# Is Your COVID Vaccine Venue Prepared to Handle Rare, Life-Threatening Reactions?

Every site involved in wider community rollout must be able to recognize problems and have the training and equipment to respond swiftly.

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As the rollout of COVID-19 vaccines picks up across the U.S., moving from hospital distribution to pharmacies, pop-up sites and drive-thru clinics, health experts say it's vital that these expanded venues be prepared to handle rare but potentially life-threatening allergic reactions.

"You want to be able to treat anaphylaxis," said Mitchell Grayson, MD, an allergist-immunologist with Nationwide Children's Hospital in Columbus, Ohio. "I hope they're in a place where an ambulance can arrive within five to 10 minutes."

Of the more than 6 million people in the U.S. who have received shots of the two new COVID vaccines, at least 29 have suffered anaphylaxis, a severe and dangerous reaction that can constrict airways and send the body into shock, according to the Centers for Disease Control and Prevention.

Such incidents have been rare — about 5.5 cases for every million doses of vaccine administered in the U.S. between mid-December and early January — and the patients recovered. For most people, the risk of getting the coronavirus is far higher than the risk of a vaccine reaction and is not a reason to avoid the shots, Grayson said.

Still, the rate of anaphylaxis so far is about five times higher for the COVID vaccines than for flu shots, and some of those stricken had no history of allergic reactions. In this early phase of the vaccine rollout, all the patients were treated in hospitals and health centers that could offer immediate access to full-service emergency care.

As states look to scale up distribution, the shots will be administered by a varied assortment of professionals at venues including drugstores, dental offices and temporary sites attended by National Guard troops, among others. Health officials say every site involved in the wider community rollout must be able to recognize problems and have the training and equipment to

respond swiftly if something goes wrong.

“We are really pushing to make sure that anybody administering vaccines needs not just to have the EpiPen available but, frankly, to know how to use it,” said Nancy Messonnier, MD, director of the CDC’s National Center for Immunization and Respiratory Diseases, in a call with reporters. She was referring to a common epinephrine injector that many people with severe allergies carry with them. Those health care workers must also know the warning signs of the need for advanced care, she added.

Anaphylaxis typically occurs within minutes and can cause hives, nausea, vomiting, dizziness or fainting, and life-threatening problems such as low blood pressure and constricted airways. Initial treatment is an injection of epinephrine, or adrenalin, to reduce the body’s allergic response. However, severely affected patients can require intensive treatments including oxygen, IV antihistamines and steroids such as cortisone to save their lives. Community sites are unlikely to have these treatments on hand and would need quick access to emergency responders.

Scientists are still investigating what’s triggering the severe reactions to the Pfizer-BioNTech and Moderna mRNA vaccines. They suspect the culprit may be polyethylene glycol, or PEG, a component present in both vaccines that has been associated with allergic reactions.

Even as they call for education and support for providers, experts are urging the more than 50 million Americans with allergies — whether to foods, insect venom, medications or other vaccines — to be proactive about finding a venue that’s properly prepared. Before scheduling a vaccine, contact the site and ask pointed questions about its emergency precautions, said Kimberly Blumenthal, MD, MSc, quality and safety officer for allergy at Massachusetts General Hospital.

“Ask the question: Do they have an anaphylaxis kit? Can they take vital signs?” she said. People who routinely carry EpiPens should remember to bring them when they are vaccinated, she added.

A CDC website details a list of equipment and medications that sites should have on hand and urges that all patients be observed for 15 minutes after vaccination or 30 minutes if they’re at higher risk for reactions. The list recommends — but does not require — that sites stock the more intensive treatments, such as IV fluids. People who experience severe reactions shouldn’t get the recommended second dose of the vaccine, the agency said.

“Appropriate medical treatment for severe allergic reactions must be immediately available in the event that an acute anaphylactic reaction occurs following administration of an mRNA COVID-19 vaccine,” the site says.

Still, that’s a tall order, given the scope of the vaccination effort. The federal government is sending vaccines to more than 40,000 pharmacy locations involving 19 chains, including CVS, Walgreens, Costco and Rite Aid. At the same time, dozens of pop-up inoculation sites are ramping up in New York City, and drive-thru clinics have been set up in Ohio, Florida and other states.

Drive-thru sites, in particular, worry allergists like Blumenthal, who said it’s crucial to recognize

symptoms of anaphylaxis quickly. “If you’re in a car, are you going to have your windows open? Where are the medicines? Are you in a parking lot?” she said. “It just sounds logistically more challenging.”

In Columbus, more than 2,400 people had been vaccinated by Jan. 6 at a drive-thru clinic set up at the Ohio Expo Center. No allergic reactions have been reported, according to Kelli Newman, a spokesperson for Columbus Public Health. But if they occur, she said, health officials are prepared.

“We have a partnership with our EMS and they are observing those being vaccinated for 15 minutes to make sure there are no adverse reactions,” Newman said in an email. “They have two EMS trucks available with emergency equipment and epinephrine, if needed.”

Similarly, representatives for CVS Health and Walgreens said they have the staff and supplies to handle “rare but severe” reactions.

“We have emergency management protocols in place that are required for all vaccine providers, which, following a clinical assessment, may include administering epinephrine, calling 911 and administering CPR, if needed,” Rebekah Pajak, a spokesperson for Walgreens, said in an email.

If the vaccine sites have appropriately trained staffers, plus adequate supplies and equipment, the vast majority of people should opt for the shot, especially as the pandemic continues to surge, said David Lang, MD, immediate past president of the American Academy of Allergy, Asthma & Immunology and chairman of the department of immunology at the Cleveland Clinic.

“The overwhelming likelihood is that you won’t have anaphylaxis and the overwhelming benefit far exceeds the risk for harm,” Lang said.

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