



Credit: Suat Gursozlu / Alamy Stock Vector

“I had to be with bodyguards with guns”—attacks on scientists during the pandemic

Public-health researchers are more visible than ever before. But for some, this has led to abuse and attacks that threaten to silence them.

Anita Makri

Marcus Lacerda looks squarely at his computer camera with no hint of a smile. He begins to tell the story: “It was probably the worst time of my life.”

The pandemic was still in its early days when Lacerda sprang into action. In Manaus, a bustling entry route to the rainforest in northwest Brazil, the health system was crumbling under the pressure of patients with COVID-19. The city is the largest on the Amazon river. It has seen its share of infectious diseases over the years. A physician and researcher there, Lacerda decided to put his team’s decades-long

experience in clinical research on malaria and human immunodeficiency virus to good use.

“This promising chloroquine drug, which could be used for COVID-19—the Chinese had started to use that,” he recalls.

Chloroquine has been part of the medical arsenal against malaria for decades. **At high doses, it is also used as a cancer treatment.** But no one really knew how safe or effective it could be against the new coronavirus. **Lacerda moved swiftly** to assemble his staff and get approval from Brazil’s ethics board for a clinical trial to test the drug’s safety

and efficacy at high-dose and low-dose regimens.

It was March 2020, just as the world was waking up to the gravity of the pandemic. Around that time, **a study** led by a French doctor Didier Raoult was published as a preprint. It reported that chloroquine’s close relative hydroxychloroquine, combined with azithromycin, cleared the coronavirus within five days in all patients tested. “That was the paper that caught the attention of Donald Trump,” says Lacerda. “And ultimately, the attention of my president [Jair] Bolsonaro in Brazil.”

By the end of April, as scores of people were dying and scientists were scrambling for ways to contain COVID-19, [Lacerda's trial](#) dashed hopes that chloroquine could be used safely to save the lives of seriously ill patients. It showed that the high-dose regimen was associated with inflammation of the heart, and had no benefit. Brazil's Data and Safety Monitoring Board reacted quickly. "There were many other ongoing trials with very high doses as well, and we wanted them to halt their studies," says Lacerda.

What followed turned his life upside down. Lacerda describes political forces that go all the way to the top of his government, mixed with intense scrutiny and a touch of prejudice about a study coming from Amazonia. "I had to be with bodyguards with guns for more than a week," he says. "It was very dark days."

He is not alone. Hundreds of medical staff and public-health scientists across the world have reported a barrage of abuse, attacks and serious threats during the pandemic. The reports are the tip of an iceberg that observers say is poorly understood. Their stories reflect a tense relationship between science, media, politics and the public; when that relationship turns toxic, the cost is not only personal. It is also counted in how well health messages and scientific evidence filter through misinformation, deceptive campaigns and the noise of competing narratives.

Death threats

Thousands of miles from Manaus, Paris-based physician Nathan Peiffer-Smadja was having his own brush with claims that hydroxychloroquine could rid patients of the new coronavirus. The message that this was a miracle drug went viral in France, he says. "[Emmanuel] Macron, the French president, he went to meet Raoult and to say that they were doing wonderful work."

When President Macron's visit was [reported in the media](#), Peiffer-Smadja took to Twitter to say there were simply no data to back up those claims over the drug. "I was at the beginning quite alone. And then more [infectious-disease] experts and medical researchers shared this view."

Meanwhile, he recalls, the idea that hydroxychloroquine could save lives morphed into a consensus in the public eye. The backlash was fierce. Medics who spoke out were [openly accused](#)—even by colleagues—of being responsible for patients' deaths and corrupted by big pharma. Then came the abuse. "First on social media with insults, harassment, threats, including death threats. They shared my personal postal address with pictures of

where I live, [saying] 'we will find you.' That was shared in Facebook groups with more than 200,000 followers."

There was another wave of online attacks after Peiffer-Smadja and colleagues [published a meta-analysis](#) concluding that hydroxychloroquine treatment with azithromycin does not save lives. The latest threats are linked to vaccine acceptance. French police have been quick to respond, he says, identifying key social-media accounts responsible.

If social media is a double-edged sword, COVID-19 has sharpened both blades. The freedom of speech enabled by platforms like Twitter and Facebook has been vital for quick sharing of crucial information during the pandemic. It is also an efficient channel for harassment that, [although by no means new](#) to scientists, has [only become more intense](#). Those we spoke to all agreed that reporting abuse to the platforms is futile.

Peiffer-Smadja remains unfazed. There is support from employers and help from a lawyer. But it is not the same for many of his colleagues. "I know many doctors who don't want to take a public position because of what I went through," he says. "[But] in fact, it happens because we did not go to the media enough, because we did not inform the general public enough." He believes the way to break this vicious cycle is to get more comfortable with social media. "I know that Twitter helped a lot to bring our position to the mainstream media."

Fear of speaking out

A call for more doctors and scientists to take to social media may be a hard sell. David Grimes, a scientist who has worked in cancer research for the past decade, knows all too well how conspiracy theorists and hate mail disrupt public outreach work. The universities he is affiliated with have been supportive. "My colleagues haven't always been so lucky, particularly in medicine and certainly in private industry," he says.

Grimes, who is based in Ireland, describes how grievance procedures set up long ago to protect patients from misconduct can be turned against medics who raise their head above the parapet. Every complaint has to be taken seriously, he says, even if it is frivolous. But the system gets fooled by fringe groups engineering a big presence. An email campaign can easily look like a grassroots movement and a legitimate complaint. "In the era of social media, artificial outrage is a very big thing," he points out. "It's far too easy to weaponize a structure that exists for very good reason."

The danger can be even more insidious. During the pandemic, large numbers of healthcare staff have found themselves at the

receiving end of threats, attacks, restrictions or silencing by their own employers and governments. Susannah Sirkin is director of policy and a senior advisor at Physicians for Human Rights (PHR), a USA-based non-governmental organization that advocates against human-rights violations around the world. "We've never seen this across-the-board level of fear about going to work and speaking out, where the threats and attacks are coming from a system," she says. Even senior medics are sometimes afraid of being fired for speaking out. "I've never seen that before. That's quite shocking."

A survey by PHR of over 900 clinicians in the USA published in February documents a climate of fear, with just over 60% reporting they would not feel safe from reprisal by their institutions if they spoke out publicly on safety concerns about COVID-19. This month, the Safeguarding Health in Conflict coalition, made up of around 40 organizations, including PHR, launched [an interactive global map](#) of attacks on health workers, including incidents related to the pandemic.

Much of the data are captured by the Geneva-based organization Insecurity Insight, which [picked up](#) more than 360 incidents from 56 countries between January and August 2020. A handful of [other organizations have recorded several hundreds of incidents](#) against health staff in the space of a few months last year. In Insecurity Insight's data, the majority (77%) of the perpetrators were members of the public, including patients and their families. Many had used physical objects, including bleach and stones. But overall, the incidents come in various forms. [The World Health Organization had identified eight types of attack](#) related to the pandemic by July last year, including evictions, psychological threats and attacks online.

The data are patchy, Sirkin is keen to point out. But what is there points to a growing problem. "There are many more incidents, and more types of incidents, in more countries," she says.

If data are patchy for healthcare workers, they are simply hard to find when it comes to scientists. The Committee on Human Rights at the National Academies of Sciences, Engineering and Medicine in the USA advocates on behalf of scientists who come under threat globally. Rebecca Everly, who directs the committee, says it has seen "a worrying pattern" of attacks by governments. Cases emerged from several countries in which scientists were punished for speaking out about a lack of protective equipment, questioning official statistics or simply publishing their work. "It can be

dismissals from government work,” she says. “In some cases, it’s death threats. We’ve seen health professionals be imprisoned.” In the USA alone, [dozens of public-health leaders in 38 states](#) left their positions or were fired last year.

There is sometimes an element of synergy, says Everly, in which attacks by the public feed off of government intimidation. But away from the front lines of hospital or government work, social media often becomes the battleground.

Going viral

Virologist Angela Rasmussen watched her Twitter following shoot up from a mere 250 to the 200,000 mark in the space of a year. “It’s been pretty wild,” she says.

Her public outreach had been fairly limited, but the social-media platform became a way to channel energy when life in the USA came to a standstill early in the pandemic. “I couldn’t go into the lab, I couldn’t go into my office,” she says. “So I thought one thing I could contribute to is helping people make sense of all the new information that was coming out.”

Rasmussen, who has been based at the Columbia University Mailman School of Public Health, took to commenting on poor studies published in preprints and sometimes covered uncritically in the media. But as her frustration with bad science grew, and lockdown took its toll, the tweets became less filtered and more personal. There were run-ins with high-profile figures. It all fed a steady stream of followers, and with them came a steady stream of abuse. “I have a pretty thick skin,” she says, but she admits it takes a toll. “People are constantly saying everything from personal insults to making sometimes implicit threats of violence or sexual assault. And that can just be exhausting.”

It has not deterred her from speaking out. Rasmussen still sees huge value in having a large audience to talk to about biology. She now does this more cautiously—preparing for the onslaught before sending a tweet, or setting aside time to block the abuse. But other women scientists with a similar experience have had to step back from public commentary at times, she says. “I think that it does remove voices from the conversation that are important. And that’s, to some degree, what it’s intended to do.”

Part of the reason Rasmussen keeps going is to set an example for other women scientists who should have a place in the public discussion. “I’m undaunted,” she says, “but I also can’t wait for it to be over.”

In the spotlight

“I don’t follow Twitter,” says Neil Ferguson, an epidemiologist at Imperial College

London and former member of the UK’s science advisory body SAGE, who fell foul of a more traditional media spotlight.

In March last year, [modeling by Ferguson’s team](#) suggested that severe restrictions were probably the only viable way to avoid overwhelming health systems in the UK. It seemed to prompt the government’s swift move into lockdown mode, and thrust Ferguson from the world of models and data to that of politics and tabloid newspaper headlines. “That certain libertarian tendency decided to adopt me as the *bête noir* of lockdown measures,” he says. “And then the digging into my personal life wasn’t pleasant.”

The country’s heated political debates over an unprecedented shutdown found an easy target when Ferguson was exposed for breaking lockdown rules with a partner. “I made mistakes, I’ve always owned up to those,” he says. “Nevertheless, I didn’t expect to quite have media camped outside my house and people close to me, or for them to be monitoring me in the way they were.”

Ferguson sees media work as a part of his job. He sounds measured about the experience, and his attitude to communication has not changed. But it has been a testing time. The level of scrutiny over the past year has been “exceptional,” beyond the realm of scientific disagreement. “The thing that slightly shocked me is the sheer level of vitriol expressed,” he says. “I haven’t experienced that before. And many of my scientific colleagues haven’t experienced that before.”

Care and support

Back in Manaus, Lacerda is still dealing with the aftershocks from last spring’s chloroquine trial. “All that happened afterwards had a huge impact in my personal life,” he says. “I and parts of the team, we had to go through psychotherapy.” Time that could have been spent on research was instead spent explaining clinical trials to lawyers.

[The threats](#) began on Facebook and Instagram, Lacerda recalls, when the research team was accused of being part of Brazil’s political opposition and purposefully giving patients a lethal dose to discredit the drug. “People [said] that they knew who I was, that I would be killed, that they would kill my family.”

On legal advice, the incidents were reported to the police. There has been solid support from both institutions that employ him—Tropical Medicine Foundation Dr. Heitor Vieira Dourado and Fiocruz Amazônia—the local science community and well-known colleagues abroad. A sense of faith in the scientific process also helped.

“The good thing about science is that you cannot lie for a long time,” says Lacerda. “And I have always kept that message with me.”

Peiffer-Smadja and Ferguson describe a similar mix of support from employers, lawyers and colleagues. “The Government Office for Science in the UK [has] been exploring how to support members of scientific committees like SAGE who have been under a lot of psychological pressure,” says Ferguson. For Rasmussen, institutions are not the first port of call: she finds universities reluctant to get involved when something goes wrong or becomes controversial. Support has come mainly from family, a therapist and an informal Twitter network of colleagues.

Sirkin says that among the most important forms of support are legal counsel, managers and colleagues, including acknowledgement of the problem by professional associations.

Last July, [Grimes and colleagues](#) published a snapshot of what can go wrong during communication about medical science. They report dozens of cases of complaints and legal intimidation. Feelings of support from employers or a professional body spanned a wide range among those who responded. And where institutional support was missing, there was no clear message on what form it should take.

The risk of silence

Scientists have been encouraged for years to reach out and share their research with the public. Plenty of resources are channeled to science communication. Could waves of abuse without solid support undermine that effort? “It certainly disproportionately undermines women and underrepresented groups from participating in the conversation,” says Rasmussen. Abuse on social platforms tends to be more intense for women, people from sexual and gender minorities, and for Black, Latinx or indigenous people, or other under-represented groups. Bullying and harassment are all too common in academia even without the added anxiety of a pandemic. The problem is systemic, she says, and universities, as well as Twitter, could do much more to crack down on abuse and support scholars active on social media.

Ferguson highlights the role of a changing media landscape—a faster news cycle, more-diverse sources, greater polarization—and a “slightly toxic” blending of mainstream and social media. There is a tendency for simple narratives and oppositional politics that look for someone to blame or evidence to fit an existing position, he says. “It is a simplistic view of

science, particularly science as it applies to crises.”

When it comes to medical science, Peiffer-Smadja sees repeated accusations of misconduct as a danger to evidence-based medicine as we know it. “I suspect it will be a lot more difficult in France to include participants in clinical trials,” he says.

Lacerda is still processing the experience. Before the pandemic, he saw scientists as ‘immune’ to political games. But that sense of trust is now gone. “The fact that someone can [use their] Twitter or the television and say that a scientist killed people [on] purpose and people believe it—it’s something that I never thought would be possible,” he says. “I think that this

discussion about science with society has to begin from scratch.”

In Brazil, Lacerda believes that has a lot to do with how scientists communicate with journalists. Sections of the press eventually got to the bottom of the chloroquine controversy that engulfed him. But he would do things differently, given the chance. “I would talk more to the press, I would get them more involved.”

As things stand, the silencing of scientists is a risk.

“Silencing is a weird thing,” says Grimes. “It becomes a little bit selective. There are topics I will not write about anymore. Because I do not want to deal with the weeks and weeks and weeks of hate mail.” A climate of intimidation

can shut down healthy debate in subtle ways, through self-censorship or self-policing: scientists simply watching what they say.

“We need to move towards a place where we thank scientists and physicians and patient advocates for contributing to the public discussion,” he says. “Because if we allow the extreme elements to dominate the conversation, that is exactly what we will get: domination of fringe views, and it’ll affect public perception.” □

Anita Makri

Science journalist, London, UK.

Published online: 15 April 2021

<https://doi.org/10.1038/s41591-021-01314-9>