

LIFESTYLE // RENEW HOUSTON / HEALTH

Texas A&M pandemic expert: Coronavirus will have 5 stages. We're in stage 2.

LISA GRAY

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Texas A&M vaccine expert Gerald Parker, outside the World Health Organization's headquarters. The statue salutes vaccine pioneer Edward Jenner.

Photo: Courtesy Gerald Parker

It's been a little over two weeks since Harris County issued a stay-at-home order. And one model shows that we still have two weeks to go before our area's COVID-19 cases peak.

Houstonians are wondering: How will we get our lives back?

To discuss that, we called Gerald Parker at Texas A&M, where he directs the Bush School's biosecurity and pandemic public policy program and is associate dean of Global One Health. He's also served for decades in federal government. In the U.S. Department of Defense, he was deputy assistant for chemical and biological defense. And at the Department of Health and Human Services, he led efforts to prepare for public health emergencies.

This interview has been edited for length and clarity.



Coronavirus Chronicle

Five stages of pandemic response. (We're at nu
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You've said that you expect our current pandemic to have five phases. Could you explain what those are, and where Houston and Texas are on that timeline?

The first phase is containment. That's when we try to keep the virus from entering our area and try to keep it from spreading in the community.

Containment really started at the end of January, when the United States declared a public health emergency, and the president imposed traveled travel restrictions and travel bans from China. That was to try to slow the spread of the virus from China into the United States. And it did.

That's where our public health authorities ramped up their capability to identify patients, isolate and care for them, and also do contact tracing.

But clearly, some time late February, the U.S. had an inflection point: "community spread." Once we had widespread human transmission in the United States, it overwhelmed the ability of public health to do individual, case-by-case containment.

So we transitioned from Phase One, containment, to Phase Two, mitigation. We are clearly in the mitigation phase now.

The primary purpose of mitigation is to slow the spread of virus within our communities. What you're seeing now is a lot of activity to try to prevent our hospitals from being overwhelmed caring for those patients who get really, really sick from COVID.

That is the purpose of the aggressive social-distancing measures, like closing schools, universities going to distance learning, asking that people avoid large gatherings, closing businesses except for essential functions.

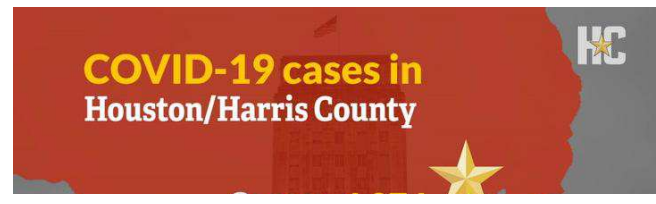
We've also seen action to mitigate the virus's economic impact — to provide economic relief and keep people employed.

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'COVID-19 in 60': Houston coronavirus news in a minute

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Those of us stuck at home, or worrying about our jobs or the economy, are very ready to exit this phase. What are the next phases? How do we get out? How can we safely begin to reopen some schools and businesses?

Phase Three would be (a second stage of) containment before we have a vaccine to deploy. I'm optimistic that in three to six months we'll have (a better treatment for coronavirus symptoms), a therapeutic in our toolkit that can rescue those who become severely ill.

But it's going to be at least 18 months, I believe, before there's a vaccine available to deploy in any meaningful way.

While we wait for a vaccine, we'll enter a second stage of containment. During this time, we need to restart our economy -- and we need to do it safely.

What's essential to go the next phase is greatly expanded lab testing— both the antigen and the antibody lab testing— so we can have a much better view of what's happening in our community. Despite the rapid advancement that's occurred in lab testing over the last month, we're still catching up. And without the lab testing, we're still almost blind to what's really happening in our community.

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I think everybody is now familiar with the epidemiology curve— the curve from “flattening the curve”— and its peak. Once we're on the other side of the peak, once we're seeing a decreasing number of cases, we'll be back in a position where we can attempt to contain the virus in our communities with surgically applied social distancing measures— not community-wide social distancing measures.

We're going to have to target new infections more aggressively. We're going to have to isolate those and do contact tracing. It takes a lot of resources to do that.

Our public health authorities don't have the manpower to do this. We need a lot more public-health soldiers.

What will life be like during that phase?

We're gonna have a new normal. We're all going to remember how important personal hygiene is— hand sanitizers, cough etiquette, the importance of washing our hands often for 20 seconds with soap and water.

We're probably also going to do more cleansing and disinfection of our public spaces, like you see in other countries— our subway systems and mass transit, and things like that, where there's a lot of people. We'll seriously consider cleaning and disinfection of public places where we haven't done really that that much in the past.

What does vaccine development look like now?

There are three vaccines that are actually in Phase Three clinical trials already, and there's at least 20 more that are in the laboratory phase of development, waiting to go into clinical trial. I'm hopeful that one or two of those will make it all the way.

So what's the next phase?

Phase Four is (a third stage of) containment once we have a vaccine.

We're going to get into a situation like we're used to with seasonal flu, because I don't think COVID is going away. In fact, I think we should anticipate that we're going to have a second wave in in the fall.

We may see a seasonal periodicity with COVID-19, like we see with seasonal flu. Our scientific community cannot say that for certain yet. But I think that's the predominance of the scientific thinking right now.

Having a vaccine to deal with this virus as it evolves is going to be important, but we know how to live like that. Coupled with our personal hygiene, we'll be in a much better place.

And then we have to prepare for the next pandemic?

We do. We do. That's Phase Five: Making preparation for the next pandemic a national security priority.

Unfortunately, we've entered a period where emerging infectious diseases are increasing with alarming frequency. Go back to the first coronavirus: Recall the major problems with SARS in 2000 to 2003. That was supposed to be a wake-up call for the world to be ready for these things.

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Unfortunately, I don't I think we got the message. We got complacent afterwards. But then we had a H5N1 avian influenza We actually had a pandemic in 2009 with H1N1 influenza. We had Ebola from 2014 to 2016. We've had MERS. We've had Zika. We have Ebola again in the Democratic Republic of Congo.

COVID-19 became the nightmare scenario that many of us in the community have been afraid about. Now we know we have to go into Phase Five, pandemic preparedness, with renewed vigor.

Much of our national pandemic security plan dates back to 2006. To the George W. Bush White House. You were part of the large team that helped prepare that. Could you talk about that?

Yes, I had the privilege and honor to work with an outstanding team of scientists and executives. There was an avian influenza, H5N1, that was very, very concerning at the at the time. We were seeing outbreaks in Southeast Asia. Whenever that virus spilled over from poultry into humans, there was 50 percent mortality.

Fortunately, it was just animal-to-human and not human-to-human. But it wouldn't have taken too many mutations for it to go from human to human. That would have turned into a very serious pandemic very quickly.

So under President Bush, 43, we embarked on an aggressive pandemic preparedness strategy implementation plan. Congress appropriated \$7 billion through an emergency supplemental that was requested by President Bush.

I was in the Department of Health and Human Services as a deputy assistant secretary for preparedness and response, so I helped develop part of that. But it was a whole-government effort— actually, a whole-society effort. It included state governments, local

It was extremely aggressive. We had a national strategy, and national implementation plan that had over 300 action items. The implementation plan is still available on the web: it was a 250-page implementation plan with very detailed action items. It clearly spelled out who had lead responsibility, then who had supporting responsibility across the the federal government, state government, local government in the private sector. We made a lot of progress.

When the pandemic happened in 2009, we were able to pivot that work to address the 2009 pandemic. We were lucky because the virus turned out to be not as serious as we first thought it was when we first started seeing the cases in Mexico and even in Texas. But as the virus spread around the world, we were able to pivot a lot of that work to address the pandemic in that time.

That was during a period where we changed administrations, from the Bush administration to the Obama administration, but it was a seamless transition because the plans were there. The Obama administration was able to pick up the plans.

What's important about that is, it was really the first time in human history that a society made a commitment to try to be as prepared as we can for a pandemic.

Since then, you've thought a lot more about what we need to be doing to prepare for future pandemics. I saw a 2018 paper in which you mentioned the weakness of supply chains and the nightmare scenario that what if, say, a region in Asia that produces a lot of medical supplies suddenly was itself hit by a pandemic. Could you talk more about those supply chains?

I think we are seeing the dangerous vulnerability of our supply chains. Even before COVID happened, over 80% of the active ingredients for all of our pharmaceuticals are sourced in China. That's a dangerous dependency on one country.

The same goes for personal protective equipment. Most of the world's N95 respirators — the masks that medical workers are in dire need of right now — are manufactured in China.

COVID-19 has been a wake-up call. Some of the pharmaceuticals that we need and the N95 masks have been nationalized by China. It's no surprise that they nationalize those

The same thing happened to the U.S. during the 2009 pandemic. We at HHS had a contract for influenza vaccines with an Australian manufacturer. Despite our contract delivery requirements and so forth, our deliveries were delayed until the Australian population was covered.

So we've got to address this dangerous vulnerability for national security with pharmaceuticals. We should not be relying on just one country for some of our basic pharmaceuticals, like heparin.

There's a lot of legislation already in Congress to begin to address this. There probably will be an increase in the prices we pay for some drugs. But we're going to have to incentivize industry in a way that they will want to make some of these things in the United States.

We cannot rely on having everything manufactured in China. But we essentially are now.

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COVID-19 Registry



The COVID-19 Registry is a research study that provides real-time information to health departments on the spread of COVID-19, who is being affected, and how.

The COVID-19 Registry will help to:

- Track virus spread over time and across geography
- Measure economic and health impacts
- Anticipate healthcare needs as the pandemic unfolds
- Understand behavior in response to policy changes
- Identify popular and effective sources of information

Data from the registry will be stored in a highly secure system built by Rice University. Things that we learn from the registry will be published, but will not include any information that would identify you or any other participant.

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about 10 minutes to complete a survey.

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What are some of the other things you've worried about with pandemics? What are other issues that we need to address to prevent future ones?

We have in our grasp the technologies that can prevent an outbreak anywhere in the world from becoming a major epidemic or pandemic. I don't think we have the political will yet to do it.

It will require an investment in international development. Most of these dangerous viruses emerge in low-income countries that have very little health infrastructure, very little public health infrastructure, very little animal health infrastructure to do the basic diagnostics and surveillance — early detection and response to stamp it out before it spreads.

So that's going to require international development, investments global health security.

We will also have to have a lot more tech — investment in technologies here, so that we can have rapidly scalable vaccine development and manufacturing capabilities.

Is there anything else that's on your mind now? Anything else you want to add?

Yes, absolutely. We've had lessons observed over and over: SARS, the 2009 pandemic, Ebola, Zika, and so forth. I say “lessons observed” very purposefully. That's different from “lessons learned.”

We've observed things, but we haven't really turned them into lessons learned.

lisa.gray@chron.com