

COVID-19: KEEPING UP WITH A MOVING TARGET Sep 23, 2020 UPDATE



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Jointly provided by Postgraduate Institute for Medicine, DKBmed, and the Institute for Johns Hopkins Nursing.

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Dr. Auwaerter has indicated that he will not be referencing the unlabeled or unapproved use of agents currently being investigated in on-going studies and trials.

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CME Information

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Learning Objectives

- Discuss the current trends in COVID-19 testing
- Describe the current knowledge of transmission risk in schools and airplanes







Thank You

This activity is supported by an educational grant from Pfizer, Inc. and in-kind support by DKBmed, LLC.

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Paul Auwaerter, MD, MBA, FIDSA

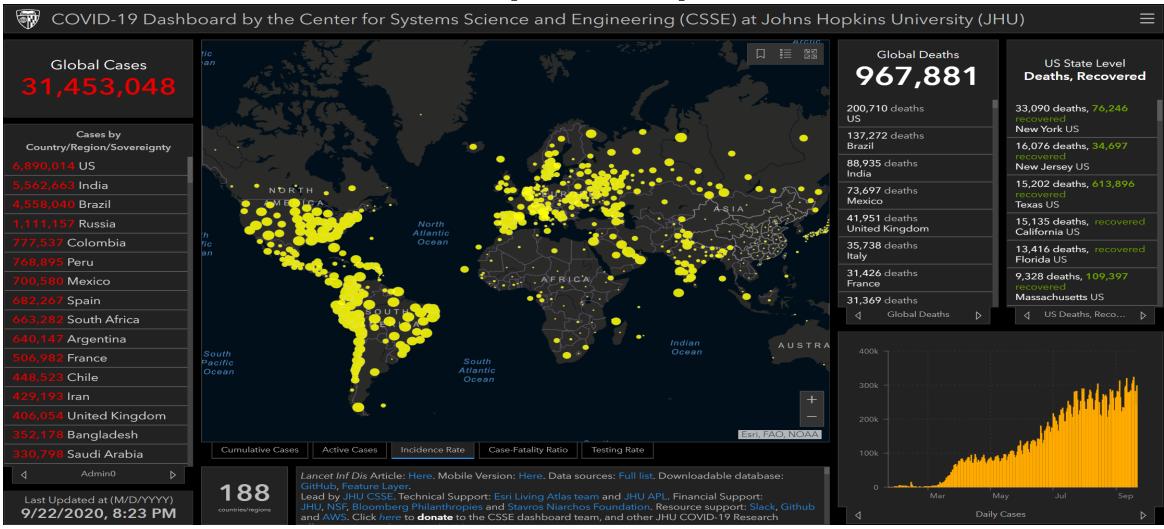
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Total Global Cases (9/22/20)



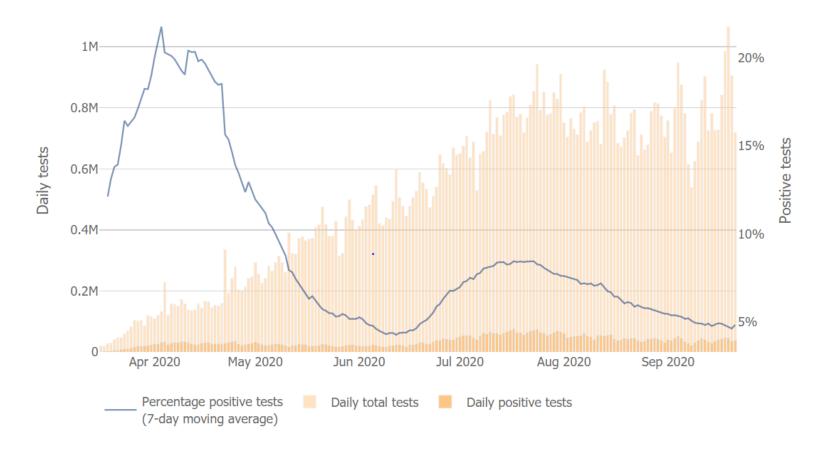
coronavirus.ihu.edu/map.html







Testing Trends U.S.



https://coronavirus.jhu.edu/testing/individual-states 9/22/20

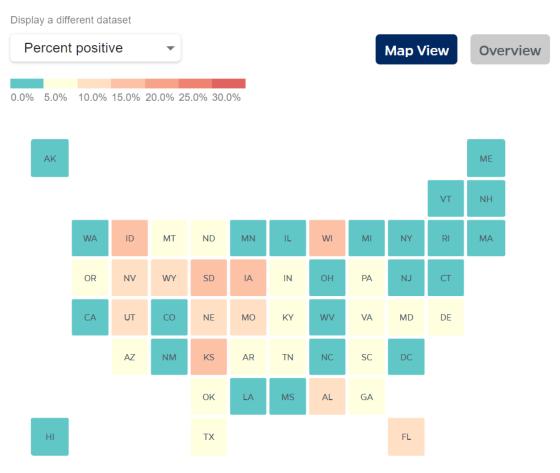






Testing Trends U.S.

Percent of new tests that are positive



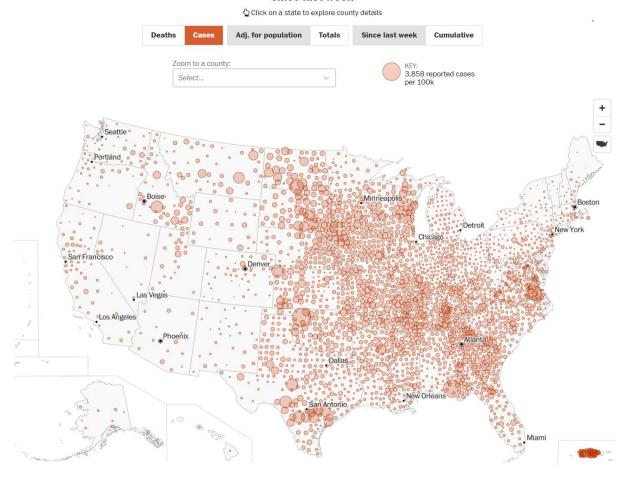






Testing Trends U.S.

Reported cases per 100,000 residents by county since last week



COVID CASES/100,000

-7d average

JHU/Wash Post 9/22/20







Transmission Debate

Controversy again in the news







Transmission

From: Turbulent Gas Clouds and Respiratory Pathogen Emissions: Potential Implications for Reducing Transmission of COVID-19

JAMA. 2020;323(18):1837-1838. doi:10.1001/jama.2020.4756

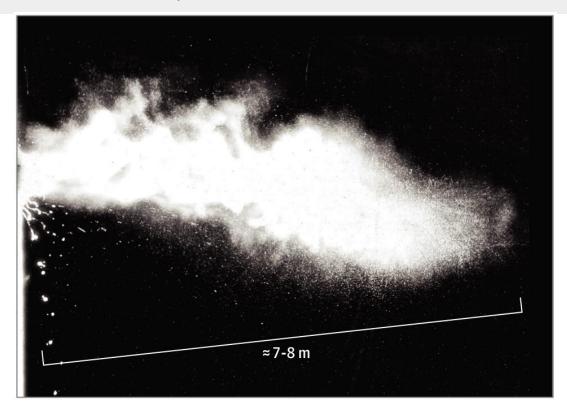


Figure Legend:

Multiphase Turbulent Gas Cloud From a Human Sneeze

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Date of download: 9/13/2020







Transmission in Schools









Transmission in Schools

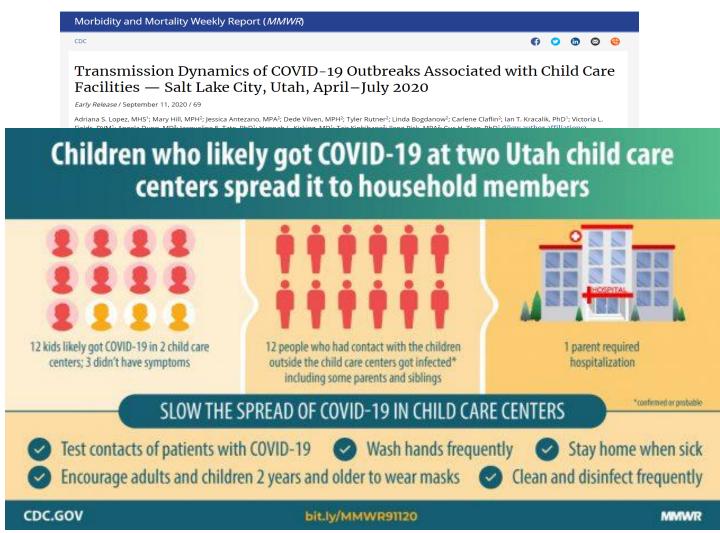








Transmission in Childcare



https://www.cdc.gov/mmwr/volumes/69/wr/mm6937e3.htm







Transportatio

Nearly 11,000 people have been exposed to the coronavirus on flights, the CDC says



Melaku Gebermaniam with Grupo Eulen, uses an electrostatic spraying process before passengers board a Delta Air Lines flight at Reagan National Airpo on July 22, 2020. (Evelyn Hockstein/For The Washington Post)

y lan Duncan

September 19, 2020 at 4:50 p.m. EDT

CDC incompletely contact traced 1600 people "says some of those travelers subsequently fell ill, in the face of incomplete contact tracing information and a virus that incubates over several days, it has not been able to confirm a case of transmission on a plane."

"One person with COVID-19 infected 15 others during a long-haul flight from London to Vietnam in early March"

"A 27-year-old woman in business class as the primary source of the outbreak."

"Noted that long flights in particular have become a matter of increasing concern as many countries have started lifting flight restrictions despite...the ongoing pandemic."









EMERGING INFECTIOUS DISEASES®

EID Journal > Volume 26 > Early Release > Main Article

Disclaimer: Early release articles are not considered as final versions. Any changes will be reflected in the online version in the month the article is officially released.

Volume 26, Number 11—November 2020

Dispatch

Asymptomatic Transmission of SARS-CoV-2 on Evacuation Flight

Flying risks? Little known, perception is low

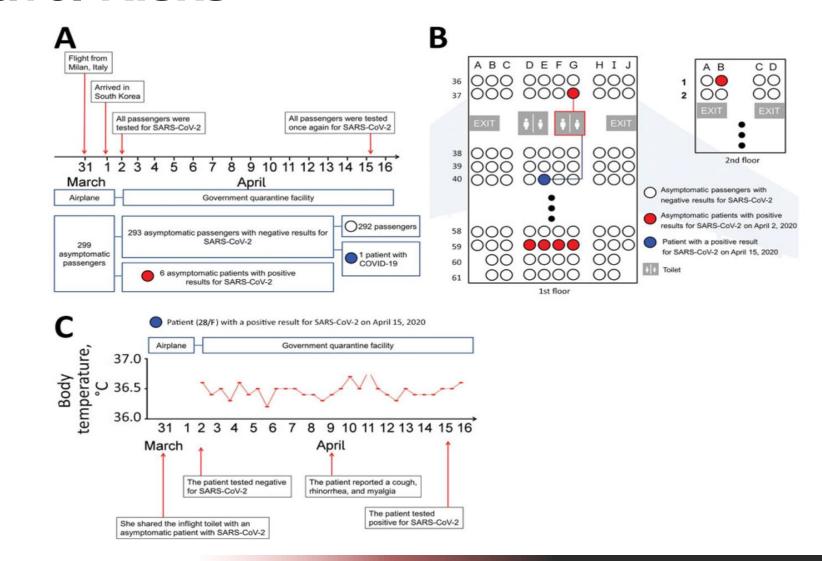
299 Asx passengers, Milan → South Korean, March 31, 2020
--mean age 30.0, 44.1% male
11 hr flight, then quarantined x 14 days

All wearing N95 masks (except meals/toilet), > 6 ft for preboarding Flight is full, no seat separation









Bae SH, et al. Emerg Infect Dis. 2020 Nov















Asymptomatic Transmission The Diamond Princess

2666 passengers, 1045 crew

- Total 3711
- 712 (~20%) infected
- 13 deaths
 - Case fatality rate1.8%

- 72-79% asymptomatic
- Estimate asx cases = 11-84% transmissions

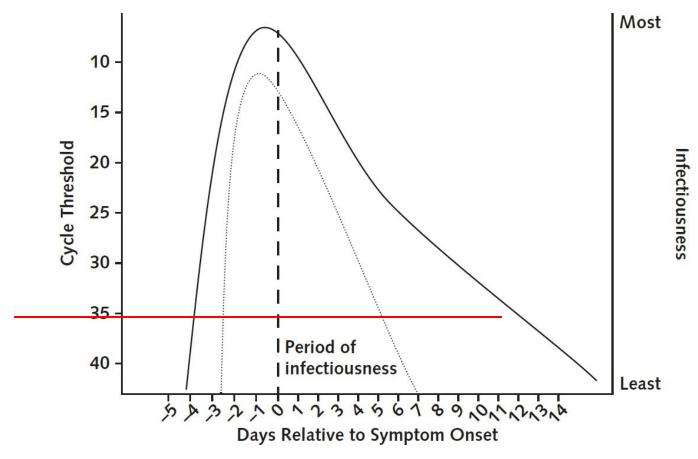
Tabata, Lancet ID Sept 2020;20:1043. https://cmmid.github.io/topics/covid19/asymp-transmission.html



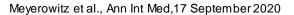




When Are You Most Infectious?



symptomatic adults (*dotted line*) and respiratory tract viral load with time (*solid line*) red line (> 33 Cycle threshold generally not infectious)









Who Transmits?—The Superspreaders

Setting (Reference)	Cases/Total at Risk (Attack Rate), n/N (%)	Index Case	Key Features
Korean call center (136)	94/216 (43.5)	Not identified in report	Most cases found on the 11th floor of the call center: indoors with workers in very close proximity
Church in Arkansas (55)	35/92 (38)	Pastor was presymptomatic and then symptomatic during series of events he led at church	Events included 5 indoor church- related events over several days, some of which included singing
Wedding in Jordan (137)	76/350 (21.7)	Bride's father had fever, cough, and runny nose starting 2 d before event	2-h indoor wedding ceremony; additional 9 confirmed case patients who did not attend wedding were household contacts of those who die
Choir in Washington state (138)	53/61 (86.7)	1 person had "cold- like" symptoms starting 3 d before event	2.5 h in multipurpose room with chairs close together; question of whether singing aerosolized the virus
U.S.S. Theodore Roosevelt (140)	~1000/1400 (~60–70)	Not identified in report	Close quarters; social distancing, mask use, and avoiding common areas all associated with decreased risk
Overnight camp in Georgia (139)	260/354 (78) of those who were tested had positive results (out of 597 who attended)	Not identified in report	Staffers but not campers were expected to wear cloth masks; windows and doors of cabins were not opened to increase ventilation; activities included "daily vigorous singing and cheering"; lodging consisted of 31 cabins with an average of 15 persons in each cabin
International business conference in Boston (141)	At least 90 direct cases leading to sustained local transmission with progeny virus found in at least 35% of infections thereafter in Boston area during a major outbreak and exported to multiple other states	Presumed single introduction from Europe to Boston via this conference	Conference details not described in the manuscript, although presumed hours of close, indoor, unmasked contact

- Superspreaders
- Estimates 10-20% of infected
 → 80% of cases
- Higher viral load likely important

Meyerowitz et al., Ann Int Med,17 September 2020

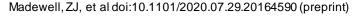






What About in a Household?

- Overall—meta-analysis of 40 studies
 - Secondary attack rate 18.8% (95% CI, 15.4% to 22.2%)
 - Higher for spouse/partner
 - Lower for other household members
 - Variable, depending on environmental factors
- Rates only lower if mask wear & social distancing in household
 - Strongly suggested for high risk people









The Mask Conversation







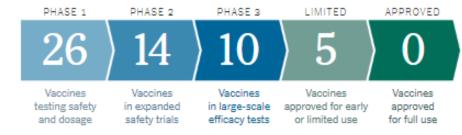


The COVID-19 Vaccine Race

> 300 candidate vaccines

Coronavirus Vaccine Tracker

By Jonathan Corum, Sui-Lee Wee and Carl Zimmer Updated September 23, 2020



All two injections except: JNJ & CanSinoBio (single inj)

Vaccines in Phase 3 trials

- Moderna (mRNA)
- BioNTech/Pfizer (mRNA)
- CanSinoBio* (Ad5)
- Gamaleya* (Ad5/Ad26)
- Oxford/AstraZeneca (ChAdOx1)
- Sinovac* (inactivated)
- Wuhan Inst/Sinopharm (inactivated)
- Sinopharm* (inactivated)
- Murdoch (BCG vaccine)
- JNJ (Ad26)



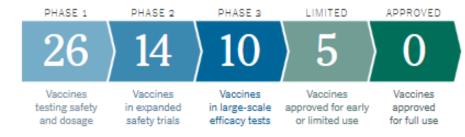


First Available Phase 3 results? Full results likely > 6 months later

> 300 candidate vaccines

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Vaccines in Phase 3 trials

Moderna (mRNA)

DEC or JAN?

BioNTech/Pfizer (mRNA)

NOV-DEC?

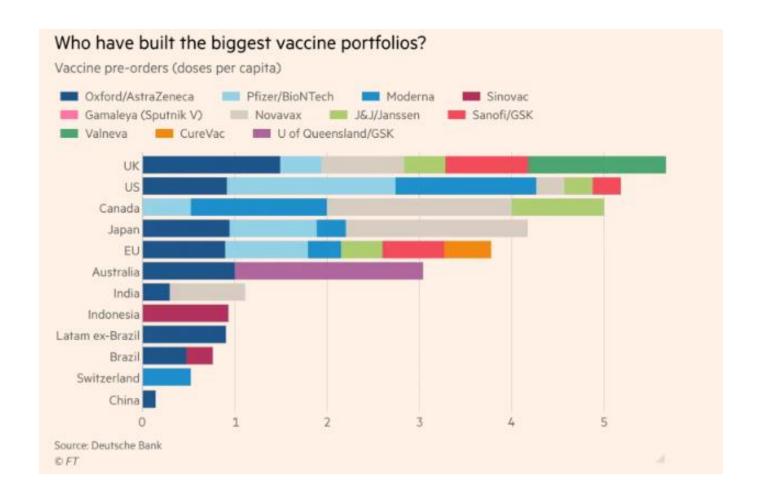
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- Murdoch (BCG vaccine)
- JNJ (Ad26)







Vaccine Portfolio











To submit your own question, please email QA@dkbmed.com









Can you comment on the CDC report that showed that people who had positive COVID tests were >2x more likely to have eaten at restaurants within two weeks than people who did not have positive COVID test? The survey didn't distinguish between indoor dining and outdoor dining. Do you think that outdoor dining carries significant risk of COVID transmission?









Is there an association between COVID-19 illness and new-onset type 1 diabetes in children?





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