

Yet despite the recognition that infertility is a serious health condition that disproportionately affects women in medicine and the precedent for successful subsidization of medical therapies, very few medical professionals have access to affordable treatment for infertility. As a result, many of our colleagues are struggling without support. For each of us, the infertility journey can be physically, emotionally, and financially devastating.

I am grateful to work in a field that strives to improve quality of life for patients and families. Ensuring the health and well-being of the medical workforce is essential to this mission. Infertility is a prevalent and injurious medical issue, and opportunities exist to better support people affected by

this disease. My story is not unique: I am one in four.

In sharing my experience, I hope to translate a personal grief journey into advocacy and a call to action. The literature describing the reproductive health of female physicians remains both limited and heterogeneous.² I hope that our collective struggle will inspire additional research to track the incidence of infertility diagnoses and assess the physical, psychological, and financial sequelae for women in medicine, as well as investigate the effects of fertility coverage on the health and well-being of the medical workforce.

Disclosure forms provided by the author are available at NEJM.org.

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Not a Perfect Storm — Covid-19 and the Importance of Language

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In the face of increasing Covid-19 transmission and mortality around the world, many commentators have described this emerging pandemic as a “perfect storm” — a vastly overused characterization that evokes a sense of anomaly and unpredictability. Indeed, a “perfect storm” is defined as “a particularly fierce storm arising from a rare combination of adverse meteorological factors,” or “the worst possible or an especially critical state of affairs, arising from a large number of negative and (usually) unpredictable contributory factors.”¹

And some of the reasons for

Covid-19's high rate of transmission and mortality are in fact beyond human control — for example, the particular biologic characteristics that lend Covid-19 its virulence. But myriad biologic, environmental, social, and political forces are shaping the spread of Covid-19 around the world, and the way we conceptualize the interplay of these forces matters. Are epidemics the result of a combination of unusual and unpredictable forces, as the notion of perfect storms would suggest? Or are they substantially shaped by long-standing and well-understood human actions (and inaction)?

Writer Susan Sontag argued that the metaphors we use to describe disease profoundly shape our experience of illness; our cultural discourse regarding diseases such as cancer and AIDS, for instance, produces fear and stigma that hinder care and marginalize patients.² Similarly, the perfect-storm metaphor may misdirect our concepts of — and therefore our approach to addressing — emerging pandemics. This language creates a public health discourse that seems reactive rather than proactive, reductive rather than holistic, disempowering rather than empowering. Though

its inherent drama may be appealing, the term “perfect storm” invokes notions of randomness and volatility that may actually undermine our ability to address the Covid-19 pandemic and future disease outbreaks.

The global AIDS crisis of the 1980s and 1990s highlighted the reality that despite growing prevalence and attention to chronic, noncommunicable conditions, infectious disease remains with us, in the form of pathogens both ancient and new. The emergence of AIDS raised fundamental questions about infrastructural decline, drug development, and health care access in the United States and abroad. And in the face of what was at first a uniformly fatal disease, AIDS activists demonstrated that concerted political action can change the course of a deadly, global pandemic — even in the absence of a vaccine.

In the context of the AIDS epidemic, the Institute of Medicine (IOM, now the National Academy of Medicine) catalogued our vulnerabilities to a wide range of infectious threats. In a 1992 report, the IOM declared that “the best way to prepare for the future is by developing and implementing preventive strategies that can meet the challenges offered by emerging and re-emerging microbes. It is infinitely less costly, in every way, to attack an emerging disease at an early stage — and thus prevent its spread — than to rely on treatment to control the disease.”³ Ultimately, the IOM recommended four areas of investment to prepare for future pandemics: core U.S. public health infrastructure, infectious disease research and epidemic surveillance training, vaccine and drug development,

and public education and behavioral change.

The repeated emergence of new zoonotic infections such as the severe acute respiratory syndrome (SARS), H1N1 influenza, the Middle Eastern respiratory syndrome (MERS), Zika, and Ebola — as well as the resurgence of old infectious diseases such as measles and cholera — underscores the reality that global epidemics should be expected and their harms anticipated. The rise of the planetary health field indicates a growing awareness of the intricate ecologic relationships among humans, other animals, and our environment.⁴ Seen in this light, outbreaks of zoonotic diseases are not discrete events: they reflect complex ecosystem changes that are largely driven by human behavior. Nonetheless, during each of these recent epidemics, “perfect storm” headlines were ubiquitous. Invoking perfect storms in such instances downplays our capacity to anticipate and prevent epidemics before they emerge.

Of course, use of this term is not limited to discussions of communicable disease. One journalist noted recently that “opioid addiction looks like the result of a perfect storm of poverty, trauma, availability, and pain.”⁵ This kind of explanation erodes a sense of social accountability for how public health crises develop and evolve. In this case, the perfect-storm metaphor may undermine our ability to hold powerful actors such as the pharmaceutical industry accountable for the staggering death toll of the ongoing U.S. opioid epidemic.

Naturalizing the rise of a pandemic as a perfect storm, in fact, might imply that a health crisis

is beyond the scope of human agency altogether. But of course, even so-called natural disasters are not perfect storms. Crises such as Hurricane Katrina in 2005 and the 2010 earthquake in Haiti had such extreme effects on morbidity and mortality because of long-standing histories of political disenfranchisement and neglect of infrastructure in the affected regions. In the setting of anthropogenic climate change, perfect-storm language elides important conversations about our responsibility for the frequency of both emerging zoonoses and extreme weather events — as well as the disproportionate effects of these crises on the world’s most vulnerable people.

In all these public health contexts, a perfect-storm frame of mind emphasizes the power of chance over the efficacy of public health prevention efforts. But past zoonotic outbreaks have made clear that long-term investments in disease tracking and surveillance, scientific research, and public health infrastructure are the keys to containing the next emerging threat. These strategies do not always fit within our biomedical paradigm, which champions targeted interventions such as vaccine development and medical treatment. But basic, non-specific practices of epidemic prevention and preparedness are essential to infectious disease control.

Epidemics are not simply natural events: they are also the result of human actions, in both their emergence and containment. If we treat each new epidemic as a perfect storm, it becomes that much harder to build the conviction that we can prepare for the

next crisis. The path to strengthening our public health infrastructure will be challenging and will require systemic change. In the meantime, conceptualizing epidemics as perfect storms, even when well intentioned, will make it more difficult for us to move beyond calls for change to actual investment and implementation. Covid-19 may be a novel virus, but such outbreaks have long been anticipated. Many kinds of reform will be required to pre-

pare for the next pandemic, but being conscientious about our language — and its implications — may be a helpful first step.

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