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Knowing Well, Being Well
well-being born of understanding

COVID19 and the Follies of History: Forebodings that Forewarned is Not Forearmed

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Abstract

COVID-19 was the first pandemic of the internet age. Beginning at a time of great societal division in the United States (and globally), pandemic responses were further beleaguered by the viral proliferation of information, disinformation, and propaganda-collectively, an "infodemic." Polarized, blinkered views of the crisis precluded a balanced consideration of objectives, opportunities, and ineluctable trade-offs between the risks of actions and corresponding inactions. The results were lapses in both directions, greatly amplifying the pandemic toll. Persistence of this costly fractiousness is now spawning monocular critiques of the pandemic response, with neglect of essential nuance. There is a better pandemic that might have been, and the chance for far better responses to the next- but only if the follies of this history are lessons learned and applied. Failing that, the risk looms that having been amply forewarned of our liabilities, we will fail to be forearmed.

Keywords

COVID19, pandemic, health policy, opportunity, strategies, risk, health promotion, nuance, total harm minimization

More than four years have elapsed since I first began to opine about our then inchoate, but already quite concerning, responses to the COVID-19 pandemic. My musings spanned written columns, on-line videos, and one signature item: an opinion piece in *The New York Times*.[1] That piece proved more of a lightning rod than I could possibly have imagined, drawing a bounty of both light, and heat. In that bounty were two calls from state governors, at opposite poles of the political spectrum, and one from a three-time Pulitzer Prize-winning journalist. The latter became a colleague across an expanse of his own writing on the topic,[2] and- I am proud to say-a friend.

I write now to express concerns yet again, but no longer about our pandemic responses. My concerns now are about our responses to those responses; what, if any, sense we make of them. Those who do not learn from the follies of history are destined to repeat them, and my forebodings are-we are mired there. We are forewarned to be sure; but I am far from sure that we are forearmed.

I can't help but observe that what seemed sense to me then – spoiler alert-still seems sense to me now. Sensible or otherwise, my perspective proved not nearly "lock everything down" enough for my friends on the left, nor nearly "keep your masks and lockdowns off my civil liberties" enough for their counterparts on the right. I found myself in what a colleague has termed "the alt middle," a lonely place.

In This Issue

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That Neglect of a Middle Space Cost Us Dearly

Much that would ultimately go rather calamitously wrong - from the failure to protect the most vulnerable in nursing homes,[3] to the developmental delays and amplified societal disparities of school closures,[4] to the proliferation of sequential viral strains[5] - was discernible even then to anyone willing to look for peril in more than one direction.

Alas, few were. We entered the pandemic – the first of the internet era, in which information, disinformation, and overt propaganda (collectively, an "infodemic") dispersed even more "virally" than the pathogen - a highly polarized society, and largely sought for deficiencies in the thinking of others, but not ourselves. This is rather like deciding in advance to look only one way before crossing a busy street. Even when a public health train wreck was foreseen[6] - and it was - virtually nothing was done to see it forestalled.[7]

There have been many criticisms of the pandemic response since the public health crisis has receded toward the epidemiologic background. But these, too, seem largely monocular: views from the left critical of the right, views from the right critical of the left. Missing now, as at the start, is any apparent willingness to meet the enemies of constrained thinking and narrow vision, and concede they may be us, as well as them.

There will be another pandemic. To fare no better next time would append the tragic insult of uninstructional folly to the injuries we have suffered, and yet again propagate those very injuries. The cost of only partisan critiques, of failing to see the big picture, of learning little - will be high.

Seen from the sparsely populated middle, there is a view of a better pandemic: avoidable mistakes, missed opportunities, and the artful reckoning with ineluctable trade-offs that were blithely disregarded. Let's consider several.

Risks Travel in Packs

The risks of adverse outcomes from infection by SARS-CoV-2 were greatly affected by prior health status. I lead with this, because it is arguably the least contentious: who could object to a focus on generally better health for all?

This would be a worthy pursuit-adding years to lives, adding life to years, reducing the staggering economic toll of chronic disease-quite independently of pandemic concerns. We had a significant opportunity to "immunize" ourselves against the most dire effects of COVID-19 long before the advent of mRNA vaccines, by engaging in community-based health promotion efforts. Imagine, for instance, a campaign of mobile units dispensing produce, healthy recipes, exercise equipment along with masks (once those were sanctioned) and vaccines (likewise); conducting outdoor aerobics or dance classes where conditions permitted; dispensing education, exercise bands, exercise apps. Imagine acknowledging the clear links among COVID outcomes, cardiometabolic health (e.g., diabetes; hypertension; obesity; etc.) and lifestyle practices (e.g., diet, physical activity) – and then actually doing something about these causal pathways. Imagine encouraging and empowering families to take some element of personal protection into their own hands by making "better health, together" a pandemic project. We did nothing of the sort early, and even after publications[8] attributed much of the COVID toll to the prior pandemic of cardiometabolic disease, our national policy response treated the virus as a stand-alone risk.

It was not, nor will be the next pathogen. Pandemics are mediated by properties of the environment and host (i.e., infected human) as well as the agent (SARS-CoV-2 in this case), and can thus be mitigated by any of these as well. Healthier hosts make for lesser pandemic tolls, and the U.S. population was, and remains, a mass of unhealthy hosts, inviting bad outcomes.

In Public Health, One Size NEVER Fits all

Immanent to the very nature of a pandemic, many people are infected by the pathogen in question. This certainly happened with SARS-CoV-2 no matter the protections we practiced, and occurred before and after vaccines were available. The overwhelming majority of those in this group- I among them, and perhaps you as well-recovered. This meant we were no longer immunologically naïve to SARS-CoV-2; our immune systems had seen it, intimately, spike protein and all. Over time, our numbers grew into the millions. And yet, when vaccines were introduced, they were promoted to us without regard for our immunologic status. This happened again with boosters. Consider measles as a counterpoint: a highly infectious, quite dangerous pathogen. Vaccination guidelines[9] are entirely different for those who have, and those who never have, been infected by the wild type virus. This is a standard that prevails for immunization policy. Failing even to acknowledge the distinction between those who had recovered from infection and those still immunologically naïve was a crude, "one size fits all" approach at odds with public health standards of practice. It both degraded trust where it was most needed, and misallocated limited resources. Native infection need not confer perfect immunity for it to matter; it was treated as if it didn't matter at all.

Science is Not Dogma

We need look no further than the official flip from "masks are useless" to "masks are mandatory" to have some concerns about the zeal with which we were advised to "*follow the science*." Reliable scientific information does not generally result in abrupt, 180 degree turns[10]; when these occur, it is generally because exhortation got well out ahead of evidence. Failure to distinguish the vaccination needs of the infected and uninfected, or to note the unavoidable fallibilities of all known defenses against airborne pathogens were additional examples of "scientific overreach." We were, in fact, being advised to comply with early and nascent science, along with a bounty of dogma, disguised as science. This was especially disheartening to those of us who are ardent defenders of science, supporters of public health authorities, and advocates for vaccines-because we were left with the choice to pretend that all was well when it was not, or confront these missteps at the very time we most needed solidarity.

There were two likely explanations for this heavy-handedness: an attempt by public health authorities to use decisiveness as a counter to the viral circulation of social media nonsense; and the need to oppose the ignorance, ineptitude, and absurdities issuing from the administration in the White House at the time.[11] Perhaps dogma where the humility of genuine science ought to have been was simply Newtonian: *for every action, an equal and opposite reaction*.

Whatever the reason, it was costly. Where dogma is barking, we are rendered deaf to the quieter imperatives of nuance- and so we were. Conflating dogma with science is no small part of the reason

our most illustrious public health institutions suffered a colossal loss of prestige and declines in both respect and trust. The recovery is on-going, and does not look to be quick.

Flatten the Curve, Extend the Timeline

These four years later, COVID remains a clear and present, albeit much diminished danger, rather than just a traumatic memory - because of viral variants. These, in turn, were products of genetic mutations that were advantageous to the virus by happenstance. This first part of the arms race of competing adaptations between the virus and us was one we could never win; numbers favored the virus by a staggering, mind-boggling margin. A single human body harbors from one billion to 100 billion particles of SARS-CoV-2[12] during peak infection. If only 10% of the world's population became infected (many more of us did), and we use 10 billion as a best guess for viral particles per infection, that would mean roughly 8×10^{18} viral particles in circulation. That number- 8 quintillion-is eight billion billions; more than a billion times the human population of earth. If mutations occurred only in one of every million viral particles; and if only one of every million mutations happened to be advantageous-such numbers would still allow for eight million distinct, advantageous mutations. On math alone, we were destined to lose.

But viral strain variation does not run on math alone; it also requires time. Any given advantageous mutation could run into a wall of partial immunity or low transmission rates in a population widely exposed to its immediate predecessors (i.e., relative herd immunity). Only with access to an immunologically vulnerable population, and the time required to spread and become the newly "dominant" strain, does advantageous mutation convert to new viral threat and extended pandemic menace.

Stated bluntly, this was the dark side of "flatten the curve," called out early by those willing to look both ways,[13] but never conceded at the level of national policy. Extending the pandemic timeline to avoid overwhelmed hospitals certainly made sense; extending it arbitrarily with variations of lockdown that delayed rather than prevented exposure, including after the availability of vaccines, did not. Those of us devoted to calling out such trade-offs were shouted down and excoriated for our pains. But trade-offs there were.

Flattening the curve of a virus we cannot contain (there is no precedent in the history of public health for effective containment of an air-borne, respiratory pathogen) means delay, not prevention. This might well be warranted to allow for the medical system to prepare; for the distribution of personal protective equipment- but unavoidably at the cost of more time for newly mutated viral variants to compete, and declare a new champion; and then another, and another. Our policies of imperfect viral avoidance and haphazard viral exposure were the perfect mix for an extended pandemic timeline, and thus-the on-going perils of variants against which both vaccines and prior infection offer only partial protection.

When Sense Became Heresy

Along with such non-partisan oversights as general health promotion, there are pandemic missteps more subject to partisan rancor. We overprotected some and underprotected others, incurring greater harms in both directions as a result. Whatever actions we take to defend against infectious exposure come at some cost, and a cost imposed inequitably on a diversity of communities. For some, policies of protection might represent greater risk than the pathogen, even if very much the contrary for others. A policy objective of total harm minimization[14] was, and is, the only sensible imperative-unless we choose to care more about the cause of harm than the severity and scope of it.

The idea that protection should be "focused" is not remotely radical; rather, it is, quite simply, how medicine and public health are always practiced. We don't, for instance, dispense antihypertensives to all because some have hypertension and those who don't "just might" some day. Sure, there would likely be some incremental benefit in treating hypertension prophylactically among those vaguely prone to it later in life - but there would also be a huge cost in side effects unjustified by the magnitude of potential benefit. Medicine and public health are predicated on benefit/risk ratios, and these in turn depend on stratification of both. The rabid allegation that "focused protection"[15] implied genocidal disregard[16] is not merely wrong to the point of ludicrous, but directly at odds with the prevailing standard of practice in public health and clinical medicine alike. Focused protection is what we always do.

Unearthing Root Causes

The above is already far more than we seem likely to address, to say nothing of the true, root causes of both pandemics, and their mismanagement. The former have much to do with inequities and iniquities in the global supply of food, and all the liabilities these portend, from bush meat, to "wet markets," and the haphazard intermingling of species.[17] The latter have much to do with perennial and myopic neglect of public health capacity and those proverbial ounces of prevention, as we repeatedly feed the countless pounds of cure. The omission of these mentions would be negligent, but I can't honestly muster even the hope that we would probe so deep or strive so well.

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We need not, to fare far better. A more informed and enlightened pandemic response would recognize risks from more than one source at a time; would respect that vulnerabilities across the population vary; would strive to match policy options to those variations in risk; would adapt as more data modified our understanding; would share responsibility for protective behaviors as equitably as possible; would respect the inevitability of trade-offs, that every action or inaction directed at the containment of one risk liberates some other; would provide decisive guidance from the best authorities while still conceding uncertainties and the limitations of knowledge. The admission of fallibility does not bespeak weakness; it bespeaks wisdom.[18]

A more informed and enlightened pandemic response was possible this time, based simply on time-honored principles of public health practice, the wisdom of humility, and information hiding in plain sight. For next time, we will have yet another resource: the visual acuity of hindsight. A more informed and enlightened pandemic response will ensue if, but only if, we learn from the follies of our shared and blighted history-if and only if forewarned truly is forearmed.

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