Promoting COVID-19 Vaccination: Do we Need to Reframe how we Present Risk?

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To the Editor:

Although impressive progress has been made in vaccinating the U.S. population against COVID-19, the country has not yet reached the level of uptake needed to assure the added benefit of “herd immunity.”\textsuperscript{1} Equally if not more concerning, substantial subgroups of the population remain skeptical if not overtly resistant to vaccination. To convince as many of these individuals as possible to change their mind, it is imperative that we communicate the benefits of vaccination in more meaningful ways.

Recently we reported how Virginia Commonwealth University Medical Center in Richmond swiftly contained an outbreak of employee infections that coincided with the “third wave” of COVID-19 that hit Virginia between December 2020 to January 2021.\textsuperscript{1} During a single week (December 13-19), roughly one percent of our entire workforce (134 of 13,346 employees) became infected with SARS-CoV2. Fortunately, we received our first doses of vaccine that same week and began vaccinating employees on December 16. The campaign that followed, along with a bundle of intensified infection-prevention measures, produced a 10-fold reduction in health care worker (HCW) infections (down to 0.1%) by January 31. Based on our local experience, we calculated that getting vaccinated against COVID-19 reduces a VCU Health employee’s odds of getting infected by 98%.\textsuperscript{2}
A potentially more compelling way to express this beneficial effect is to quantify the relative risk, compared to vaccinated colleagues, that an unvaccinated HCW will become infected with the virus that causes COVID-19. As of May 3rd, 2021, that risk is 27.9 times greater in unvaccinated HCW at VCU Health.

A recent study from Israel reported the real-world effectiveness of the Pfizer-BioNTech mRNA vaccine BNT162b2. The incidence rate of SARS-CoV-2 per 100,000 person-days was 91.5 in unvaccinated people versus 3.1 in fully vaccinated people – an effectiveness rate of 95.3 percent. In other words, unvaccinated people were 29.5 times more likely to become infected than those who were vaccinated.

Rather than focus on the risks of vaccination, which is tiny by comparison, the public would be better served by focusing on the far larger and more severe risk incurred by those who forego or decline repeated opportunities to be vaccinated.

If VCU Health data are representative of the general public, the risk that an unvaccinated adult will become infected with the virus that has killed nearly 600,000 Americans and more than 3.4 million people worldwide, is roughly 28 times higher than those who accept vaccination. This way of framing risk may be of particular value to infection prevention specialists involved in COVID-19 vaccine messaging campaigns.

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References

