Business
Prognosis

How to Move On From the Debate Over the Origins of the Pandemic

‘You’re not going to find the smoking gun’: Protecting humanity from the next pandemic means accepting both sides of the controversy

The closed Huanan seafood market in Wuhan, China, in January 2020. (Photo by NOEL CELIS/AFP via Getty Images)

By Riley Griffin
November 1, 2022 at 12:01 AM EDT

The walls were covered with hundreds, if not thousands of documents. There were maps drawn with red crisscrossing lines connecting cities in China, newspaper clippings tacked to a corkboard, pictures of bats, mice and minks, timelines stretching the length of the room. Posters were plastered over older versions of posters, each with a key deciphering colors, shapes and symbols, and stamped with the seal of the US Senate.

It was June of 2022 in Washington. Outside the Hart Senate Office Building, the near 90-degree heat was sweltering, but the conference room provided an escape from the sticky swamp. There, Robert Kadlec, the former US Assistant Secretary for Preparedness and Response under the Trump administration, known by close associates as “Dr. Doom,” had spent months

scouring documents and conducting interviews alongside men with backgrounds spanning from national security to infectious disease to laboratory safety and health policy.

More from

Bloomberg
Prognosis

Lilly Doesn't Expect to Meet Near-Term Demand for Diabetes Drug

Blood Test That Spots Concussions in 15 Minutes Makes Emergency Room Debut

How to Read Your Dry Shampoo Label to Spot Dangerous Chemicals

Is My Dry Shampoo Safe? Try These Alternative Brands

This was all at the behest of Senator Richard Burr of North Carolina, a Republican member of the Committee on Health, Education, Labor and Pensions. He'd tasked Kadlec a year prior with figuring out where Covid-19 had come from.

Kadlec has spent his whole life doing the kind of detective work that should make him qualified to solve this mystery—the flight surgeon and Air Force colonel studied tropical medicine and determined that Saddam Hussein's regime was not stockpiling smallpox in Iraq. A self-described "biowarrior," he's gone on to work for the White House, Pentagon and Department of Health and Human Services.

Last Week, Kadlec and a group of Senate staffers released an initial report that argues that the Covid pandemic was probably the result of a lab leak in China. Its release foreshadows months, if not years, of partisan clashes and additional probes of the virus's origins.

But, as Kadlec himself acknowledged in a June interview, "You're not going to find the smoking gun."

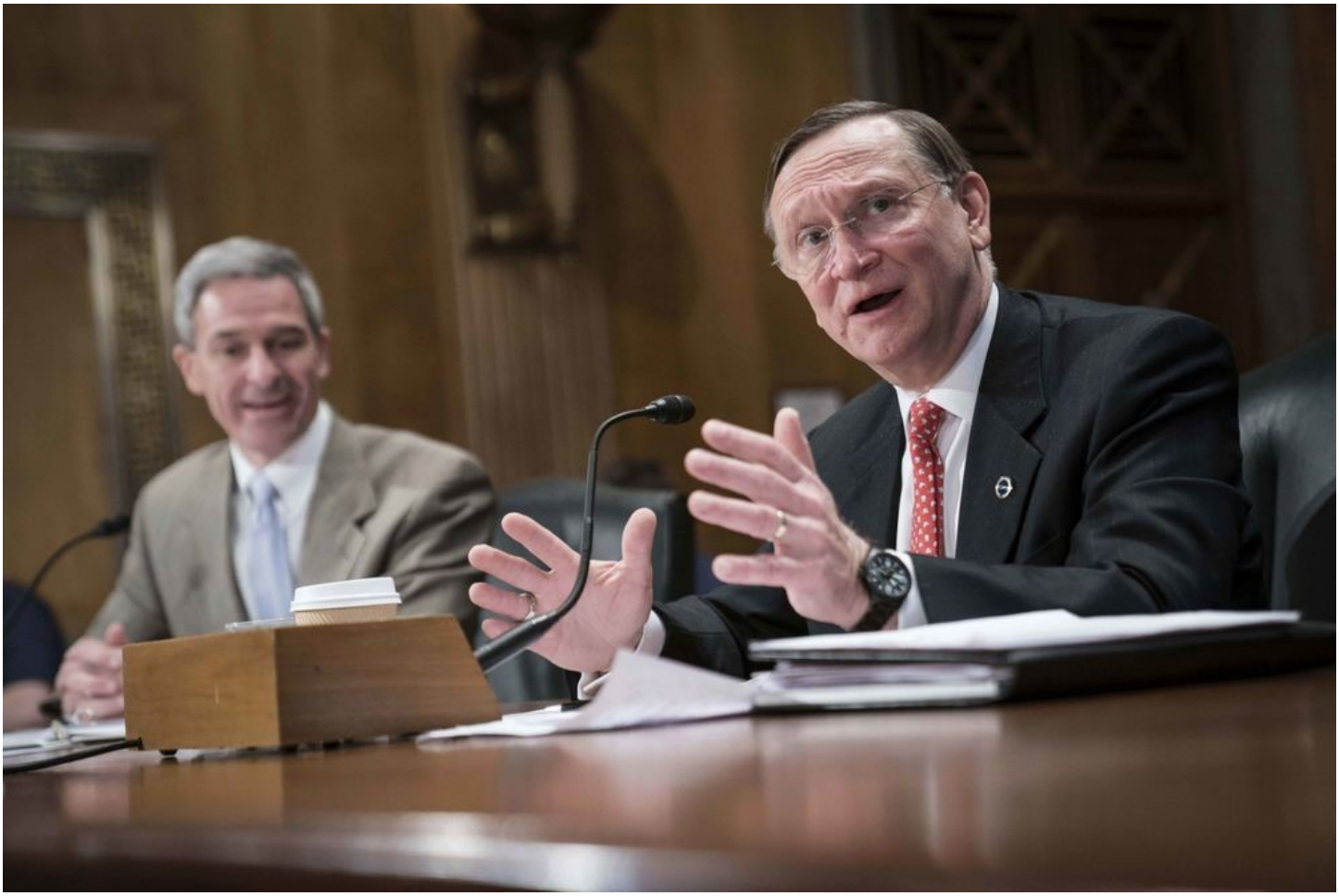
Nearly three years since the beginning of the outbreak, and after endless debate about Covid's origins, the answers we're getting aren't pat, definitive or satisfying—but they're useful if you look at them another way. Current and former US officials and international experts in national security and epidemiology agree that both hypotheses—animal-to-human transmission and a laboratory accident—could be true, and we should assume they'll happen again if we don't take proper measures.

A 'Likely' Lab Leak?

The Senate Republicans' preliminary report based on open-source information points to long-standing biosafety challenges at the Wuhan Institute of Virology, which, they said, appeared to have drawn the attention of government leaders in Beijing. The staffers also suggest that the People's Liberation Army may have been working on the development of a Covid vaccine before the very first cases cropped up in the city—cases they believe occurred between mid-October and mid-November 2019, rather than in December, as the Chinese government claims. (Kadlec, like every other serious investigator, has ruled out the idea that Covid was a biological weapon.)

The minority committee team's findings don't claim to be conclusive. The report uses the term "likely" a total of 17 times—one of which occurs in the statement: "The COVID-19 pandemic was, more likely than not, the result of an accidental biocontainment breach at the WIV between mid-October and no later than mid-November, 2019."

That statement got the most attention when the interim report was released, and it's the most controversial. Chinese Foreign Ministry spokesman Zhao Lijian told reporters Monday the lab-leak theory is "a lie fabricated by anti-China forces for political purposes." Michael Worobey, a professor at the University of Arizona who has co-authored studies that point to the Huanan seafood market as the epicenter of the outbreak, describes it as "political misinformation" wielded to shut down important biomedical research. Critics allege a member of the Senate team mistranslated Chinese correspondence.



Robert Kadlec (right), former head of the HHS Office of the Assistant Secretary for Preparedness and Response, photographed in October 2020. *Photographer: Sarah Silbiger/Bloomberg*

But if governments around the world can accept that such a lab leak was theoretically possible—whether it's the most likely scenario or not—the next logical step is to commit to universal standards for high-risk research.

This year, the US government asked the National Science Advisory Board for Biosecurity to reflect on the pandemic and develop new guidance around research capable of producing both benefit and harm, including the altering of a virus or microbe to become more transmissible or dangerous.

New recommendations may be shared as soon as December. The board will consider how to strike the right balance of facilitating important, though risky, research, while ensuring oversight and accountability. Many biosecurity experts have advocated for high-level sign-off on certain experiments, setting universal standards for lab activities and their reporting, as well as public mapping of where high-risk pathogen research is taking place. Implementation will, no doubt, require investment.

"If there's a very small possibility this came from a lab, it's absolutely worth spending time and money to reduce the risk that it could happen a second time, " says Tom Ingelsby, the director of Johns Hopkins Center for Health Security and an infectious disease expert who advised the US government's Covid response.

Zoonotic Spillover

If Covid did come from a lab leak, it would be a break with precedent. All other coronaviruses known to infect humans, including SARS and MERS, have zoonotic origins. More broadly, three in four new or emerging infectious disease threats to humans currently start in animals. Though no one has confirmed which animals could have initially hosted the disease, much of the scientific community remains convinced that Covid-19 probably began around the Huanan seafood market, not

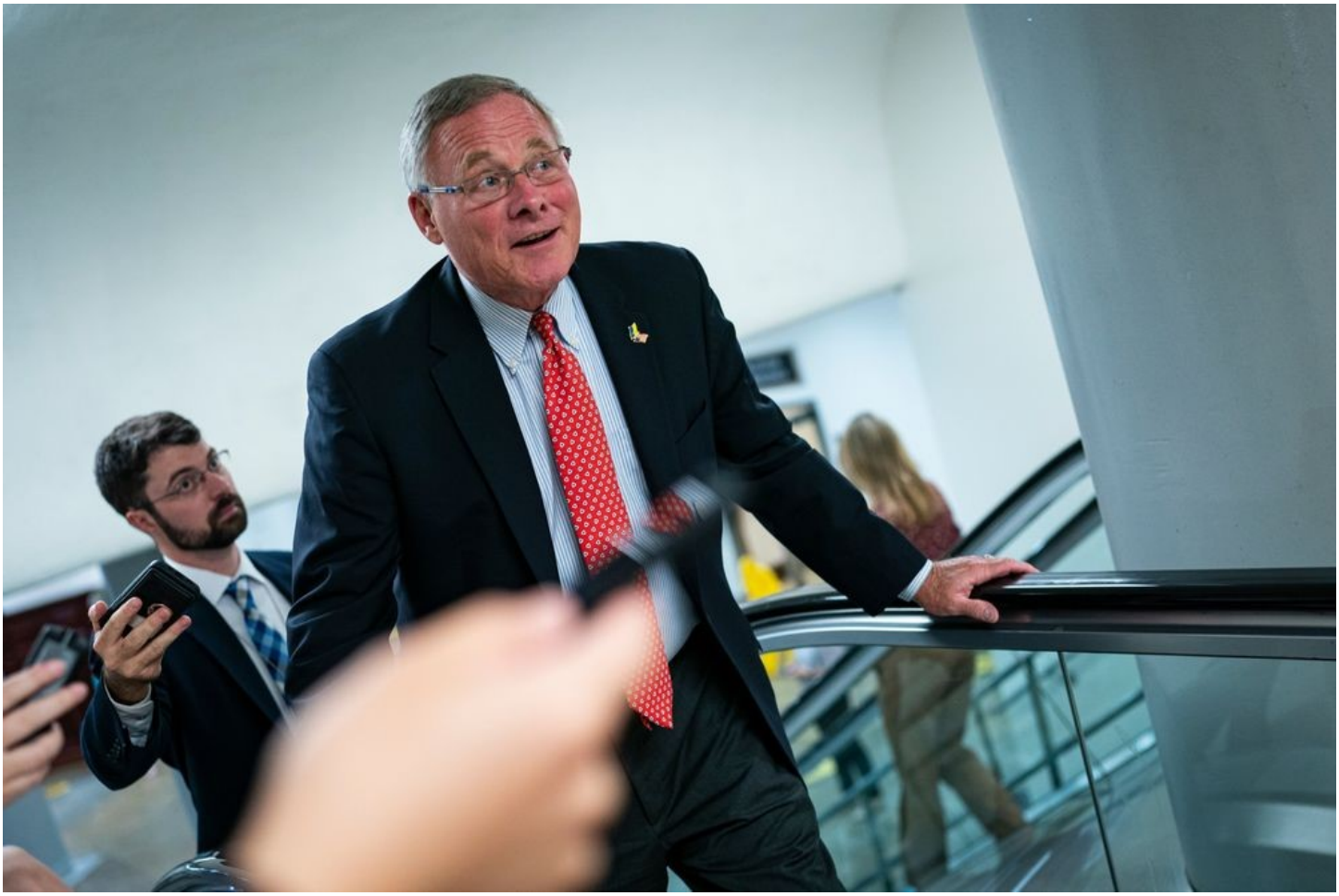
at the nearby laboratory, based on their analyses examining a cluster of early infections, hospitalizations and deaths.

Pinpointing a “zoonotic spillover” event, as it's called when a disease migrates from animals to humans, often takes years, and in many cases, animal sources are never identified.

But accepting that Covid could have been caused by animal-to-human transmission would mean embracing measures to better govern the interplay between the two. Proponents of the so-called “One Health” approach to zoonotic diseases, antimicrobial resistance, food safety and security demand that we advance how we think about the interaction between animals, humans and the environment.

Many have referred to the spread of disease from animals to humans as “natural.” In this modern era, however, “natural” is an imperfect word that obscures human culpability and complacency. What if the commercialization of wildlife and agriculture received the same level of scrutiny as high-risk laboratories?

A senior Republican aide to Burr says that the senator has sought to advance the nation's preparedness for all biological threats, regardless of their origin. Chair of the Senate HELP Committee Patty Murray, a Democrat, and Burr have introduced bipartisan legislation, called the Prepare for and Respond to Existing Viruses, Emerging New Threats, and Pandemics Act, which seeks to improve lab safety, as well as detection tools for zoonotic diseases.



Richard Burr *Photographer: Al Drago/Bloomberg*

Meanwhile, President Joe Biden’s National Biodefense Strategy, released in October, seeks to extend biosurveillance responsibilities beyond the Centers for Disease Control and Prevention, charging the Department of Agriculture and Environmental Protection Agency, among other entities, with preventing and monitoring zoonotic events. The strategy calls for bolstering such interventions not just in the US, but in 50 additional countries.

"What we don't have is the infrastructure where we need it most," says Ian Lipkin, the director of the Center for Infection and Immunity at Columbia University's Mailman School of Public Health, who has spent a career training folks in developing countries on how to conduct on-the-ground biosurveillance. "The model must be anti-colonial: We are teaching people what they need to do in their own communities."

Lipkin believes that markets where live animals are sold, like was reportedly happening at the Huanan market, should be outlawed globally. China has already banned the trade, but isn't the only place that should receive scrutiny for the conditions in which such animals are being sold, he says. The renowned virus hunter has examined dead and living animals transported through New York's John F. Kennedy International Airport. They, too, carry a range of infectious agents.

Getting on the Ground Earlier

Geopolitical tensions may pose the greatest challenge to future pandemic prevention. Lipkin, who was given an award from China for his service to the country during the SARS outbreak of 2003, says that as US-Chinese relations have disintegrated, so has transparency around the spread of disease.

While China allowed a team of World Health Organization experts into Wuhan in early 2021, they restricted their movements, obscured findings, and have not facilitated access for any other international investigations into Covid's origin. By resisting sharing information and blaming other countries, Beijing has "impeded the global scientific community and our ability to confidently determine how the virus first infected humans," according to a report released by the Office of the Director of National Intelligence.

"We need infectious disease diplomacy," Lipkin says. "We have to create a culture in which people want to share data with one another."

That demands the US and its allies find common ground, even with adversaries, around the reporting of potentially deadly biological threats. And the World Health Organization must set stronger standards about early, on-the-ground investigation.

Beyond the geopolitical challenges, there are technical ones, too. Intelligence experts and scientists have both struggled to distinguish between made-made and naturally-occurring pathogens. Time is of the essence: In the future, we're likely to have more ambiguous events.

The former chief scientist for the Central Intelligence Agency's Directorate of Science and Technology, Catherine Marsh, says the US is trying to bolster its ranks of experts capable of investigating key questions of emerging biological threats. Who did it infect? What is it? When did it emerge and why? And where did it come from?

Marsh says the intelligence community is often "first on the ground" when a threat arises—even before defense or health officials. Even then, it's difficult to determine whether an organism has been genetically engineered, or if it evolved naturally, she says.

Marsh, who now leads the Intelligence Advanced Research Projects Activity, says she's long been concerned about the time it takes the US to simply collect samples. "If it takes months to collect and analyze samples, it's already yesterday's news. The threats have moved on!"

Computational Tools

The US intelligence community's R&D unit recently announced that it had successfully developed computational tools with public and private-sector partners to make such a distinction. Those tools have been used to determine Covid wasn't a bioweapon—but more data would be needed to rule out a laboratory accident.

"If it was known that a laboratory was working with a particular type of organism and making specific edits, the tool would be able to find evidence consistent with a leak from that lab," says David Markowitz, who managed the program focused on detecting genetic engineering in biological samples. That requires more transparency around the work of researchers, which

would then be compared to knowledge of how disease has historically evolved outside the laboratory.

People want answers. And this technology may one day provide them. Markowitz believes this kind of tool will also be critical for tamping down misinformation, and thereby, political unrest.

But would it?

That's the bigger, burning question that envelops the debate around Covid's origins–and perhaps, all our modern mysteries.

"Even if we found a smoking gun," asks Filippa Lentzos, an associate professor in Science and International Security at King's College London, "who would be convinced?"

– With assistance by Colum Murphy
