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Wanted: better systems for turning evidence into action

The pandemic created a colossal demand for scientific evidence to inform decision-making. Now researchers are mapping out what went wrong and what needs to change.

There's a saying in medicine that decisions were once made by GOBSAT: good old boys sat around a table, pontificating about their own (usually biased) opinions. The GOBSAT method is elitist and exclusionary, and it means that no one knows on what solid evidence, if any, a decision is based. Sadly, this way of making decisions has been on full display in many countries over the past two years.

During the pandemic, governments, businesses and people worldwide have needed rigorous evidence quickly to inform their decisions — on what treatments work for COVID-19, say, or how best to educate children safely. But that pressure has exposed weaknesses in the world's systems for producing, synthesizing, communicating and using evidence for decision-making (*Nature* **593**, 182–185; 2021). Although research has been essential during the pandemic, too much of it has been of poor quality or hasn't addressed pressing questions. Researchers who produce evidence syntheses — authoritative reports that summarize a body of research — have been unable to keep up with the pace of new studies. Misinformation has flourished, and politicians and others have often been unable to access the evidence they need.

But researchers are on the case. In the past couple of months, three reports have been published that show what can be done to improve evidence-informed decisions, not only during a pandemic, but in many spheres of public policy, including combating climate change, reducing inequality and improving global health. The reports are ambitious — idealistic, even. But together, they visualize an efficient machinery that can supply fast but rigorous evidence, on time, to those who need it. And they outline a road map to get there, putting equity at the centre and highlighting the very different needs of countries around the world.

The evidence ecosystem

In one report from the Global Commission on Evidence to Address Societal Challenges, a group of 25 people — ranging from politicians to statisticians to citizen leaders — across 6 continents proposes improvements for almost every aspect of the evidence ecosystem (go.nature.com/3hxgzvu). One priority recommendation is for multilateral organizations to provide commitment and greater support for the use of research evidence in making decisions — such as the way the Intergovernmental Panel on Climate Change assesses climate science for policymakers.

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Under this global umbrella, the commission recommends that every nation have its own processes to support the use of good evidence. Of course, many nations already do, in the form of science advisers and data-analytics teams attached to government departments. But a common missing ingredient, as the commission rightly points out, is a central agency to help to coordinate these efforts and get the right evidence to those who need it at the right time.

Many of these recommendations are echoed in a call to action issued in December by the health-policy groups that make up the World Health Organization Evidence-informed Policy Network (EVIPNet) and in a report, published in February, by Cochrane, a world-leading supplier of evidence syntheses in health. Cochrane is keen, in particular, to develop evidence-synthesis units in low- and middle-income countries. Only 3–4% of Cochrane review authors were from such countries between 2018 and 2021, an imbalance that needs to be corrected.

A pragmatic approach

Many organizations in low- and middle-income countries are already bridging the chasm between researchers who generate evidence and decision makers who could use it. The Center for Rapid Evidence Synthesis (ACRES) at Makerere University in Uganda is one of them. It receives requests from policymakers and sends back a rapid synthesis of relevant evidence within days or weeks. It has influenced Ugandan policies ranging from food fortification to tuberculosis diagnosis. Health-policy researcher Rhona Mijumbi-Deve, who founded the centre and now advises other nations on setting up similar outfits, told *Nature* that what sets it apart is the way it provides evidence that policymakers need, tailored for Uganda, at the pace they need it. And it is rightly pragmatic, willing to produce a good review on time, rather than the perfect review too late.

Across the Atlantic, a Latin American evidence hub has been taking shape, co-directed by Laura Boeira, who leads the Instituto Veredas, a non-profit organization focused on evidence-informed policymaking in São Paulo, Brazil. Boeira and her colleagues are seeing a growing appetite for evidence from public officials, despite — or perhaps because of — Brazilian President Jair Bolsonaro's open disdain for evidence, such as that on COVID-19 vaccines.

Each country needs a mechanism for supplying evidence that is appropriate to its systems of governance and wider needs, but there are some common, essential ingredients too — such as the need for trusted, long-term relationships between researchers and decision makers. Politicians, says Boeira, typically want to call their favourite expert and ask them what to do. By building trust, she wants to make sure that their first call is instead aimed at finding the best available evidence.

The risk for the global evidence commission is that its recommendations are so ambitious that they seem unfeasible or overwhelming. The commissioners are already

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receiving questions from countries about where to start. A good first step is for a nation or region to take stock of what has worked during the pandemic — the bright spots, such as the centres in Uganda and Brazil — and then figure out what hasn't worked and what could be done to fill the gaps.

During the pandemic, too many decisions have been made by GOBSATs or by other questionable means. Lessons learnt from COVID-19 provide an opportunity for change, for injecting more-rigorous research and evidence into the way that decisions are reached. We can all start by asking the GOBSATs for the evidence on which their statements are based.

Trial of transparent peer review yields promising results

Last year, nearly half of *Nature* authors agreed to publish anonymous referee reports. We hope that more will consider doing so this year.

Research papers are the product of lengthy discussions between authors and reviewers — guided by editors. These peer-review conversations can last for months at a time and are essential to progress in research. There is widespread agreement that the robustness and clarity of papers are enhanced in this process.

Peer-review exchanges are mostly kept confidential, meaning that the wider research community and the world have few opportunities to learn what is said in them. Such opacity can fuel perceptions of secrecy in publishing — and leaves reviewers and their key role in science publication underappreciated. It also robs early-career researchers of the opportunity to engage with examples of the inner workings of a process that is key to their career development.

In an attempt to change things, *Nature Communications* has since 2016 been encouraging authors to publish peer-review exchanges. In February 2020, and to the widespread approval of Twitter's science community, *Nature* announced that it would offer a similar opportunity. Authors of new manuscript submissions can now have anonymous referee reports — and their own responses to these reports — published at the same time as their manuscript. Those who agree to act as reviewers know that both anonymous reports and anonymized exchanges with authors might be published. Referees can also choose to be named, should they desire.

A full year's data are now in, and the results are encouraging. During 2021, nearly half (46%) of authors chose to publish their discussions with reviewers, although there is variation between disciplines (see 'Peer review opens up'). Early data suggest more will do so in 2022. This is a promising trend. And we strongly encourage more researchers to take this opportunity to publish their exchanges. Last year, some 69% of *Nature Communication*'s published research articles were accompanied by anonymous peer-review reports together with author–reviewer exchanges, including manuscripts in life sciences (73% of published papers), chemistry (59%), physics (64%) and Earth sciences (77%).

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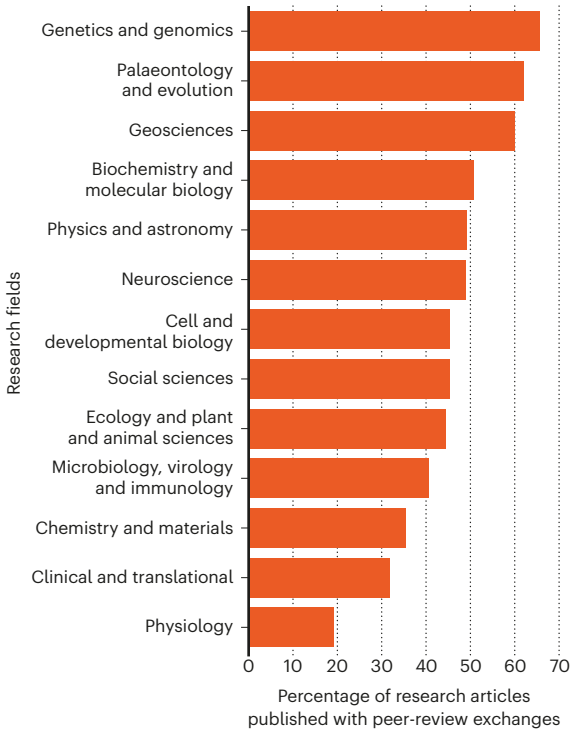
The benefits to research are huge. Opening up peer review promotes more transparency, and is valuable to researchers who study peer-review systems. It is also valuable to early-career researchers more broadly. Each set of reports is a real-life example, a guide to how to provide authors with constructive feedback in a collegial manner.

Publishing peer-review exchanges, in addition, recognizes the effort that goes into the endeavour. Peer review is integral to being a researcher. Making reviewers' work public illustrates the lengths that researchers will go in the service of scholarship. According to one study, reviewers in total do tens of millions of hours of peer review each year (B. Aczel *et al. Res. Integr. Peer Rev.* **6**, 14; 2021). Yet this contribution is rarely recognized in research evaluation systems. As we have reported, there is growing interest in reforming these systems to better represent how science is done. If more researchers agree to open up their peer-review exchanges, we can all play a part in making that happen.

PEER REVIEW OPENS UP

In 2021 and 2022, transparent peer-review comments were published alongside many *Nature* research articles. In total, 447 out of 974 articles in 2021 were published with anonymous referee reports. By 1 February 2022, it was 30 out of 61 articles.



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