Medical News & Perspectives

White House Advisor Nahid Bhadelia, MD, MALD, on COVID-19 in Resource-Limited Nations—Undercounted Deaths, Vaccine Inequity, and More

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This July, Nahid Bhadelia, MD, MALD, joined the White House COVID-19 Response Team as senior policy advisor for Global COVID Response. The infectious disease physician is on sabbatical from Boston University, where she is a School of Medicine associate professor, founding director of the Center for Emerging Infectious Diseases Policy and Research, and an associate director of the National Emerging Infectious Diseases Laboratories.

Bhadelia spoke with JAMA in mid-September about the pandemic’s true burden of disease in low- and middle-income countries (LMICs) and ongoing COVID-19 vaccine inequity. The following is an edited version of that conversation.

JAMA: Now that you’re a few months on the job, I’m hoping you can answer what is a very broad question: how is the pandemic going for the rest of the world?

DR BHADELIA: It looks like we’re coming off of our latest peak. Particularly in the week ending September 11, you’re seeing a drop in cases globally. But although cases are dropping, many countries are still reporting a huge number of cases. We’re also seeing a drop in testing globally, particularly in low- and middle-income countries. FIND, the organization that deals with diagnostic access for low- and middle-income countries, reported a 70% drop in use of COVID testing [globally], and there has been a lag in reporting of COVID cases to WHO [the World Health Organization]. We don’t really have a full idea of what the true number of cases are. However, overall, we now know that the cases and the deadliness of the disease over time are decreasing. The infection fatality rate is decreasing over the course of the pandemic.

JAMA: Where are we now in terms of cases overall and deaths overall?

DR BHADELIA: In the week ending September 11, we had about 3.3 million [infections] globally. That brings us to over 6 million deaths globally and about 630 million cumulative cases. But I think, for many reasons, that’s probably an underestimate of the true number of cases over the course of this pandemic.

JAMA: That brings me to my next question. A July 2021 report from the Center for Global Development estimated that 3.4 to 4.9 million excess deaths occurred during the pandemic in India, which at the time had reported around 400 000 deaths. To what extent is it now believed that COVID deaths have been underreported worldwide?

DR BHADELIA: The excess mortality is probably much higher than we think. A WHO report from this spring reported that the true excess mortality [in 2020 and 2021] likely was around 14.9 million, with a range somewhere between 13 million and 16 million. A huge part of what that study found was that the number was driven by 10 countries globally, India being a big contributor.

But even as we think about those numbers, excess mortality—which is the number of additional deaths during a crisis than expected during a normal time—doesn’t actually take into account the true toll. You’ve seen disruptions in vaccinations, HIV treatments, and tuberculosis diagnosis and treatments globally. You’ve seen a drop in [global] childhood vaccination rates: it was 86% in 2019 and now it’s down to 81%. The secondary direct health impacts of the pandemic are probably much, much larger than even what the excess mortality [data] tell us.

JAMA: To date, all of Africa has reported only 9.3 million cases and fewer than 200 000 deaths. The Americas, by contrast, have reported nearly 3 million deaths, with more than a million of those in the US. What’s your thinking on the idea that underreporting alone can’t explain the relatively low numbers of cases and deaths in Africa? One theory I’ve read is that the population of Africa is relatively young, and that younger age is protective.

DR BHADELIA: I think it’s certainly a possibility. The demographics probably have an impact because we know that COVID-19 has a higher impact on patients with comorbidities, and [older] age particularly is a big part of the high-risk profile where the mortality rates go up. But the picture is probably a lot more complicated. I think we can’t underestimate the impact of underreporting. There was a WHO report that said that for registration of deaths in Europe, there’s 98% coverage. When you compare that to the registration of deaths that occur in Africa, it’s only 10%. That impact of underreporting is probably much larger than people realize.

But beyond that, I think there’s also a shift during the course of the pandemic. At the very beginning, LMICs don’t look like they’re contributing that many deaths. But once vaccines were introduced in spring of 2021, something very interesting happens. What you start seeing is that the LMIC contribution to the share of daily...
global deaths actually shoots up. That's partly because of the access of vaccines that were made available in many high-income countries.

**JAMA:** How is undercounting these deaths potentially continuing to cause harm?

**DR BHADELIA:** If that true toll is not being calculated, you may see communities and governments view the threat of COVID as not as high. And that affects individuals' acceptance of vaccines or their seeking out testing or treatment. It affects governments' investments in COVID-19, both in interventions as well as in prevention strategies. And so I think that undercounting plays a role in the continued impact of the virus in those countries.

**JAMA:** How can we get a better accounting of global COVID deaths? Can we?

**DR BHADELIA:** Excess mortality gets us partway there. The reason it's also complicated is because of the lack of diagnostics in many countries. Only 21% of diagnostics for COVID-19 are being conducted in low- and middle-income countries, despite low- and middle-income countries making up about 50% of the world's population. There is a dearth of testing and diagnostics. Making those things available to communities around the world helps us get a better sense of who's potentially dying of this disease and helps make early interventions possible—particularly now that we have oral antivirals that might make a difference in the course of disease in areas where there might be higher infection fatality rate. So, that's one way.

Two, we can get a better sense by investing in—and I think this is being done in many parts of the world—improving general core capacities of health care systems, which include information systems.

**JAMA:** As the vaccines were being developed and rolled out, many people in public health argued for equitable global access to them, and that didn't happen. How did distribution play out around the world and who was left behind?

**DR BHADELIA:** Overall, about 68% of the world has received at least 1 dose, and about 62% have finished their full primary series of 2 doses. But only 22% of low-income countries have received 1 dose, and when it comes to boosters, only 33% of the world has received that third dose.

**COVAX** was established to overcome some of the challenges that were seen during the [influenza] H1N1 pandemic, which was that vaccines were developed but it took a couple years before they were made accessible to many communities in low- and middle-income countries. Part of the goal of COVAX was to create a purchasing power that allows for low- and middle-income countries to be able to access a diversified vaccine portfolio. I think one of the struggles at the very beginning was that despite the COVAX utility being set up, it was not fully funded, and on the open market it was competing with purchasing power from high-income countries.

We were the first country that purchased vaccines for donations around the world, and that led to commitment from many G7 countries to do the same. But donations are one thing. They've been an important, critical part of what we did in that period of time where there wasn’t access, and we're still continuing to do that. But in the longer term, this administration is also interested in seeing investment in local manufacturing to create vaccines in areas of the world that don't have that capacity.

**JAMA:** Which areas really struggled to get access to vaccines?

**DR BHADELIA:** The continent of Africa throughout this pandemic has had some of the lowest vaccination rates because of the lack of access to vaccines as well as infrastructure and resources to get shots in arms. The other places that you see a potential in—specific vaccines, what's going to happen like the US are shifting toward Omicron-specific vaccines, what's going to happen with the original vaccines? Could that supply potentially help improve vaccination rates globally?

**DR BHADELIA:** I think it’s less the vaccines themselves. I think it’s ensuring that we are aiding our partners in low- and middle-income countries to build infrastructure for routine adult vaccination. Influenza vaccination almost doesn’t exist in many parts of the resource-limited world. Pneumococcal vaccines, meningococcal vaccines—it’s ensuring that there’s an infrastructure that is built for all of those within a health care system.

**JAMA:** Is there value to the idea that resources for COVID vaccine campaigns might be better spent on other vaccine-preventable diseases that potentially affect more people in lower- and middle-income countries?

**DR BHADELIA:** I don’t think the equation is either or. And the reason why is because when health care workers are affected by disinformation and misinformation around COVID-19 vaccines and a general increase in vaccine hesitancy. That work requires long-term investment in communities. Right now, many of the COVID vaccines are given through [vaccination] campaigns. Ensuring that vaccines are available and distributed to all the areas where patients get their regular care allows a space where community health workers, physicians, and nurses can have a conversation with patients to help improve [confidence in vaccines]. That requires integration of COVID vaccination with the general work that’s being done to help strengthen health systems.

**JAMA:** Now that well-resourced nations like the US are shifting toward Omicron-specific vaccines, what’s going to happen with the original vaccines? Could that supply potentially help improve vaccination rates globally?

**DR BHADELIA:** The other work that needs to be done is around vaccine confidence. We've seen, both here in the US and around the world, disinformation and misinformation around COVID-19 vaccines and a general increase in vaccine hesitancy. That work requires long-term investment in communities. Right now, many of the COVID vaccines are given through [vaccination] campaigns. Ensuring that vaccines are available and distributed to all the areas where patients get their regular care allows a space where community health workers, physicians, and nurses can have a conversation with patients to help improve [confidence in vaccines]. That requires integration of COVID vaccination with the general work that’s being done to help strengthen health systems.
COVID-19, that takes away from the stability and the resilience of health care systems and their delivery. So it impacts everybody. The booster helped ramp up protection against hospitalizations and deaths. That’s such an important part for low- and middle-income countries that may not have the same number of hospital beds [as us]. Ensuring that we divert those hospitalizations and deaths helps preserve health care capacity and resilience against other things.

So in my mind, it can’t be one or the other, but it does point to the fact that there is a struggle right now because there are so many priorities which require our attention. That requires global collaboration to ensure that we’re helping countries that are heavily affected move to the other side of this. One of the things that’s often talked about is: we’ve made all these investments in COVID-19. How do we use those investments as a jumping-off point, similar to what we did with HIV with PEPFAR programs? Could some of the investments we’ve made in COVID-19 help us diagonally improve the capacity for other provision of services?

**JAMA:** What do you hope to accomplish in your time at the White House?

**DR BHADELIA:** The number one thing is supporting the president’s vision that if we want to end the pandemic here, we actually have to support the response globally. The important part of this is ensuring that we get congressional support to continue global activities for COVID-19. If we were to be funded, it would allow us to continue to work on activities globally on COVID-19, as well as some of this transitional work, to ensure that there is diagonal development between COVID-19 and other critical health care capacities. That’s one.

Two, I took this job because I truly believe that pandemics tend to break us along known fault lines. Inequities actually make a pandemic deadlier for everybody. We’ve seen that domestically. We’ve seen that globally, and that’s my guiding light. It’s what drives me morally to do what I’m doing and what I hope continues to guide me in this position.