as good as the ability to operate on test results:
  ▪ Contact tracing
  ▪ Isolation/quarantine

• Testing approaches for college campuses
  ▪ Asymptomatic vs. symptomatic testing
  ▪ Frequency of testing
  ▪ Targeting special university populations (dorms, Greek life, etc.)
  ▪ University COVID-19 Modeling Group
    ○ Emory
    ○ Penn State
Harvard to bring 40% of students back on campus in fall, test for virus every 3 days

CAMBRIDGE, Mass. (WPRI) — Harvard University announced Monday all 2020–2021 academic year courses will be delivered online, and only up to 40% of their undergraduate students will come back to campus for the fall semester.
Future Testing Modalities

• Pooled testing

• Innovative diagnostic testing
  ▪ Gene-editing
  ▪ Breath testing
  ▪ Home-based saliva collection
  ▪ Mobile-device integration

• Antibody testing
  ▪ Should not be used to make decisions about grouping persons residing in or being admitted to congregate settings, such as schools, dormitories, or correctional facilities
  ▪ Should not be used to make decisions about returning persons to the workplace
Where are the UCs at?

- We are still developing our campus plans
  Upcoming deadline to finalize them
UC Davis Planning for Re-Opening

• Fall 2020 Scenario Instruction Planning Workgroup
• Fall 2020 Planning Operational Workgroup
• COVID Preparedness Advisory Team (CPAT)
• Contact Tracing/Case Investigation Team
Where are the UCs at?

• We are still developing our campus plans
  Upcoming deadline to finalize them

• All plans have contingencies to accommodate the dynamic local situation

• I’ve not seen the perfect plan yet
Conclusions

• Reopening schools and universities in an ever-changing environment is challenging

• Benefits must outweigh the harms
  Real harms: food insecurity, learning gaps, addressing special needs, ▼ physical activity and ▲ weight gain, parents’ employment

• Ability of schools to restart depends on community characteristics (correlated with race, ethnicity, SES and health care disparities)

• All risk reduction measures should be deployed (evidence base?)

• Technology has significantly impacted learning during the pandemic
  Will play a more significant role in education in the future

• Sufficient update of effective vaccines will be challenging
The major culprit is close-up, person-to-person interactions for extended periods. Crowded events, poorly ventilated areas and places where people are talking loudly—or singing, in one famous case—maximize the risk.

By Daniela Hernandez, Sarah Toy and Betsy McKay, WJS, June 16, 2020
Thank you
Clinical Decision Algorithm to Guide Care Advice Messages

Ask Series of Questions:
- **Exposures:** In last 2 weeks before sick:
  - Have contact with someone with COVID-19?
  - Live in/vist a place where COVID-19 spreading?

- **Symptoms:**
  - Fever (subjective or measured)
  - Shortness of breath
  - Severe shortness of breath (unable to speak full sentence)
  - Cough
  - Coughing up blood (hemoptysis)
  - Signs of low blood pressure (cold, pale, clammy skin, light-headed)
  - Runny or stuffy nose
  - Sore throat
  - Muscle, body aches, or headaches
  - Fatigue or muscle
  - Nasal congestion or diarrhea
  - For age 2-18 years:
    - Ribs are pulling in with each breath (retractions)
    - Decreased urine output

- **High-risk Conditions:**
  - Age 65 years
  - Chronic lung disease or moderate to severe asthma
  - Congestive heart failure
  - Diabetes with complications
  - Neurologic conditions that weaken ability to cough
  - People with weakened immune systems
  - Dialysis
  - Cirrhosis of the liver
  - Extreme obesity (Body Mass Index, or BMI greater than or equal to 40)
  - Pregnancy

Special Circumstances:
- Live in nursing home or long-term care facility
- Healthcare personnel

Dispositions:
- **Urgent medical attention is needed/Go to the ED:**
  - Severe shortness of breath
  - Hemoptysis
  - Signs of low blood pressure
  - Dehydration (only age 2-18)
  - Retractions (only age 2-4)

- **Call a provider within 24 hours:**
  - Any non-severe shortness of breath
  - Fever + 1 comorbidity
  - Cough + 1 comorbidity
  - (Encourage tele-health options)

- **Contact facility occupational health provider immediately:**
  - Healthcare personnel, and
  - Any non-severe shortness of breath
  - Fever
  - Any respiratory symptom

- **Contact LTC facility healthcare provider to be seen:**
  - Live in a nursing home/LTC facility
  - Any non-severe shortness of breath
  - Fever
  - Cough

- **Stay at home, call provider if you get worse:**
  - Fever + no comorbidity
  - Cough + no comorbidity
  - Any other symptom, regardless of comorbidity
  - (Encourage tele-health options)

- **Provide education:**
  - No-symptoms not sick

Provide education:
School Research

• Measure and record COVID-19 related symptoms, viral shedding, serology, and, where appropriate, conduct contact tracing.
  ▪ Look at SARS-CoV-2 plus common respiratory-disease viral pathogens
  ▪ Quantify viral transmission in school settings

• Measure the impact of physical distancing in the classroom and novel approaches to physical education

• Assess transmission of the highly prevalent “other viruses” to gauge the efficacy of mitigation procedures
### Recommended list of symptoms to include in screening:

<table>
<thead>
<tr>
<th>Tier</th>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Fever</td>
<td>Specific temperature threshold determined by the local Public Health Authority</td>
</tr>
<tr>
<td>Red</td>
<td>Chills or Shaking</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Cough</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Shortness of Breath/Difficulty Breathing</td>
<td></td>
</tr>
<tr>
<td>Red</td>
<td>Loss of Taste or Smell</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Sore Throat</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Runny Nose/Sinus Congestion</td>
<td>New, not from a known or chronic condition</td>
</tr>
<tr>
<td>Yellow</td>
<td>Diarrhea</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Muscle Pains/Body Aches</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Headache</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Unusual Fatigue</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Eye Redness with or without Discharge</td>
<td></td>
</tr>
<tr>
<td>Yellow</td>
<td>Nausea or Vomiting</td>
<td></td>
</tr>
</tbody>
</table>

*UC Symptom Screening Task Force, July 7, 2020 draft*
# UC Strategies for Students Arriving to Campus

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Asymptomatic Testing</th>
<th>Symptomatic Testing Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily self-performed symptom monitoring</td>
<td>Required beginning 14 days prior to arrival and every day thereafter</td>
<td>Required beginning 14 days prior to arrival and every day thereafter</td>
</tr>
<tr>
<td>Test prior to arrival on campus</td>
<td>All students required to show proof of a negative FDA EUA-authorized SARS-CoV-2 clinical test (currently PCR) within 7 days prior to arrival</td>
<td>PCR testing required for all symptomatic students prior to arrival on campus</td>
</tr>
<tr>
<td>Test again after arrival on campus</td>
<td>All students who reside in on-campus housing will be retested by PCR between 7-14 days after arrival on campus.</td>
<td>Only if a student has developed symptoms <em>en route</em> to campus or reports that they are a close contact of a COVID-19 positive individual</td>
</tr>
<tr>
<td>Sequester with minimal social interactions</td>
<td>7 days for all students upon arrival or until the second negative PCR test is completed</td>
<td>14 days for all students upon arrival</td>
</tr>
<tr>
<td>(essential activities only)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Refer symptomatic students for medical evaluation</td>
<td>Evaluate and provide care as determined by medical professional</td>
<td>Evaluate and provide care as determined by medical professional</td>
</tr>
<tr>
<td>Test symptomatic students and return results in ≤ 24 hours</td>
<td>Required if recommended per symptom screening algorithm and/or evaluation by medical professional</td>
<td>Required if recommended per symptom screening algorithm and/or evaluation by medical professional</td>
</tr>
<tr>
<td>Isolate symptomatic students pending results</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Refer students who test positive for case</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>investigation and contact tracing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test AND quarantine for 14 days close student contacts of students who test positive</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Face coverings worn in public at all times</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>Other NPI and adherence to all required public</td>
<td>Required</td>
<td>Required</td>
</tr>
<tr>
<td>health measures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UC Systemwide Testing and Tracing Task Force Recommendations to the President and Chancellors (revised 7/7/2020)