Why do we need a pan-sarbecovirus vaccine?

Phil Krause, M.D.
Chair, WHO COVID Vaccines Research Expert Group
January 28, 2022
The current situation

Current vaccines are based on wild-type antigens
We’ve now been through several VOCs: Alpha, beta, gamma, delta, and now omicron, with other regionally important variants (e.g., lambda and mu)
Omicron combines reduced (though still significant) virulence, greater transmissibility, and significant evasion of previous immune responses
In spite of moving quickly, by the time an omicron vaccine is available, much of omicron’s damage will have been done
Overall, this will increase worldwide immunity against SARS-CoV-2
While it is possible that a future variant will be derived from omicron, we can’t be sure
Implications

Over time, we expect increased worldwide immunity against SARS-CoV-2. Those who survive COVID infection may have significant protection against severe disease. Some believe that this heralds a (at least short term) change from pandemic to endemic COVID.

Even if that is correct, it doesn’t mean the next clinically important variant won’t evolve, but might just mean that it will take longer.

While it is possible that a future variant will be derived from omicron, we can’t be sure.

- Future variants are likely to be even more transmissible
- There’s a good chance future variants will be more evasive of previous immunity
- Virulence of future variants is uncertain

It’s even possible that another bat sarbecovirus will jump to the human population.

We need to be prepared for all possibilities.
There’s been increasing interest in pan-sarbecovirus vaccines

Key questions:
How badly are they needed?
What are the most promising approaches?
How rapidly can they be developed?
If they are developed, how can they be reliably and efficiently evaluated?
What research is needed to facilitate all of this?
How can the worldwide community contribute to eliminating the future threat of pandemic sarbecoviruses?