The vaccine safety belt

I'm not sure if I recall seeing kids in long lines outside of school waiting to receive the polio vaccine, or if these are just memories from movie film clips. I've never seen a patient with an active polio infection, and I've seen only a few with postpolio syndromes. I've never seen a patient with tetanus, smallpox, diphtheria, or typical measles. I've seen three cases of pertussis that I know of, and the long delay in diagnosing the first one (my wife) was clearly because at that time clinicians caring for adults were not attuned to a disease that had virtually disappeared from the American landscape. Once I was sensitized to its presence, it was far easier to make the diagnosis in the second case I encountered (myself). The list of infectious diseases that have almost vanished in the last 75 years with the development of specific vaccines is not long, but it is striking. We can easily lose sight of that when focusing on the less-than-perfect effectiveness of the pneumococcal and annual influenza vaccines.

My message in recounting these observations is that, growing up in the traditional Western medical establishment, I find it hard from a historical perspective to view vaccines as anything but a positive contribution to our public and personal health. And yet a vocal minority, generally outside the medical establishment, maintains that vaccination is a potentially dangerous practice to be avoided whenever possible. Their biological arguments are tenuous and rarely supported by controlled clinical outcomes or observational data. The elimination of trace amounts of mercury-containing preservatives from some vaccines has done little to dampen their concerns. The arguments against routine vaccination and mandated vaccination of schoolchildren to maintain herd immunity have acquired a libertarian tone. While I may share the philosophy behind their perspective—for example, I wear my seat belt while driving, but I don't think I should be fined if I don't—my not wearing a seat belt does not increase the chance that those who encounter me on a plane, in a movie theater, or at an amusement park will die when subsequently driving their car.

In all likelihood, I will retire from medicine before I ever see a case of typical diphtheria. I don't think that is an accident of nature or the effect of better hygiene. I'm hoping that the generation of physicians to follow will see far less cervical cancer, and that physicians in Asia will see far less hepatitis B-associated hepatocellular carcinoma as a result of effective vaccination against the viruses associated with these cancers.

As Drs. Faria Farhat and Glenn Wortmann (page 341) and Dr. Atul Khasnis (page 348) discuss in their papers in this issue of the *Journal*, we have more to learn about how to most effectively use vaccines in special populations. It is clearly not a one-strategy-fits-all world. The decision to vaccinate these patients is usually less about public health than about the health of the individual patient.

The real-world effectiveness of many vaccines is less than it appeared to be in controlled clinical trials. Unfortunately, the patients who most need protection against infections, the immunosuppressed, have a blunted response to many vaccines and perhaps should not receive live vaccines. But we have too little evidence on how and when to optimally vaccinate these patients. It still feels a bit like a casino, not a clinic,

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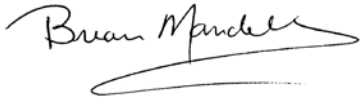
when I discuss with a modestly immunosuppressed patient whether he or she should be vaccinated with a live vaccine to reduce the risk of shingles and postherpetic neuralgia.

If we have the opportunity, vaccinating before starting immunosuppressive drugs (or before splenectomy) makes sense. But often that is not an option. We are frequently faced with the need to extrapolate efficacy and safety experiences from clinical trials of vaccines that are conducted with healthier patients and with relatively short follow-up. The two vaccination papers in this issue of the *Journal* provide us with useful information about immunologic and other issues involved when making the decision to vaccinate special patient populations.

Buckle up wisely.



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