

## A Few Covid Vaccine Recipients Developed a Rare Blood Disorder

A link to the vaccines is not certain, and investigations are underway in some reported cases.

By Denise Grady

Feb. 8, 2021

One day after receiving her first dose of Moderna's Covid vaccine, Luz Legaspi, 72, woke up with bruises on her arms and legs, and blisters that bled inside her mouth.

She was hospitalized in New York City that day, Jan. 19, with a severe case of immune thrombocytopenia — a lack of platelets, a blood component essential for clotting.

The same condition led to the death in January of Dr. Gregory Michael, 56, an obstetrician in Miami Beach whose symptoms appeared three days after he received the Pfizer-BioNTech vaccine. Treatments failed to restore his platelets, and after two weeks in the hospital he died from a brain hemorrhage.

It is not known whether this blood disorder is related to the Covid vaccines. More than 31 million people in the United States have received at least one dose, and 36 similar cases had been reported to the government's Vaccine Adverse Event Reporting System, VAERS, by the end of January. The cases involved either the Pfizer-BioNTech or Moderna vaccine, the only two authorized so far for emergency use in the United States.

But the reporting system shows only problems described by health care providers or patients after vaccination, and does not indicate whether the shots actually caused the problems.

Officials with the Food and Drug Administration and the Centers for Disease Control and Prevention said that they were looking into the reports, but that so far, rates of the condition in vaccinated people did not appear higher than the rates normally found in the U.S. population, so the cases could be coincidental. Overall, the vaccines are considered safe. A small number of severe allergic reactions have been reported, but they are treatable, and the rates are in line with those reported for other vaccines, regulators say.

In a statement, Pfizer said: "We take reports of adverse events very seriously," and added that it was aware of thrombocytopenia cases in vaccine recipients.



Dr. Gregory Michael in a photo posted to Facebook by his wife.  
via Facebook

The statement also said: "We are collecting relevant information to share with the F.D.A. However, at this time, we have not been able to establish a causal association with our vaccine."

Moderna also provided a statement, which did not address the question of the platelet disorder, but said the company "continuously monitors the safety of the Moderna Covid-19 vaccine using all sources of data" and routinely shares safety information with regulators.

Hematologists with expertise in treating immune thrombocytopenia said they suspected that the vaccine did play a role. But they said that cases after vaccination were likely to be exceedingly rare, possibly the result of an unknown predisposition in some people to react to the vaccine by developing an immune response that destroys their platelets. The disorder has occurred, rarely, in people who received other inoculations, particularly the measles-mumps-rubella one.

“I think it is possible that there is an association,” Dr. James Bussel, a hematologist and professor emeritus at Weill Cornell Medicine who has written more than 300 scientific articles on the platelet disorder, said in an interview. “I’m assuming there’s something that made the people who developed thrombocytopenia susceptible, given what a tiny percentage of recipients they are.”

He added: “Having it happen after a vaccine is well-known and has been seen with many other vaccines. Why it happens, we don’t know.”

Dr. Bussel said it was important to share information about the cases, because severe thrombocytopenia can be serious, and physicians need to know how to treat it. Sometimes the condition resists standard therapies, and if very low platelet counts persist, the patient faces an increasing risk of severe bleeding and even brain hemorrhage.

He and a colleague, Dr. Eun-Ju Lee, have submitted an article to a medical journal on 15 cases in Covid vaccine recipients they identified by searching the government’s database or by consulting with other physicians treating patients. The report provides information about treatments and urges doctors to report cases. It also notes that it is too soon to tell whether the affected patients will have lasting recoveries, or recurrences of the platelet problem.



Ms. Legaspi, right, in a photo taken by her daughter that shows bruising and bleeding under the skin caused by the lack of platelets. via Luz Legaspi

A few of the patients had previously had platelet disorders or other autoimmune conditions that might have made them vulnerable, Dr. Bussel (pronounced Bew-SELL) said. People can have low platelets without symptoms, and it is possible that in some, a vaccine reaction could drop the level further, to a point where it becomes apparent by causing bruises or bleeding, Dr. Bussel said.

He has been a paid consultant to Pfizer, not on vaccines but for a drug for the platelet disorder.

Dr. Jerry L. Spivak, an expert on blood disorders at Johns Hopkins University, also said the connection to the vaccine appeared real, but predicted that cases would be exceedingly rare and called them “idiosyncratic,” perhaps related to underlying traits in individual patients.

#### The Coronavirus Outbreak ›

#### Latest Updates ›

Updated 4 hours ago

- [Another monoclonal antibody therapy is authorized for high-risk Covid-19 patients.](#)
- [A few vaccine recipients have developed a rare blood disorder.](#)
- [Built on lessons from 2020, the M.L.B. has a new set of pandemic-related rules.](#)

The cases are not a reason to avoid Covid vaccination, doctors say. The risk of serious illness from the coronavirus is much greater than the risk of developing this rare condition, and the vaccines are crucial for controlling the pandemic.

Ms. Legaspi’s daughter said the last thing that she and her mother wanted to do was create fear of the Covid vaccines. Both women still believe strongly in the need for them, despite Ms. Legaspi’s illness, her daughter said. The daughter asked, at her employer’s request, that her name not be used.

In its most common form, immune thrombocytopenia is an autoimmune disease that affects about 50,000 people in the United States, according to a support group for patients. The condition develops when the immune system attacks platelets or the cells that create them, for unknown reasons. It sometimes follows a viral illness, and can persist for months or become chronic and last for years. It is generally treatable. Professional groups have advised that patients with the disorder be vaccinated for Covid, but after consulting with their hematologists.

Sarah C., a teacher in Texas, spent four days in the hospital receiving platelet transfusions, immune globulins and steroids to restore her platelet count. Nitashia Johnson for The New York Times

Ms. Legaspi was strong and in good health before receiving the Moderna vaccine. But when she was admitted to the city hospital in Elmhurst, Queens, her platelet count was zero. Normal readings range from 150,000 to 450,000, and anything under 10,000 is considered very dangerous and in urgent need of treatment.

Doctors ordered Ms. Legaspi to not even get out of bed without help, for fear that if she fell and injured herself she could hemorrhage. They began giving her the standard treatments, including platelet transfusions along with steroids and immune globulins meant to stop her immune system's war on her platelets.

Nothing worked. Her platelets would rise a bit and then crash again between treatments.

As the days passed with no progress, Ms. Legaspi's daughter, aware of Dr. Michael's death, worried increasingly that her mother would suffer a brain hemorrhage.

"I don't think she understands she's like a ticking bomb," the daughter said in an interview on Jan. 28, after her mother had been in the hospital for more than a week with no improvement. "I don't use the term. I don't want to tell her that."

Ms. Legaspi, from the Philippines, speaks only some English, but understood that her condition was serious, said the daughter.

### What You Need to Know About the Vaccine Rollout

- Providers in the U.S. are administering about 1.3 million doses of Covid-19 vaccines per day, on average. Almost 30 million people have received at least one dose, and about 7 million have been fully vaccinated. [How many people have been vaccinated in your state?](#)
- The U.S. is [far behind several other countries](#) in getting its population vaccinated.
- In the near future, [travel may require digital documentation](#) showing that passengers have been vaccinated or tested for the coronavirus.
- When can you get the vaccine? What are the vaccine's side effects? Is it safe to take during pregnancy? [We've have answers to many of your questions.](#)

**SEE MORE** ▾

Dr. Bussel heard about her condition and, although he works at a different hospital, he called her doctor on Jan. 28 and offered to consult on Ms. Legaspi's care. He also contacted Dr. Michael's family to ask what treatments he had received — partly as a way of finding out what had not worked.

Dr. Michael's death had come to public attention after his wife, Heidi Neckelmann, disclosed it on Facebook.

Ms. Neckelmann said in a text, "I am glad that Dr. Bussel reached out to me. I told my story with the intention of helping those in the same or similar situation." She added: "I hope that other people can now benefit with Dr. Bussel's experience. I wish my Gregory had had that chance."

On Jan. 29, Dr. Bussel sent Ms. Legaspi's physician, Dr. Niriksha Chandrani, an email labeled "my strong recommendations," noting that he was "very afraid" Ms. Legaspi would have a brain hemorrhage, and advising a different course of treatment. Dr. Chandrani, the chief of oncology at Elmhurst, realized that Dr. Bussel was a leading authority on the platelet disorder, and she took his advice.

She had spent several sleepless nights worrying about Ms. Legaspi.

"I didn't want her to die," Dr. Chandrani said.



Ms. Legaspi's bruising cleared up after a change in treatment, and she was released from the hospital last week.  
via Luz Legaspi

A day later, Ms. Legaspi's platelet count had reached 6,000: "slow but steady progress," Dr. Bussel said. The next morning, it was 40,000, which took her out of the highest danger zone. Two days later, on Feb. 1, it was 71,000.

It is impossible to tell whether the new treatments worked, if the initial ones kicked in or if she recovered on her own. But on Feb. 2, she went home from the hospital to the apartment in Queens that she shares with her daughter and 7-year-old grandson. On Feb. 4, her daughter said, Ms. Legaspi's platelet count was 293,000.

Another vaccine recipient, Sarah C., 48, a teacher in Arlington, Tex., received the Moderna vaccine on Jan. 3. She asked that her full name not be used to protect her privacy.

Two weeks later, she began to have heavy vaginal bleeding. After two days she saw her obstetrician, who ordered blood work and scheduled other tests. A few hours later, he called and urged her to go straight to the emergency room. He was stunned and hoped it was a lab error, but her blood count showed zero platelets. She had had a checkup with completely normal blood-test results less than a week before being vaccinated.

The reading of zero platelets was not a lab error. The results were confirmed in the emergency room, and doctors there also noticed red spots on her wrists and ankles, caused by hemorrhages under the skin. Sarah C. had seen the spots, but ignored them.

She spent four days in the hospital, receiving platelet transfusions, immune globulins and steroids to restore her platelet count.

She described the experience as terrifying. “Especially when people say they’d never seen this before, that you could bleed out or hemorrhage,” she said. “That was the biggest concern, and just not knowing. The gentleman in Florida, he didn’t make it. Certainly the fear was there.”

Even so, she said: “I’m all for the vaccine. I had a terrible horrible reaction and just hope people are aware of what to do if something happens, to watch for these symptoms and get help immediately.”

If she had known enough to recognize the red spots and bleeding as danger signs, she said, she would have gone to the emergency room much sooner.

Recently, she received a notice saying it was time for her second shot of the Moderna vaccine. Her doctors have said she could go ahead and take it, but she decided to wait, though she said she did want another dose.

“I don’t know if I’ll do the same one,” she said. “Maybe a different one.”

---

Denise Grady has been a science reporter for The Times since 1998. She wrote “Deadly Invaders,” a book about emerging viruses. @nytDeniseGrady

A version of this article appears in print on , Section A, Page 7 of the New York edition with the headline: A Few Recipients of Covid Vaccine Developed a Rare Blood Disorder