Concerned Scientists, an advocacy group based in Cambridge, Massachusetts, said that government scientists must be encouraged to speak directly to the public and media, including through social media. Critics have complained that it has become harder over the years to gain access to government scientists for information and insight, and that it became even more difficult when Trump took office. In its first days, the Trump administration issued restrictions on agency employees speaking about their work. And during the COVID-19 pandemic, top public-health officials, including infectious-disease chief Anthony Fauci, were restricted from addressing the public. "Agencies should not be scared of scientists speaking up," Rosenberg said.

Since Trump was elected in 2016, the non-profit Climate Science Legal Defense Fund (CSLDF) and the Sabin Center for Climate Change Law at Columbia Law School, both in New York City, have tracked anti-science actions by the US government, including state-level decisions and actions by individual members of Congress. That tally has now grown to nearly 500 entries.

Augusta Wilson, a staff attorney at the CSLDF, said at one of the sessions that close to half of those cases involved censorship of scientific information. In her remarks, she asked that the OSTP "call on agencies to adopt strong, explicit protections against censorship and other interference with scientists' ability to communicate about their work".

Firewall needed

The CSLDF and the Sabin Center are among groups that have created guidelines for keeping science free of political interference and ensuring that scientific evidence carries weight. Among such suggestions are integrity-policy training for agency employees and designating government offices and leaders to settle disputes. Some say that Congress should pass legislation that requires agencies to shore up their rules.

Tom Sinks, who worked at the US Centers for Disease Control and Prevention and the US Environmental Protection Agency (EPA) for decades, told *Nature* there needs to be a 'firewall' between scientific evidence and political leaders at agencies. "Creating a firewall that enables science to be science and politics to be politics — this is where scientific integrity plays a big role," he said.

During one of the sessions, he suggested that to construct such a barrier, each agency should establish a senior scientist, who is not a political appointee, as the ultimate approver of scientific products such as publications. Sinks himself is no stranger to scientific-integrity conflicts. Before he resigned in 2020 as director of the EPA's Office of the Science Advisor, he wrote a rebuke of the agency's own 'secret science' rule, championed by then-administrator Scott Pruitt, a Trump appointee. Touted as a move towards transparency, the proposed rule would have prevented the EPA from using studies that rely on non-public data as a basis for regulations. But critics argued this would cut out foundational health data about the harms of environmental pollutants — and would ultimately weaken the regulatory agency's power to curb polluters. The Biden EPA is currently reconsidering the rule.

ALEX WONG/GETTY

Alondra Nelson is the OSTP's deputy director for science and society.

The new effort "reaffirms and builds on" Obama's scientific-integrity work, according to Biden's January memo instructing the OSTP to take up this issue.

Obama had pledged to "restore science to its rightful place" during his inauguration, and his OSTP director, John Holdren, detailed a series of actions that agencies should take to protect the independence of scientists. This came after previous president George W. Bush and his administration blocked stem-cell science and downplayed climate research.

Going beyond

Sinks says the 'Holdren memo' protected some EPA science during the Trump years, allowing scientific reports to pass that might have otherwise faltered. But he hopes the Biden effort will go further.

A 2019 review by the US Government Accountability Office concluded that the Obama-era memorandum was unevenly embraced across agencies. The review recommended further actions to strengthen the integrity of federal research.

The public comments collected at the listening sessions and received in writing will inform the Biden OSTP's deliberations. "This is an issue that the public really cares about and is engaged in," says Nelson.

The OSTP task force is due to deliver a review of existing agency-integrity policies in September.

SURPRISE DIP IN UK COVID CASES BAFFLES RESEARCHERS

Few researchers anticipated July's sharp drop in recorded infections.

By Philip Ball

Scientists are scratching their heads over the precipitous decline in daily COVID-19 infections in the United Kingdom following their rapid rise earlier in the year. Officially recorded new cases plummeted through the second half of July: from a high of 60,674 on 15 July to 20,430 on 1 August.

"Nobody really knows what's going on," says epidemiologist John Edmunds at the London School of Hygiene & Tropical Medicine (LSHTM). In particular, it's not clear whether this sudden trend indicates that the peak of the third wave has passed, or whether it is a blip caused by complex social factors.

The spread of the more-infectious Delta variant of SARS-CoV-2 in the United Kingdom seemed, despite the country's successful vaccination roll-out, to be creating a dangerous crisis. An exponential growth in infections since June led to predictions of as many as 100,000 new cases being reported daily, and fears that the National Health Service (NHS) could be overwhelmed by hospitalizations. In such a climate, many scientists felt that the government's full relaxation of mitigating restrictions in England — such as mask wearing and the closure of nightclubs and other venues — on 19 July was reckless.

It is still too early to know exactly what effect the relaxation will have, given that new cases and hospitalizations take a while to show up in

A temporary COVID-19 testing centre in England.

OLI SCARFF/AFP/GETTY

the data. Few public-health experts, however, anticipated the recent sharp drop — and they are struggling to interpret it.

Not herd immunity

One thing it doesn't mean, says Edmunds, is that the United Kingdom has built up enough population immunity through vaccination and natural infection to stop the virus spreading. "The drop in cases is unprecedented to some extent, in that it seemed to occur everywhere," he says — something which had been previously seen only after lockdowns. "But herd immunity would come in different places at different times."

Despite around 70% of the UK adult population now being fully vaccinated against COVID-19, there is still a large pool of susceptible people. The highest proportion of infections is occurring in people aged 16–24, most of whom either are unvaccinated or have not yet received both jabs, although there are also 'breakthrough' infections among the fully vaccinated and those who have previously recovered from the disease.

Some random fluctuations in infection rates are inevitable, says epidemiological modeller Graham Medley, also at the LSHTM. "This is exactly the situation faced by, say, climate change — apparent signals appear in the data, and the question is at what point does it become reasonable to infer about something underlying?"

The decline in cases over many days seems to imply a specific underlying cause. But that cause might be a combination of many things, says Edmunds.

First, the drop might seem more pronounced because of a spike in infections in England in mid-July, caused by the delayed Euro 2020 football tournament, which led many people to congregate in pubs, bars and private homes, as well as stadiums. That, Edmunds says, is consistent with the higher infection rate among males at this time.

Subsequently, many people in the United Kingdom were alerted by NHS contact-tracing apps that they had recently been in close proximity to someone who had tested positive. This spate of alerts, dubbed the 'pingdemic', has caused disruption to work and services throughout the country, as many people were forced to self-isolate. But, says Edmunds, it might have done its job in slowing the spread of the virus.

> **"The drop in cases is unprecedented to some extent, in that it seemed to occur everywhere."**

Schools effect

Another major reason for the decline could be the end of the school term. Many schools in England closed around 23 July — which is too recent for an effect to show in the COVID-19 data. But a school-related decline in cases could already be feeding through, because some finished a week or so earlier, many older students were already off school after their exams, and around 20 per cent of pupils were self-isolating at this time. "The contacts of school-age kids have dropped quite dramatically over the past several weeks," says Edmunds.

Such a decline would reflect how big a driver of UK infections schools and young people now are — which would have implications for the government's recent decision not to routinely vaccinate all under-18s.

There could be other factors at play too, says Christina Pagel, a specialist in health-care data analysis at University College London. Recent warm weather has led to a preference for outdoor socializing, for example, which could reduce transmission.

It is also possible that the drop in recorded cases could be the result of fewer people getting tested for COVID-19, rather than a genuine fall in infections. Pagel says that people might be reluctant to take a test if they have only mild symptoms, perhaps because they cannot afford to self-isolate or do not want to jeopardize holiday plans.

Clinical immunologist Alex Richter at the University of Birmingham, UK, says that there might be reduced testing because of the end of school term and because of general social fatigue, but she warns that this is hard to quantify at this point. The number of test results being reported has fallen, but so has the proportion of tests that are positive.

Hospitalizations in England have also started to decline gradually — there were 645 admissions on 1 August, compared with 836 on 25 July. However, Paget cautions that there is some indication that infections might now be creeping up again. Throughout the first week of August, daily recorded cases have appeared to rise slightly and level out at around 30,000. More data in the coming days and weeks, for example from the UK Office of National Statistics, and Imperial College London's Real-time Assessment of Community Transmission (REACT) programme — which conducts regular home testing of more than 100,000 people — could shed some light on what is really happening.

Looking ahead

It has yet to be seen how the easing of restrictions will change public behaviour, and thus infections. This, says Edmunds, is really key to how the UK pandemic will play out over the coming months. "We can't predict human behaviour very well at all," he says. "None of us had the Euros [football] in our models for example, but it's looking increasingly likely that that really did have an effect."

He suggests that England might look to Scotland for what to expect in the coming weeks. Scotland's school holidays and its Euro 2020 COVID-19 peak both came a few weeks ago — and cases have stayed low since. However, researchers agree that the return of school pupils, university students and office workers in September, as well as the possibility that protection from the first round of vaccines will wane, is likely to fuel another rise. "I think the summer will be a bit of a firebreak, but that the pandemic will slowly grow again and things will escalate in the autumn," says Richter. It is by no means all over yet.