

## PANDEMIC Qs

## Fauci's straight talk

To many watching the White House press briefings on the coronavirus pandemic, veteran public health expert Anthony Fauci has become the voice of science and reason on how the country should respond. He made national news this week for his careful but candid assessment to *Science's* Jon Cohen of the challenges of working for President Donald Trump during the crisis. "When you're dealing with the White House, sometimes you have to say things one, two, three, four times, and then it happens. So, I'm going to keep pushing," says Fauci, longtime director of the National Institute of Allergy and Infectious Diseases. His full interview is at <https://scim.ag/QAFauci>.

**Q: The first question everyone has is how are you?**

**A:** Well, I'm sort of exhausted. But other than that, I'm good. I mean, I'm not, to my knowledge, coronavirus infected. To my knowledge, I haven't been fired [laughs].

**Q: How are you managing to not get fired?**

**A:** To [Trump's] credit, even though we disagree on some things, he listens. He goes his own way. He has his own style. But on substantive issues, he does listen to what I say.

**Q: You've been in press conferences where things are happening that you disagree with, is that fair to say?**

**A:** Well, I don't disagree in the substance. It is expressed in a way that I would not express it, because it could lead to some misunderstanding about what the facts are about a given subject.

**Q: You're standing there saying nobody should gather with more than 10 people and there are almost 10 people on the stage [and] more than 10 journalists.**

**A:** I know that. I'm trying my best. I cannot do the impossible.

**Q: We've had all this pandemic preparedness. What went wrong?**

**A:** I think we'll have to wait until it is over and we look back before we can answer that. It's almost like the fog of war. After the war is over, you then look back and say, "Wow, this plan, as great as it was, didn't quite work once they started throwing hand grenades at us." Obviously, testing [for the new coronavirus] is one clear issue that needs to be relooked at. Why were we not able to mobilize on a broader scale? But I don't think we can do that right now. I think it's premature. We really need to look forward. ■



Dutch models of COVID-19 are designed to help prevent overloading of hospitals and the need to transfer patients.

## CORONAVIRUS

# With COVID-19, modeling takes on life and death importance

## Epidemic simulations shape national responses

By **Martin Enserink** and **Kai Kupferschmidt**

**J**acco Wallinga's computer simulations are about to face a high-stakes reality check. Wallinga is a mathematician and the chief epidemic modeler at the National Institute for Public Health and the Environment (RIVM), which is advising the Dutch government on what actions, such as closing schools and businesses, will help control the spread of the novel coronavirus in the country.

The Netherlands has so far chosen a softer set of measures than most Western European countries; it was late to close its schools and restaurants and hasn't ordered a full lockdown. In a 17 March speech, Prime Minister Mark Rutte rejected "working endlessly to contain the virus" and "shutting down the country completely." Instead, he opted for "controlled spread" of the virus while making sure the health system isn't swamped with COVID-19 patients. He called on the public to respect RIVM's expertise on how to thread that needle. Wallinga's models predict that the number of infected people needing hospitalization, his most important metric, will taper off next week. But if the models are wrong, the demand for intensive care beds could outstrip supply, as it has, tragically, in Italy and Spain.

COVID-19 isn't the first infectious disease scientists have modeled—Ebola and Zika are recent examples—but never has so much de-

pended on their work. Entire cities and countries have been locked down based on hastily done forecasts that often haven't been peer reviewed. "It's a huge responsibility," says epidemiologist Caitlin Rivers of the Johns Hopkins University Center for Health Security, who co-authored a report about the future of outbreak modeling in the United States that her center released this week.

Just how influential those models are became apparent over the past 2 weeks in the United Kingdom. Based partly on modeling work by a group at Imperial College London, the U.K. government at first implemented fewer measures than many other countries—not unlike the strategy the Netherlands is pursuing. Citywide lockdowns and school closures, as China initially mandated, "would result in a large second epidemic once measures were lifted," a group of modelers that advises the government concluded in a statement. Less severe controls would still reduce the epidemic's peak and make any rebound less severe, they predicted.

But on 16 March, the Imperial College group published a dramatically revised model that concluded—based on fresh data from the United Kingdom and Italy—that even a reduced peak would fill twice as many intensive care beds as estimated previously, overwhelming capacity. The only choice, they concluded, was to go all out on control measures. At best, strict measures might be periodically eased for short pe-

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Jon Cohen

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