



# MEDICINE

JOHNS HOPKINS  
UNIVERSITY & MEDICINE

CORONAVIRUS  
RESOURCE CENTER

Jeff Stroup, PharmD, BCPS

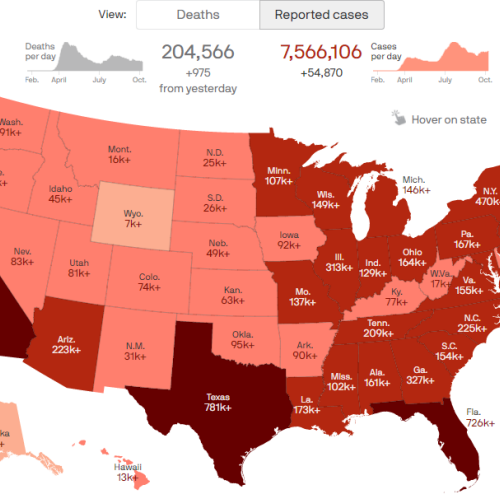
Provost

OSU Center for Health Sciences

Tulsa, OK

COVID-19 in the U.S.

As of Oct. 8, 2020, 6pm EDT



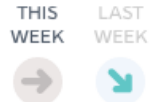
State: Oklahoma

New Cases

New daily cases



Weekly trend

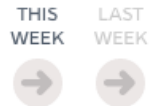


Tests per 1,000 people

Daily Tests

3.3 tests per 1,000

Weekly trend



Percent Positive

Daily % positive

8.2% positive

Above threshold?

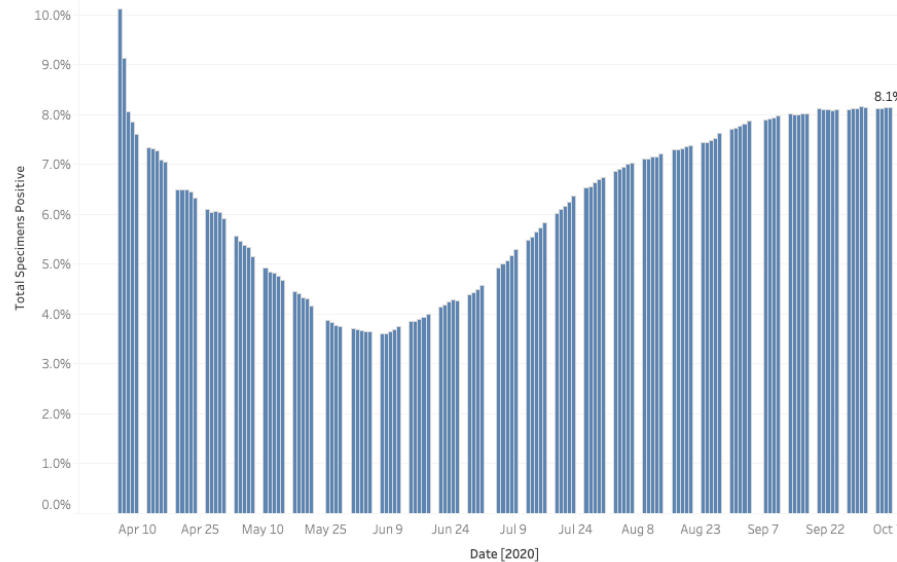


This graphic was last updated on  
Saturday, October 10, 2020 at 03:00 AM EDT.

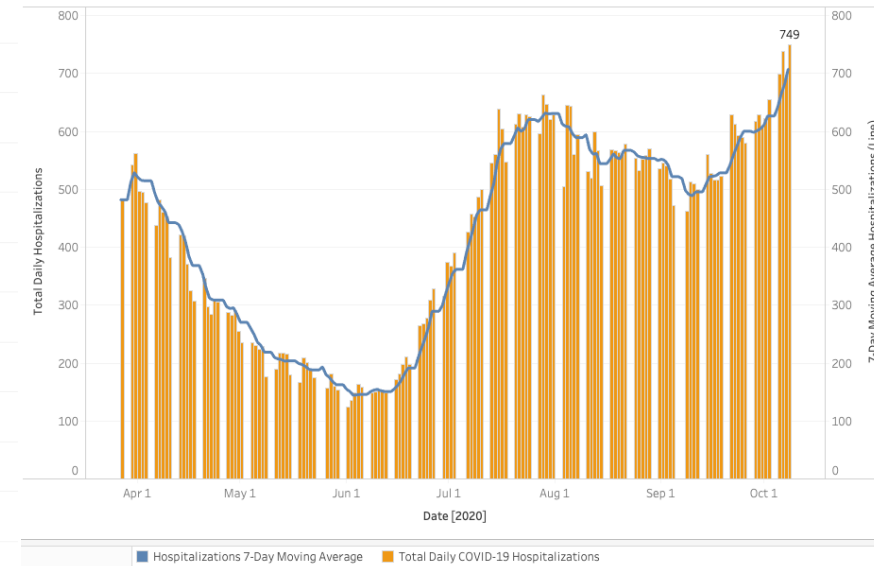
[coronavirus.jhu.edu](https://coronavirus.jhu.edu)

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Oklahoma: Positive COVID-19 Test Rates



Oklahoma COVID-19 Hospitalizations



# Guiding Principles

- There is no singular approach that creates perfect protection for faculty, staff, or students.
  - Reduce Risk and Provide Flexibility
  - Offer multiple teaching modalities
- To keep campus communities healthy, safe, and well everyone must move in the same direction.
  - Personal responsibility is paramount
  - Stages
    - Virus Fear (April 2020) → Virus Fatigue (June 2020) → Virus Anger (October 2020)
- The University communities will reduce restrictions as local and state public health conditions allow.
  - This may become tougher around the country going into November-December

# Be Familiar with Definitions

- **Isolation**: is used to separate people infected with SARS-CoV-2, the virus that causes COVID-19, from people who are not infected. People who are in isolation should stay home until it's safe for them to be around others. In the home, anyone sick or infected should separate themselves from others by staying in a specific “sick room” or area and using a separate bathroom (if available).
  - Who needs to isolate:
    - People who have COVID-19
      - People who have symptoms of COVID-19 and are able to recover at home
      - People who have no symptoms (are asymptomatic) but have tested positive for infection with SARS-CoV-2

# Be Familiar with Definitions

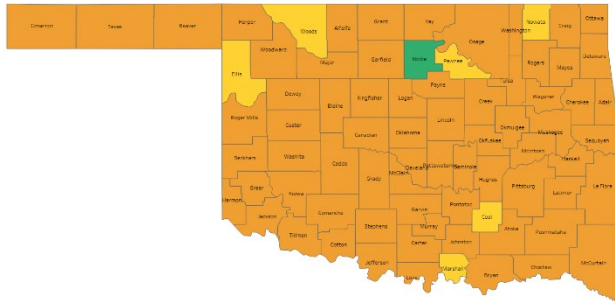
- **Quarantine** is used to keep someone *who might have been exposed to COVID-19* away from others. Quarantine helps prevent spread of disease that can occur before a person knows they are sick or if they are infected with the virus without feeling symptoms. People in quarantine should stay home, separate themselves from others, monitor their health, and follow directions from their state or local health department.
  - Who needs to quarantine:
    - People who have been in close contact with someone who has COVID-19—excluding people who have had COVID-19 within the past 3 months.
    - People who have tested positive for COVID-19 do not need to quarantine or get tested again for up to 3 months as long as they do not develop symptoms again. People who develop symptoms again within 3 months of their first bout of COVID-19 may need to be tested again if there is no other cause identified for their symptoms.



# What is a “Close Contact?”

- You were within 6 feet of someone who has COVID-19 for a total of 15 minutes or more
- You provided care at home to someone who is sick with COVID-19
- You had direct physical contact with the person (hugged or kissed them)
- You shared eating or drinking utensils
- They sneezed, coughed, or somehow got respiratory droplets on you

# Maps and Color Coding are Confusing Me



## OSDH

- **Green:** 0 < 1.43 daily new cases per 100,000 population
- **Yellow:** 1.43 < 14.29 daily new cases per 100,000 population
- **Orange:** > 14.29 daily new cases per 100,000 population
- **Red:** > 14.29 daily new cases per 100,000 plus a trigger

OSDH will deem a county as in a high-risk phase (RED) if the county is reporting more than 14.39 daily new cases per 100,000 and one "Trigger" in the State within a given week.

- Region has reached maximum hospital capacity (activation of contracted beds or 100% of average of license or staffed beds) AND 50% of contracted hospital beds under surge plan filled.
- Statewide Ventilator threshold: Percent of ventilators available <5% statewide
- Facility PPE threshold: Average days of PPE on hand and available < 5 days statewide

**COLOR THRESHOLDS:** Results for each indicator should be taken in context of the findings for related indicators (e.g., changes in case incidence and testing volume). Values are rounded before color classification.

Metric	Dark Green	Light Green	Yellow	Orange	Red
New cases per 100,000 population per week	≤4	5 – 9	10 – 50	51 – 100	≥101
Percent change in new cases per 100,000 population	≤-26%	-25% – -11%	-10% – 0%	1% – 10%	≥11%
Diagnostic test result positivity rate	≤2.9%	3.0% – 4.9%	5.0% – 7.9%	8.0% – 10.0%	≥10.1%
Change in test positivity	≤-2.1%	-2.0% – -0.6%	-0.5% – 0.0%	0.1% – 0.5%	≥0.6%
Total diagnostic tests resulted per 100,000 population per week	≥2001	1001 – 2000	750 – 1000	500 – 749	≤499
Percent change in tests per 100,000 population	≥26%	11% – 25%	1% – 10%	-10% – 0%	≤-11%
COVID-19 deaths per 100,000 population per week	≤0.1	0.2 – 0.4	0.5 – 1.0	1.1 – 2.0	≥2.1
Percent change in deaths per 100,000 population	≤-26%	-25% – -11%	-10% – 0%	1% – 10%	≥11%
Skilled Nursing Facilities with at least one resident COVID-19 case, death	0%		1% – 5%		≥6%
Change in SNFs with at least one resident COVID-19 case, death	≤-2%		-1% – 1%		≥2%

## COVID19 Active Case Rates per 1,000

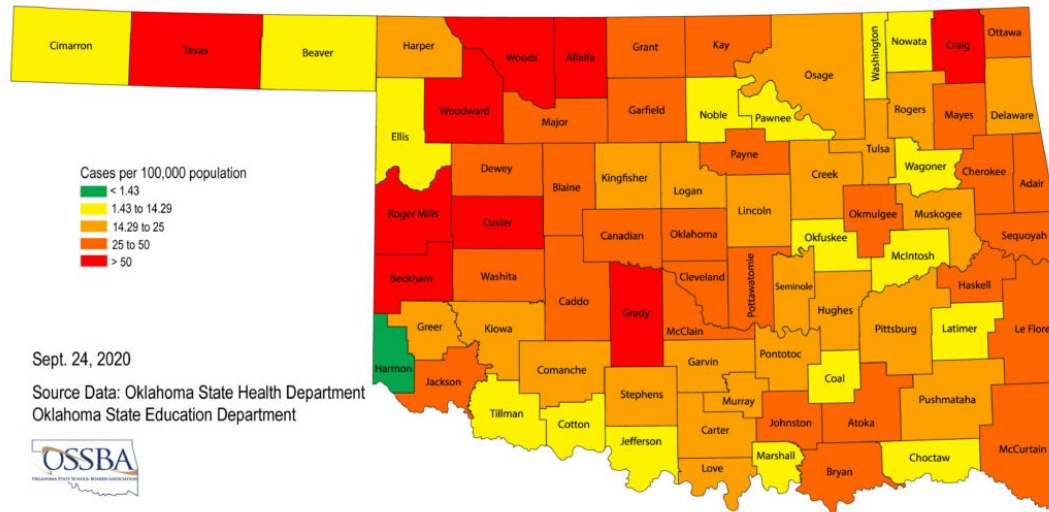
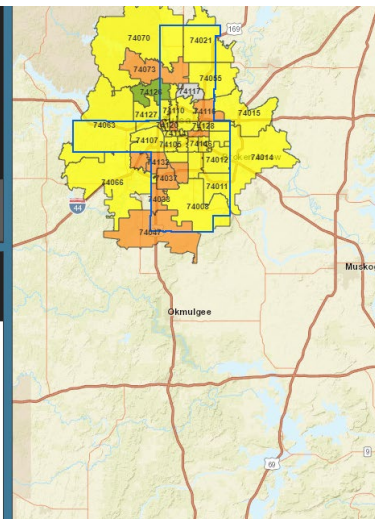
- 0.0 - 0.08 (Low risk of COVID spread)
- 0.09 - 0.17 (Moderate risk)
- 0.18 - 0.33 (High risk)
- 0.34 and up (Severe risk)
- NA

\* ZIP Codes completely / partially within Tulsa County. For bordering Zip Codes that extend beyond Tulsa County, cases out of Tulsa County are also considered in these counts.

## Guidance for Risk Levels

COVID Green: Low Risk of COVID-19 Spread

COVID Status	Low Risk of COVID-19 Spread
Green	0.0 - 0.08
Yellow	0.09 - 0.17
Orange	0.18 - 0.33
Red	0.34 and up

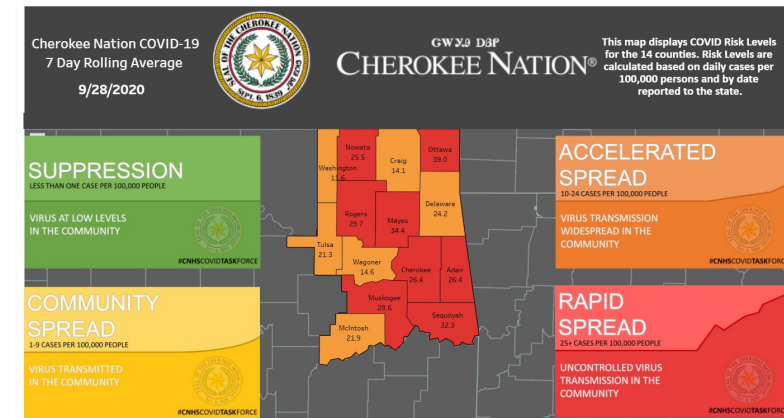


Sept. 24, 2020

Source Data: Oklahoma State Health Department  
Oklahoma State Education Department



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# Information is Powerful

nature

<https://doi.org/10.1038/s41586-020-2798-3>

## Accelerated Article Preview

# SARS-CoV-2 vaccines in development

Received: 23 August 2020

Florian Kramer

Accepted: 17 September 2020

Accelerated Article Preview Published online 23 September 2020

Cite this article as: Kramer, F. et al. SARS-CoV-2 vaccines in development. *Nature* <https://doi.org/10.1038/s41586-020-2798-3> (2020).

This is a PDF file of a peer-reviewed paper that has been accepted for publication. Although unedited, the content has been subjected to preliminary formatting. Nature is providing this early version of the typeset paper as a service to our authors and readers. The text and figures will undergo copyediting and a proof review before the paper is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers apply.

## Pre-existing immunity to SARS-CoV-2: the knowns and unknowns

Alessandro Sette<sup>1,2</sup> and Shane Crotty<sup>1,2</sup>

T cell reactivity against SARS-CoV-2 was observed in unexposed people; however, the source and clinical relevance of the reactivity remains unknown. It is speculated that this reflects T cell memory to circulating 'common cold' coronaviruses. It will be important to define specificities of these T cells and assess their association with COVID-19 disease severity and vaccine responses.

As data start to accumulate on the detection and characterization of SARS-CoV-2 T cell responses in humans, a surprising finding has been reported: lymphocytes from 20–50% of unexposed donors display significant reactivity to SARS-CoV-2 antigen peptide pools<sup>1–4</sup>.

In the human population and are responsible for mild self-limiting respiratory symptoms. More than 90% of the human population is seropositive for at least three of the CCCs<sup>5</sup>. Thiel and colleagues<sup>3</sup> reported that the T cell reactivity was highest against a pool of SARS-CoV-2



## No SARS-CoV-2 neutralization by intravenous immunoglobulins produced from plasma collected before the 2020 pandemic

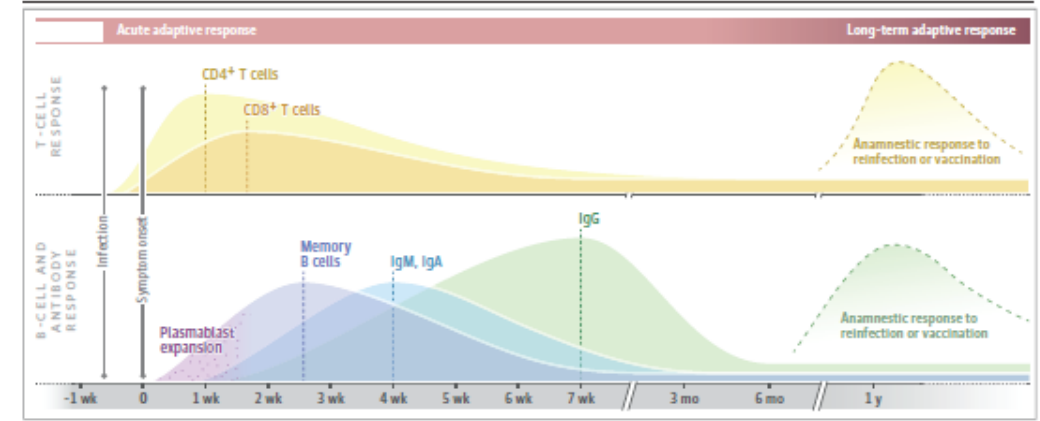
Julia Schwaiger,<sup>1</sup> Michael Karbiener,<sup>1</sup> Claudia Aberham,<sup>2</sup> Maria R. Farcet,<sup>1</sup> Thomas R. Kreil<sup>1</sup>

<sup>1</sup> Global Pathogen Safety, Baxter AG, now part of the Takeda group of companies, 1221

Vienna, Austria

<sup>2</sup> BioLife, Baxter AG, now part of the Takeda group of companies, 1221 Vienna, Austria

Figure. Adaptive immunity to Coronavirus Disease 2019



Generalized model of T-cell and B-cell (plasmablast, antibody) responses to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection projected over 1 year following infection. Neutralizing antibodies, memory 4 B cells, and CD4<sup>+</sup> and CD8<sup>+</sup> memory T cells to SARS-CoV-2, which are

generated by infection, vaccination, or after reexposure, are key to the path to immunity. The dotted lines represent peak B-cell, T-cell, and antibody responses following infection.

## Review

## Lessons for COVID-19 Immunity from Other Coronavirus Infections

Alan Sairiol<sup>1</sup> and Stanley Perlman<sup>1,2,\*</sup>

<sup>1</sup>Interdisciplinary Graduate Program in Immunology, University of Iowa, Iowa City, IA 52242, USA

<sup>2</sup>Department of Microbiology and Immunology, University of Iowa, Iowa City, IA 52242, USA

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<https://doi.org/10.1016/j.immuni.2020.07.005>

A key goal to controlling coronavirus disease 2019 (COVID-19) is developing an effective vaccine. Development of a vaccine requires knowledge of what constitutes a protective immune response and also features that might be pathogenic. Protective and pathogenic aspects of the response to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) are not well understood, partly because the virus has infected humans for only 6 months. However, insight into coronavirus immunity can be informed by previous studies of immune responses to non-human coronaviruses, common cold coronaviruses, and SARS-CoV and Middle East respiratory syndrome coronavirus (MERS-CoV). Here, we review the literature describing these responses and discuss their relevance to the SARS-CoV-2 immune response.

# Other Thoughts

- Have up-to-date campus information regarding cases readily accessible
  - Real-time data if possible
- Communicate to faculty, staff, and students regularly
  - Weekly newsletters with links to policies, health department websites, and other important resources.
- Have Q&A and FAQs available to students, faculty, and staff
  - Develop an online feedback system
  - Post FAQs from feedback
- Don't forget Wellness Programs for Faculty, Staff, and Students
  - We are not on the home stretch
- Lead by example
  - 3 W's: wash hands, wear a mask, watch distance





# Other Thoughts

- Be informed
  - Color Maps and Definitions
  - Hospital Capacity
  - Herd Immunity
  - Vaccine Status
- Can academic programs partner with local health departments?
  - Nursing faculty / students work with health department
- What is the cut point to close or move to distance learning?
  - NY: >100 cases or 5% of on campus population
  - CDC and WHO 5% community test positivity
- Plans vary throughout country and some are extremely aggressive
- This may become painful going forward...

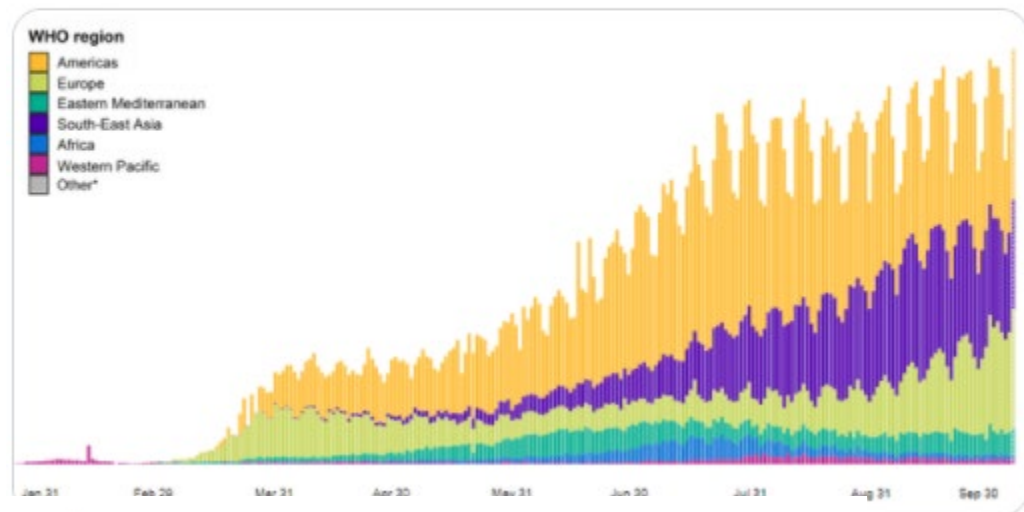




# MEDICINE

BNO Newsroom @BNODesk · Oct 8

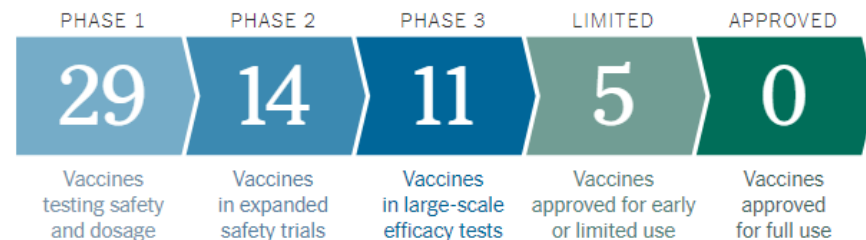
338,779 new cases of coronavirus worldwide, the biggest one-day increase on record, according to WHO. 5,514 new deaths



## Questions?

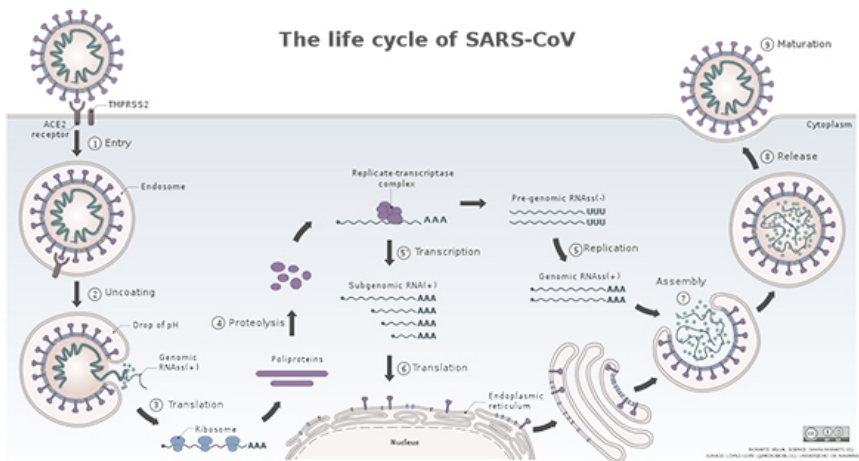
## Coronavirus Vaccine Tracker

By Jonathan Corum, Sui-Lee Wee and Carl Zimmer Updated October 7, 2020



Vaccines typically require years of research and testing before reaching the clinic, but scientists are racing to produce a safe and effective coronavirus vaccine by next year. Researchers are testing **44 vaccines** in clinical trials on humans, and at least 92 preclinical vaccines are under active investigation in animals.

The life cycle of SARS-CoV



## 3 W's to reduce risk of COVID-19

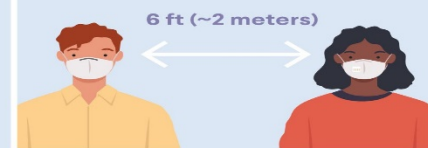
**Wear a mask**



**Wash your hands**



**Watch your distance**



# Public Health on the Ground

## *Facilities*

**Public hygiene measures are effective and proven to help limit and control the spread of COVID-19.**

- Increase regular cleaning and disinfecting of public spaces, with a focus on high-touch surfaces in and around our facilities (i.e., door handles, elevator buttons).
- COVID-19 visible messaging, including exterior doors, entrances, lobbies, and restrooms.
  - These include “Stop the Spread” campaign materials, as well as CDC and OSDH assets, where needed.
- Provide hand-sanitizing stations at primary entrances to facilities and in high-traffic areas.
- Limit occupancy to areas
  - On average, limit classrooms to capacities of just 25 percent of what would have been typical in previous years.
- Restrict access to buildings so only those who need to enter for class, work, or other University purposes will be in a designated facility.
- Institute building traffic guidelines in hallways, restrooms, elevators, and escalators to ensure safe physical distancing.
- Implement rigorous safety measures in student housing and dining in addition to limiting capacities in these settings where appropriate.
  - Safety measures should include mandatory face coverings, physical distancing, and individual and community hygiene practices.
- Every department in the University should prepare a plan to ensure the hygiene measures are established and implemented.
- Universities should work with off campus living facilities to support students.



# Public Health on the Ground

## *Personal Actions/Decisions*

- Mandate that individuals on University-owned or controlled property utilize masks.
  - The Universities should provide face masks to all students, faculty, and staff.
  - Protocols should be in place if individuals cannot wear a face covering for medical reasons.
- Establish that the University communities ensure physical distancing in all situations where distancing is possible.
- Everyone within the University communities will practice strong personal hygiene on a daily basis.
  - Hand washing, covering sneezes/coughs, and sanitizing common spaces before and after use.
  - All members of the University communities should clean and wipe common spaces before use.
    - Wipes and cleaning supplies should be made available in multiple locations.
- Allow individual decision-making for students and faculty who elect not to physically return to campus this fall, whether to support their own health, the health of those close to them, or to further reduce density on campus.



# COVID-19 Testing Plan

- Testing is an important part of a comprehensive, layered public health plan to reduce the spread of COVID-19 on our campuses.
- Each campus should work with their local health department and hospital provider to ensure that testing is available at no cost for any member of the University exhibiting COVID-19 symptoms or those who have been exposed to a positive case (within six feet for more than 15 minutes).
- Asymptomatic testing (excluding those referred to testing due to close contact) is not currently recommended by the CDC. Such testing does not stop the spread of COVID-19 in our communities and provides only a snapshot of a moment in time. Not only can someone test negative one day and then potentially be infected and begin passing on the virus the next, testing results can contribute to a false sense of security that diminishes the focus of proven prevention measures such as physical distancing, consistent use of face coverings, and personal hygiene.
- Surveillance testing means that random samples of students will be selected and tested for COVID-19, regardless of whether they have a known exposure or are showing symptoms of COVID-19. This allows us to make inferences about the level of spread in the student population and identify asymptomatic cases for isolation.



Example of  
Definitions Table:

**Difference between isolation and quarantine:**

	Self-isolation	Self-quarantine
For whom?	<p>People with symptoms of COVID-19</p> <ul style="list-style-type: none"> <li>• For people with COVID-19 who aren't sick enough to be hospitalized, or</li> <li>• For people who are waiting for test results</li> </ul>	<p>People with no symptoms of COVID19</p> <ul style="list-style-type: none"> <li>• Close contacts of people with COVID19</li> </ul>
For how long?	<p>Until recovery, which is when all three have happened (unless you get different instructions from your medical provider):</p> <ol style="list-style-type: none"> <li>1. It's been 24 hours of no fever without the use of fever-reducing medication, and</li> <li>2. Other symptoms have improved, and</li> <li>3. At least 10 days have passed since your symptoms first appeared.</li> </ol> <p>Or if you didn't have symptoms when you were tested, recovery is when 10 days have passed since the date of your first positive test and you continued to have no symptoms.</p>	<p>For 14 days since the last date of possible exposure. The day of the exposure is Day 0.</p> <p>You have the option of getting tested during your quarantine period if you have not had any symptoms. On or after day 7, you can get a test through your provider or a pop-up testing site. Remain in quarantine until you get your results. If the results are negative, and you still don't have any symptoms, you can discontinue quarantine. You will get a call from the Health Department when your results are ready, which is usually within 2-4 days, if not sooner. You will also get a letter in the mail within 7 days of being tested.</p>
What does it mean?	<p>Staying home 24/7 in a separate room in the house, using a separate bathroom, avoiding contact with others. Wear a mask if you're in a room with other people, unless you have trouble breathing.</p>	<p>Staying home 24/7, monitoring for symptoms, and practicing social distancing. If possible, using a separate room and bathroom. If you become symptomatic, your close contacts should also self-quarantine.</p>