Thanks for joining us today, everyone. We apologize for not getting to all the questions but hope some of this is helpful. Stay well; we'll get through this.

The transcript posting site is password protected. Will the password be provided? I am working now and can't read the chat live. Thank you for doing this!

Two format items:
1 - can you each initial your reply so we can tell with whom we should follow-up?
2 - is there a way to comment on your reply? If yes, I haven't figured it...
Our names are on our answers. Unfortunately, we cannot take individual follow up questions. We are getting an overwhelming volume of email at this time.

Apr 1, 2020 11:46 AM

Comment by Thomas Seoh

https://stat.liveblog.pro/#/ presents a challenge of user name and password. When I select Forgot Password? prompt, it doesn't recognize my email address...?

Helen Branswell

I think I put in the wrong link. Sorry. This is the correct one: https://www.statnews.com/2020/04/01/live-chat-coronavirus-pandemic/

Apr 1, 2020 11:43 AM

Comment by Stan S

Since the virus can be isolated from stool, is there evidence to support fecal-oral transmission? Haven't heard much about this but it would have concrete implications for surveillance of food prep workers, & influence choices when people order takeout food...

Helen Branswell

There are questions about whether the fecal-oral route plays a role
in transmission. It's not currently clear but it's thought it probably isn't a major driver of transmission.

Lots of groups have reported finding evidence of virus in the stools of patients, but they've tested using PCR, which only looks for bits of the virus. PCR testing cannot tell you if a positive test is detecting whole, viable viruses that can infect other people, or just viral debris. If it's the latter, it isn't infectious. Recently the World Health Organization said there had only been 1 report of a group being able to isolate whole virus. (I don't know the reference)

It takes time to see if you can grow virus from a stool sample and most studies don't go this extra step. One that did, from a very good group in Germany, (it was published today) was not able to isolate virus from stool.

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Apr 1, 2020 11:40 AM Comment by Camilla Buchanan

How long must a person who has recovered from test-positive COVID wait until they are considered to be non-infectious?

Sharon Begley

A paper from Germany, published today, tries to get at this. In short, they found high levels of virus replication in upper respiratory tract tissues, and high levels of viral shedding, during the first week of symptoms, and could isolate an infectious form of the virus from the throat and lungs until day eight of symptoms. But 2 patients continued to shed high levels of virus in sputum until day 10 or 11. So the 2 week guideline is still reasonable.
Apr 1, 2020 11:38 AM Comment by Vikas Dandekar

one more: This is about writing stories...All journalists at Stat have been so good in covering this outbreak. How do you plan? How do you manage such excellent reporting?

Helen Branswell

We have excellent editors.

Apr 1, 2020 11:35 AM Comment by Diana Ermel

Early on I downloaded a graph of prevalence of symptoms, fever, dry cough very common, things like headache low around 13 %. Is there newer info on this?

Helen Branswell

The data from various countries seems to be pretty consistent. Fever & dry cough & are the most common symptoms; body aches are pretty common too. Other things like diarrhea, headache, are less common. CDC's info on symptoms is here. Interestingly, loss of the sense of smell and sometimes taste) is a symptom a lot of people report.

Apr 1, 2020 11:34 AM Comment by Nancy I.
Is there evidence of long-term lung damage following COVID-19? Is there any evidence yet from China regarding the degree of immunity to the coronavirus following recovery, and whether it is dependent on the severity of illness?

Helen Branswell

t’s too soon to know whether people who have Covid-19 will suffer a long-term decrease in lung function; the disease has only been with us for a few months. There may be some clues in the experience of SARS, the 2002-2003 outbreak caused by a related virus, but it looks like there wasn’t a lot of long-term followup of SARS patients. In Toronto — where I worked during the 2003 outbreak, the experience of survivors was really mixed. Some recovered fully, some never regained full strength or lung function. This 15-year follow up of 71 health workers in China found there was improvement of lung function initially but the gains plateaued pretty quickly and lung function remained at 2006 levels in 2018.

It is known that the immune system starts to generate a response to this virus pretty quickly, within about seven days of symptom onset. That may be most people don’t develop severe disease. But how long that immunity will last is still an open question. Also unknown: If duration of immunity relates to severity of disease.

Apr 1, 2020 11:33 AM
Comment by Susan

My daughter is 25 weeks pregnant. Is there any information re: how her baby could be affected if she got covid-19?

Helen Branswell

Congratulations. I'm sorry your family's joyous time is tinged with
this stress.
There's not a ton known yet about pregnancy. So far it looks like most pregnant women and their babies reported on to date have been fine, but obviously caution is very important.
I wrote about several reports of pregnant women & their babies just last week. You can see it here. We'll monitor that question closely.

Apr 1, 2020 11:31 AM
Comment by Matt B

What is the status of clinical trials that are not for COVID-19? Like cancer, or diabetes?

Andrew Joseph

I can't say this is what's happening with all trials, but many have suspended enrollment or been delayed. I know some companies/medical centers are only continuing with trials that have started and involve treating patients with experimental drugs.

Apr 1, 2020 11:31 AM
Comment by Nicholas F.

China's flattening of the curve is giving many hope that we will get through quickly. Are there models that give insight into the day-over-day infection numbers in China? How long until another country "gets over" a peak so we have a sense of what recovery looks like?

Helen Branswell
It is certainly true that a lot of people distrust China. It’s also true that even if they were completely honest about their numbers, the number of confirmed cases there would not be the true number of infections. That’s true everywhere. Mild and almost symptom-free cases are hard to count in cases like this. Modelers at the University of Hong Kong have estimated the Chinese mainland probably had more than 230,000 cases, nearly 4 times the confirmed number.

That doesn’t mean they lied. The real case count in the United States is undoubtedly some number of multiples above the number of positive tests that have been run here.

But on the issue of flattening the curve, other places have done it. Hong Kong hasn’t yet had exponential growth — that kind of explosion of cases so many countries have had. Singapore & Japan have also kept cases low. The Bay area in Northern California is reporting the growth in cases is slowing. These measures are painful but physical distancing does appear to work.

Apr 1, 2020 11:31 AM

Comment by Colin S

You’ve all written about so many aspects of this pandemic, what areas or articles would you like to write that you just haven’t had time to get to?

Andrew Joseph

Thanks for this. STAT is a small team, and this is such a big story that we can’t cover it all. This doesn't really address your question, just because we wouldn't be equipped to do this from here in Boston, but I've been so amazed by the reporting coming out of places like Italy and China that have shown how devastating this virus and its impacts can be on communities, and
all the ripple effects it can have. I’d also put a plug in for all the local journalists covering how the outbreak is affecting their communities and hospitals. Definitely support your local news organizations!

Apr 1, 2020 11:30 AM  
Comment by CD

Thanks for doing this, and thanks for your patience. It seems that people don't want to hear what we all know, . . . this is a brand new (mutating) virus, so we DON'T KNOW so many things! No need to post this, just expressing my empathy.

Helen Branswell

Thank you for noting that. It's a really important observation. We still have a lot to learn about this virus.

Apr 1, 2020 11:28 AM  
Comment by Al G.

What is the probability that China already has a vaccine?

China is working on a vaccine. They’ve already started human trials. But the same is true with one of the vaccines being developed in the United States. Making new vaccines is a tricky business. Just because you are testing one doesn’t mean it will succeed. It might. But there are no guarantees with vaccines.
Apr 1, 2020 11:28 AM  Comment by Brad

What types of mitigation do you expect to see in the fall when transmission picks up. Travel restrictions, concert and other social gathering restrictions, residential college campus shutdowns, isolation of the most susceptible, surveillance, etc

We don't yet know if transmission will wane in the summer. Too soon to predict the fall, I'm afraid.

Apr 1, 2020 11:28 AM  Comment by Joel C.

Is this going to be a one-time event, or is this now an ongoing disease we will be dealing with?

This virus is probably going to be a regularly circulating human virus now. The hope is that as more of our immune systems recognize it, it causes less severe disease.

Sharon wrote about what the future scenarios with the virus might be [here](https://stat.liveblog.pro/lb-stat/blogs/5e7de3b80a96ff833e326b9...).
Is anything known about how long the virus can last on common food items like fruit and vegetables?

Sharon Begley

Here's the most specific thing I've seen regarding surfaces; they didn't do fruits and vegetables.

<table>
<thead>
<tr>
<th>Surface</th>
<th>Reduction of Infective Does by 100 Fold</th>
<th>Complete Loss of Infectivity of a Infectious Dose of Approx. 100,000 Infectious Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>30 minutes</td>
<td>3 hours</td>
</tr>
<tr>
<td>Wood</td>
<td>6 hours</td>
<td>2 days</td>
</tr>
<tr>
<td>Cloth</td>
<td>0.5-3 hours</td>
<td>2 days</td>
</tr>
<tr>
<td>Glass</td>
<td>1 day</td>
<td>4 days</td>
</tr>
<tr>
<td>Banknote</td>
<td>6 hours</td>
<td>2 days</td>
</tr>
<tr>
<td>Stainless steel</td>
<td>1 day</td>
<td>4 days</td>
</tr>
<tr>
<td>Plastic</td>
<td>1 day</td>
<td>4 days</td>
</tr>
<tr>
<td>Mask (outer layer)</td>
<td>4 days</td>
<td>7 days</td>
</tr>
</tbody>
</table>

The highest risk has clearly been older adults (over 65?) and those with major illnesses (auto-immune, cancer, etc). What about adults (35-50) with ailments they live with that are not as serious. For example, asthma and diabetes? What is best source for these demographics?
The U.S. has been very, very slow to gather and analyze these data, unfortunately. As a result, for now there are no calculations of how much any given underlying illness raises the risk of severe Covid-19, hospitalization, etc. That leave us with the (imperfect) data from China, where researchers at least took a stab at estimating those increased risks. I wrote about them here. Short answer: asthma or type-2 diabetes at any age seems to increase risk. So does age, as I explain here, but with the caveat that chronological age does not equal biological age.

Comment by Cathryn D.  

Is there evidence that the virus can be transmitted from mother to baby through breast milk?

It’s still early days with this virus. There’s a lot left to learn and some things we think we know now will probably turn out not to be true. That said, so far there haven’t been reports of virus in breast milk. In fact, there have been reports that it hasn’t been found in breast milk. The numbers of breast milk samples tested, though, remains small. You can find some data here and also here.
Is there a chance we will see multiple peaks if we stop aggressive social distancing prematurely? For example the largest peak on April 16th, then another smaller peak in early summer?

Yes. There is very much a chance that could happen.

How many strains of the virus have been identified and is there evidence that some are more virulent?

You can follow the genetics work here. Botton line: a number of nucleotide changes have been detected, but that's of interest more for tracing the pandemic. The things to look out for are mutations that affect infectivity or pathogenicity (i.e. how serious the resulting illness is) or, relatedly, the spike protein that vaccines hope to target. So far none of that has been seen, thankfully. And there is reason to think pathogenicity will not increase: the virus is better off, evolutionarily, if it keeps its hosts alive and well enough to be out and about, infecting other people. Killing the host right away works at cross purposes to that.
We are over 70 healthy. We are fortunate that we could relocate ourselves to a different area that has much fewer cases. How do we determine if we are actually reducing our risk by moving?

Hi there. We can't really assess the risk of any individual situations, but these are some things that came to mind that might be useful to think about.

First of all, places that appear to have fewer cases might not actually have fewer cases. The messed up testing situation in the United States (though maybe you live elsewhere) means we don’t have a full picture of the virus’ spread. Plus, places that seem OK now could be the center of the emergency in a few weeks. Experts are saying this is increasingly going to be a national outbreak. Local features will determine the scope of the regional epidemics, but it’s likely going to be everywhere in the coming weeks and months. I wrote about that today here.

You might also want to think about access to care in either place and hospital capacity.

Another factor to consider: Could you unknowingly bring the virus to that area with fewer cases? That fear has led governors in some states to ask people arriving from particular regions (and in some case all new arrivals) to quarantine themselves for 14 days.
Please summarize progress to develop a CV 19 vaccine.

There are a lot of groups working on developing vaccines but it is still early, early days. Two projects are already in clinical trials — meaning the very first tests in people have begun. But those tests, called Phase 1 trials, are always small and only designed to indicate if its safe to administer the vaccine to people. They cannot tell us anything about whether the vaccine is effective. That takes larger trials that will come later.

One of the groups already in Phase 1 is in the US. The other is in China. I don’t know much about the capacity of the Chinese manufacturer. The US based one doesn’t currently have capacity to produce the vaccine in commercial scale, though I’m sure people are working to figure out how to do that. Johnson & Johnson is also working on developing a vaccine it hopes could be ready in about 18 months, I think.

The World Health Organization is keeping tabs on the various projects. You can find their list here.

Apr 1, 2020 11:24 AM

Comment by Jenny P.

Is there anything I can do to boost my immune system?
Exercise is an immune booster, and so is sleep. Poor sleep hurts adaptive immunity, the B and T cells that ‘learn’ to defend against a new pathogen. Stress, unfortunately, weakens the immune system. There are a lot of one-off studies of things like lavender and lemon oil, but the weight of evidence says those are unlikely to help much.

Apr 1, 2020 11:22 AM
Comment by Susan D.

We know daily how many have been diagnosed with Covid-19 -- does the data show how many have recovered?

A number of trackers include this, such as this for the world (breaking out the number of recovered in each country) and this for the U.S.

Apr 1, 2020 11:23 AM
Comment by Susan M.

Why is the U.S. not following the South Korea model and doing mass testing of everyone, regardless of symptoms, to find out if they either have the disease or the antibodies - is this simply due to the shortage of tests or is it because current research shows this is not the best approach?
The reason testing has been so much more limited in the US is because of the shortage. The initial problems with the CDC test and the time it took to fix them has created a tragedy.

Apr 1, 2020 11:15 AM  Comment by Elmes

If I suspect that I’ve already had the virus can I contract it again?

We're getting a lot of questions on acquired immunity, so let me put what we know here. It’s a crucial question with no clear answer yet. Fwiw, during a recent webchat an infectious disease expert at the University of California, Berkeley, said this: “Based on what we know about other respiratory viruses, the answer is, no, you can’t get it again; you have neutralizing antibodies. I’m fairly optimistic we will probably develop immunity for some period of time after an infection.” Of course, we don’t know that for sure, though there have already been calls for cured patients to come to the front lines. One big caveat: elderly people might not develop enduring immunity, as I discuss here.

Apr 1, 2020 11:18 AM  Comment by Mary Wise

Has there ever been a successful vaccine for a coronavirus?
There are no licensed human coronavirus vaccines. The 4 coronaviruses that infected people up till now cause mostly mild disease, like colds. SARS went away, and so did the demand for a vaccine. MERS causes sporadic cases in the Arabian peninsula, but the demand for a human vaccine hasn’t been big enough to pull one through the pipeline.

Apr 1, 2020 10:47 AM Comment by Petter H

Could another Coronavirus have given some immunity to those who have mild disease? I think the same happened under the spanish flu where old people didn’t get as sick due to immunity built up from an old virus.

Researchers are still trying to figure out why some people have mild disease and some get really sick. There are known risk factors like age and underlying health status, but experts are trying to see if, for example, genetics plays a role in either protecting us or leaving us vulnerable. Another hypothesis is that it depends on the viral load — essentially, a higher level of virus in our system will make us sicker.

For context for your question, there are other coronaviruses that infect people — two (SARS and MERS) that have caused regional outbreaks but for now have been controlled and four that are endemic and cause roughly a quarter of all the colds we get every year. Because this coronavirus that causes Covid-19 is so new, researchers don’t know yet whether being exposed to one of those other viruses provides some cross immunity to this one. But most experts I’ve spoken with have described this as a new virus, one that’s related to other coronaviruses, but not like a new strain. The thinking is that no one was previously immune to this (though again, there’s a lot of research to be done).
Apr 1, 2020 11:16 AM  Comment by Thomas Seoh

Will this entire chat transcript be posted and available?

Yes, the live chat will be posted here.

Apr 1, 2020 11:12 AM  Comment by Al

Can someone that does not have SARS-CoV-2 partake in any clinical trials

Many clinical trials, certainly for vaccines, need healthy participants. At last count, some 260 trials for Covid-19 were registered at www.clinicaltrials.gov. You can find them here, and see what kind of participants they're looking for.

Apr 1, 2020 11:17 AM  Comment by Patrick L.

How are you all doing during the pandemic? Given the news is everywhere, at every given time, it must be difficult to unplug and take a
moment for yourselves. How do you decompress and center yourselves ahead of another day/week/interview focused on COVID-19?

Thanks for asking, Patrick. I think everyone is going to need to be needing to look after their mental health, as well as their physical health, during this hugely challenging period. We’ve been going flat out since about mid-January. We take turns covering the story on weekends. And this is only just the beginning. So, it's a lot.

There have been days I’ve just had to pull back to try to slow down. I try not to watch cable news — I may be missing some stuff but it is just too cortisol-inducing. When the weather permits and I have time, I go for a bike ride. Like a lot of people, I think, I’m in much more regular contact with family and friends. That is replenishing. Stay well.

Apr 1, 2020 10:46 AM

Has the Northern California Bay Area made a significant impact on curtailing the spread of COVID-19 through the early adoption of shelter in place policies?

It’s too soon to know for sure, given that the impact of any response measure won’t be fully felt for a few weeks. However, some local officials and doctors are saying that there are early signs the Bay Area’s curve appears to be flattening. (Here’s a good Politico story on that). We hope that’s the case. When the Bay Area issued its shelter in place orders in mid-March, it was the first region to do that in the country. But soon
the whole state was under a similar policy, and now more than half of states are as well. If the Bay Area is successful in slowing the growth of new cases, it will validate local authorities’ strategy. They will need to keep up the pressure on the virus, however, as lockdowns are lifted if they want to minimize future waves of spread.

Apr 1, 2020 11:09 AM Comment by Amy

Do you think we'll see the CDC reverse its initial guidance on civilians wearing masks?

Currently the CDC still is not advising that the public wear masks, except if someone is feeling unwell. In other words, masks should be worn to keep people from spreading illness.

There is a lot of pressure, though, for that position to change. I think it likely will, in the near future. Watch this space.

Apr 1, 2020 11:12 AM Comment by John G.

It is likely there are many unreported cases of COVID, due to asymptomatic individuals, those with minor symptoms, and a scarcity of tests. How are experts and modelers incorporating this unknown denominator into their analyses and forecasts?
There absolutely are unrecorded cases. How many is still an open question and it may vary from place to place. There may be fewer unrecorded cases in South Korea, which has tested extensively — almost 400,000 people as of yesterday. In the United States, where testing was slow to start, there are probably more unrecorded tests.

Modelers use formulas to try to fill in the gaps. But the real way to find out how big the denominator of this outbreak is, how many people were probably actually infected, is by testing the blood of people who were never recorded as cases to get estimates by age group and geographic locations how many people were actually silently infected. That kind of study is called a sero-survey, and Drew is going to be answering some questions about that kind of research.

Apr 1, 2020 11:12 AM

What do the various epidemiological models suggest on the pandemic peaking in the US. What is the range most optimistic and worst case suggest? What are the odds of needing more than the 100k estimated ventilators in the country?

There is no shortage of models, but one I’m paying attention to is from the Institute for Health Metrics and Evaluation, here. (It was reportedly influential in getting the White House to extend the national recommendation on social distancing for another 30 days.) It shows that the demand for hospital beds, ICU beds, and ventilators will peak on April 15, at 220,643; 32,976; and 26,381, respectively (there are error bars around all of those: hospital bed need could be as high as 350,000). Their worst-case estimate for
ventilator need is just under 50,000.

Apr 1, 2020 11:09 AM  Comment by Linda

if i am tested and covid free ... can i am assume i am covid-resistant?

No! That probably means you just weren't infected with the virus at that time. Presuming you got a test because you were showing symptoms, there are a number of other infections that could have been causing them. As of now, it's not known how anyone could have inherent resistance to this virus. So please don't assume that.

Apr 1, 2020 10:51 AM  Comment by William M.

Do we not need a chief medical officer for the government?

There are a lot of health “generals” already. I think all of them are serving on the White House's coronavirus task force. There’s the director of the Centers for Disease Control and Prevention, Dr. Robert Redfield. And the Surgeon General, Dr. Jerome Adams. There’s Dr. Fauci from the National Institute of Allergy and Infectious Diseases, and HHS Secretary Alex Azar. I’m not sure another figure would make a difference at this point.
What were the findings from drug clinical trials in China tested to treat covid-19?

There aren't a lot of data on clinical trials in China that have come out. They had some trouble enrolling enough patients and in some cases they didn't do randomized controlled trials — testing drugs against a placebo — so the data generated don't tell a lot about whether anything worked. There was a study in the New England Journal of Medicine saying that the drugs lopinavir-ritonavir (HIV drugs) didn't help. But that study acknowledged the question is still open about whether they could. The study enrolled super sick patients, as it turned out. The authors suggest the drugs should be tried in people who aren't as sick as these patients were; the combo might still be useful.

How vigilant do we have to be about cleaning deliveries, mail, groceries coming into the house?

It’s important to remember that the primary means of transmission is person-to-person contact; an infected person coughs on you, shakes your hand, etc., and virus particles make their way into
your nose, mouth, or eyes. Infection via objects is secondary, but the risk is not zero. Lab research has found that the new coronavirus, like its SARS-causing cousin, can survive on surfaces (plastic, stainless steel, cardboard copper) for days, but the amount plunges quickly, as I explained here. So, precautions: treat everything you bring into your home as possibly carrying virus. Perhaps someone in the grocery stockroom, or the person delivering it to your door, was infected and accidentally coughed on it. Discard any wrapping, boxes, or other containers. Then wash your hands with soap and hot water. Food containers are a tougher call; do you need to decant your OJ into a new bottle? Probably not, but it wouldn’t hurt to wash the outside before putting it in the fridge; again, wash your hands after. Paper mail? Open, discard, wash your hands. Cereal boxes and other containers made of unwashable cardboard? That’s a tougher call, but it would not be amiss to stash them away from other food for two days; in that time the amount of virus will have dropped to extremely low levels. If you want to consider a more extreme solution, here’s a video that explains how to use bleach on things (not paper) that come into your home.

Apr 1, 2020 10:45 AM

Comment by Emanuel C

When will widespread antibody testing be available in the US.

This is a question we got a lot, and I’ve been getting a lot of emails about since I wrote about these tests in this story. I’ve been really impressed — a lot of people who think they’ve had Covid-19 want to verify whether they were infected or not so they can help.

For background: antibody tests are different from the tests being
used to diagnose active Covid-19 cases. The tests (also called serological tests) can tell if someone was previously infected by looking for specific antibodies in the blood — evidence that the immune system was exposed to the virus and mounted a response. This is important because people who have an initial infection are assumed to be immune for probably a few months or years at minimum, meaning they could go back to work or treat other Covid-19 patients more safely. The tests can also show how widely the virus has spread in an area, which will be particularly important in places like the United States where testing for active infections has been so limited. Plus, blood from survivors is being explored as a possible treatment for current patients (this type of therapy is sometimes called convalescent plasma).

Unfortunately, I don’t have a great answer for your question about national availability. Some academic researchers have developed antibody tests and are starting to deploy them. Private companies have developed them too, but it’s not clear how they’re being used at this point. The CDC has said it’s working on antibody tests but hasn’t provided details of their rollout plans. Some local health departments are working with universities and hospitals on antibody testing in their areas (here’s a Miami Herald story on that). Then there’s an effort called the National Covid-19 Convalescent Plasma Project. It’s up and running in parts of New York now (there are more details in this Atlantic story) and will hopefully expand. Having antibody tests become widely available will help increase the number of potential donors for convalescent plasma. Blood centers are preparing to collect plasma from people who recover.
What is the status of the search for the reservoir species of the novel coronavirus and how might that discovery contribute to combatting the virus?

The strongest evidence still points to bats, with pangolins as a possible intermediary species. That’s probably not going to be much help in developing therapeutics or vaccines. That work is based more on the characteristics of the virus itself, including the molecular structure of the surface (‘spike’) protein that docks with receptors on human cells (the ACE2 receptors). A number of labs are developing monoclonal antibodies to the binding site on the spike proteins, and vaccines targeting that are also in the works.

Apr 1, 2020 10:51 AM Comment by William K.

How much more dangerous is covid-19 than the annual flu, e.g., what is the death rate from covid-19 compared to that of the annual flu?

The argument that this outbreak is less dangerous or on a par with seasonal flu is both wrong and could cost lives. Seasonal flu kills, on average, 0.1% of people who become infected. Between 3%-11% of people in the United States are infected with flu each year.

The most recent estimate for this virus is that about 0.66% of people infected die. So 6.6 times more. And that’s across all age groups. The death rate among people in their 70s, 80s and beyond is very high, into double digits.

But the really important thing to remember is that no one in the population has any immunity to this virus. So instead of 3% - 11%
of people getting infected, 20% to 60% of people — that’s an estimate — will be infected as this moves around the world. Many times more people will be infected, and many times more people will die. And the crush of cases will affect the care hospitals can give to people in car accidents or women with complicated deliveries or people newly diagnosed with cancer. People with chronic diseases.

This is not the flu.

Apr 1, 2020 10:30 AM  Comment by Thomas F.

What are the likely exit scenarios? (I don't think Easter Sunday, April 12, is going to be it.) How do we best operate once initial onslaught has been beaten down and before a vaccine is widely available?

You are right: Trump said on Sunday that the national guidelines on social distancing would remain in place through April 30. That said, there is more and more effort to figure out how to tiptoe back to normalcy without allowing a resurgence of the epidemic. I covered some of the ideas here, but the basic idea is this: keep testing. Test much more than the US has managed to do. Augment that with self-reported symptoms (a proxy for cases), anonymized and uploaded to a centralized database so experts can detect hotspots as soon as they start to emerge. Have such people isolate themselves for 2 weeks. Identify those who came into contact with the infected individual, such as through location data from phones. Alert them to isolate themselves. If that sounds complicated, it is, as two experts at the Bloomberg School of Public Health at Johns Hopkins University explained in a New York Times op-ed on Monday, but other countries have managed it. Want a simpler solution? An analysis of Wuhan concludes that
the severe restrictions there can be lifted three weeks earlier if more than 85% of the population wears face masks than if “only” 75% do. That research is here.

Apr 1, 2020 10:52 AM

Comment by Alyssa F.

Why does everyone expect the pandemic to improve in the summer and then get worse again in the fall? What is it about the summer that is better?

A lot of respiratory viruses don’t transmit as well or much in the summer. Influenza, for instance, really trails off in late sprint, and then picks up again slowly in the autumn until it reaches a pitch at some point in the winter, sometimes before Christmas but often after. Many respiratory viruses seem to take off when kids resume school in the late summer. Why that is isn’t fully known, but there are probably multiple factors involved: Human behavior (ie not inside as much)& humidity & temperature, which could affect the viruses. This is a fascinating article on the topic.

It’s a hope, mostly, that this virus might not spread as well in warm weather. Because it is spreading in some places that are warm, like Florida. Some infectious diseases experts hope it will transmit a little less well in the summer, giving us more help to flatten the curve.

But it should be noted that during flu pandemics, new strains of influenza have been seen to spread in the off season — summertime. The thinking is that the fact that so many people are susceptible means they can overcome any limitations warmer weather throws at them. And the fear is that will also be true with this virus.
Does infection confer immunity? I'm interested in how effective convalescent serums might prove to be.

This is a caveat that goes with most of these questions: the virus is still so new that there's a lot that's not known definitively yet. However, most experts say that people who recover from a Covid-19 infection will probably be immune for at least some time — a couple months, maybe a couple years at least.

This is based on what is known about the other coronaviruses that sicken people. Of the four coronaviruses that cause common colds, after contracting them once, we are susceptible to catching them again a few years later. So experts think that an infection from the new coronavirus will endow at least that level of protection. It could be longer: People who recover from SARS appear to have immunity for quite some time.

There is some nuance to this, too. As years pass, it's not like people will go from immune to vulnerable instantly. They may become more likely to be infected again by the virus as their immunity wanes, but the secondary infection might also be much milder. Though as Sharon has written, older people might not get the protective benefits other people do.

One question that has been raised with Covid-19: Will the severity of infection produce different levels of immunity? Meaning, will
people who got much sicker, and whose immune systems had to rally a more sustained counterattack, be better protected going into the future?

The question of immunity is also important in the context of any future vaccine. Will the vaccine provide lifelong (or more feasibly decades-long) immunity? Or will it be something we’ll need boosters of throughout our lives?

Apr 1, 2020 10:30 AM Comment by Frank

Can someone with COVID-19 spread the virus when exhaling the smoke from cigarettes or the vapor from vaping? Could the virus remain airborne in this type of aerosol?

This has not been directly studied. But it’s clear from analyses of air samples and surfaces that people infected with the new coronavirus can expel it when they cough and, probably, talk, so there is a good chance that exhaling anything from the lungs would also have this effect. And fwiw, a new study finds that smokers are particularly likely to become infected with this coronavirus, because of how chronic exposure to smoke increases the expression of the receptor through which the virus enters airway cells. As for airborne lifetime, not zero but not long: one study (not of smoke/vapor exhalation, though) found very, very low levels after more than an hour. Viral suspension in vaping vapor would be worth studying.
Hi. Thanks so much for joining us today. Sharon Begley, Drew Joseph, (you know his byline as Andrew) and I are going to do our best to answer as many of your questions as possible. We got hundreds in advance and there are a lot of you registered here. So apologies in advance if we don't get to all of your questions.

There was a lot of repetition in the questions we got in advance — a lot of interest, for example, in when antibody tests are going to be available. Drew has been looking at that. Do read through our answers because even if you don’t see your name, we may have answered your question. Let’s get going!