

## The Trip of a Lifetime

by Laura Power

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My husband seemed jealous early last March when he learned that four of his college pals were off on a ski trip to Vail. “That’s some pretty sweet snow out there,” he said. His envy became deep concern, however, a few weeks later when he learned that one of the four lie in an intensive care unit, perhaps deathly ill.

The buddies, Randy John, Jack Lawlor, Mark Twentymen, and Roland Aberg (and my husband) all met as students at Cornell University in the early 1970s. The four became fast friends as brothers in the Alpha Sigma Phi fraternity. Reunions brought them together over the years, and they often organized other little get togethers. In late 2019, they planned a trip to Vail.

All were aware of covid-19, but none felt worried. They’d done some research. In early March, all known cases of the virus were in California and Washington. No infections were reported in Colorado or contiguous states. “We felt pretty secure,” said Randy.

An estimated 650,000 visit the Vail Ski Resort each winter, from many nations. For the four friends, the late winter skiing was near perfect. The weather was sunny and crisp. During the day they cruised over powdery snow. At night, they enjoyed fine dining and great conversation. They were back and forth through the charming little Vail village many times, often on a small commuter bus. Their fun, and joy in their friendship, was interrupted only fleetingly by reports of a covid-19 outbreak in New Rochelle, New York. The images of Governor Andrew Cuomo’s grim countenance that flashed across a lodge television screen seemed surreal and very far away.

Near the end of the trip, though, there were hints of trouble. When Randy visited a local emergency room for treatment of dehydration, he asked if there were any covid-19 cases in town. The attending nurse didn’t say much. At the hospital entrance, visitors Jack and Roland were questioned about symptoms by security guards wearing face masks. Still, on their final ski day, all but Randy boarded the eight person gondola for multiple runs.

“We didn’t understand fully that we were in the middle of a petri dish,” says Roland. On March 11th, the friends bagged up their skis and headed to the Denver airport.

At home on Long Island, Jack had the sniffles, which he attributed to a cold. Soon, he was back to normal habits, and out walking on the beach. He felt no need to call his physician.

In Minnesota, Roland felt lethargic and achy. His fatigue intensified over the next couple of days. Finally, when his wife read in the newspaper that someone in Vail had tested positive for covid-19, “the pieces started fitting together.” Roland called his doctor, who provided him a pass for a nearby drive-through testing site, which opened for the first time just that day.

Of the four friends, Randy initially seemed to be the hardest hit. For a week he battled acute fatigue, low grade fever, and aches. A few days after his return his doctor authorized a test. Randy was the first person in line when a drive-in clinic in nearby Radnor, Pennsylvania opened.

By the time Roland and Randy learned their test results, both positive for the virus, their symptoms had abated. Jack’s “cold” had cleared up, too, but with two companions known to be infected, he felt he should be tested as well. He called his county health department, but by then New York was so overwhelmed by infections that testing was open only to health care professionals and hospitalized patients. He was told that his name would be put on a “list.”

Mark, at home near Albany, thought he had dodged a bullet. He felt fine. After a week, he packed up for a solo drive to Florida to meet his girlfriend, Linda, at her place in Cocoa Beach. He slogged along through the 1,365 mile drive, his blithe outlook intact. That didn’t last.

When he got to Linda’s, Mark felt tired and irritable. He soon called his friends to say that he was in bad shape. A test the next day confirmed a covid infection. But Mark didn’t feel the need for a hospital. He hoped to ride out the course of the virus with Linda’s help. She isolated him as much as she could in her three bedroom condo.

Early on, it was hoped that the malaria drug hydroxychloroquine, either with or without the antibiotic azithromycin, might help mitigate the impact of covid-19. Mark’s doctor prescribed both, but they didn’t seem to help. Mark felt tired and hot but he didn’t have a thermometer to monitor his temperature. Every store Linda visited was sold out. Randy sent him an extra via overnight mail.

Although Mark didn't feel short of breath, he had other symptoms of oxygen deficiency. He was restless and headachy. He had no energy or appetite. His doctor ordered oxygen tanks and an oximeter, a finger clip device that measures oxygen concentration in the blood. But his symptoms persisted and even with the supplemental oxygen, the oximeter registered a low, downward trending oxygen concentration. His appearance during a FaceTime call shocked his physician daughter-in-law, Becky. "You need to be seen immediately," she begged after assessing his symptoms.

An ambulance shortly whisked Mark away; the driver chose a nearby hospital, where he knew a ventilator was available. The admitting nurse sent Mark straight to the intensive care unit (ICU) where he was quickly intubated and hooked up to a ventilator.

Mechanical ventilation is an element of care sometimes used when insufficient oxygen is absorbed into the blood. Pressure, volume, flow, concentration and other variables can be adjusted to patient needs. Unfortunately, ventilator use may also cause problems. Pneumonia and damaged or collapsed lungs may result. Sedatives used to keep a patient comfortable may have side effects. And, mechanical ventilation does not guarantee survival.

Daughter-in-law Becky spoke daily with Mark's care providers. Colleagues from her time as a resident at a New York hospital were now caring for dozens of covid-19 patients, and Becky was already immersed in their discussions about treatments through an extensive Facebook group. Her experiences as a Medical Officer with the Centers for Disease Control (CDC) had her asking herself, "what else can be done?" What about the therapeutic drug remdesivir? Or the rheumatoid arthritis treatment tocilizumab? What about convalescent plasma, and other possibilities? She began researching.

Ups and downs, but mostly downs, roiled Mark's hospital stay early on. For a few days, he seemed stable, and drugs that had been administered to maintain his blood pressure were discontinued. It seemed that he might recover. But then he wavered. Some days he had a fever, other days not. A few times, he tried breathing on his own, but quickly became too tired. Ventilator settings were adjusted up and down, based on what he could tolerate. Then he again needed the blood pressure drugs. Enzyme levels associated with inflammation damage trended upward.

At the end of the first week, one of Mark's lungs ruptured, a catastrophic event requiring surgery. His ventilator was set for maximum oxygen, with little effect. Dosage of the blood

pressure drugs had to be increased. And, he had blood clots in both lungs. Becky and her husband, Michael (Mark's son), got a call from the ICU: Do you want us to keep going, or should we stop treatment?

When he learned that his friend Mark was tethered to a ventilator, and quickly deteriorating, Randy was overwhelmed with emotion. Becky had been texting frequent updates, and Randy, Roland and Jack checked in every day. Now Randy told the other two, "Cards and prayers are not going to cut it, we have to do something."

Randy had done some reading about the early twentieth century Spanish influenza pandemic. A handful of century-old studies, he learned, suggested that injections of blood plasma or "serum" from influenza recoverees could be an effective treatment for patients still battling the disease. He had recovered from covid-19 and now presumably his blood plasma teemed with disease fighting antibodies. Randy also knew, coincidentally, that he and Mark were both A positive blood types, so Mark was a compatible recipient. Randy wondered, could he help Mark by donating his plasma? If there was any chance, he wanted to do it.

Mark's family had quickly opted for the surgery to repair his collapsed lung. Then Becky's urgent pursuit of investigational treatment possibilities began to bear fruit. Because the now pandemic covid-19 was a national health emergency, the Food and Drug Administration (FDA), the federal agency charged with overseeing the safety of biological products, allowed a Single Patient Emergency Investigational New Drug application for convalescent plasma. It was approved for Mark. But Becky had to find a compatible donor.

In the meantime, Randy felt like he was the only person talking about plasma donation. He shared the idea with Roland and Jack. He got on the phone to Linda and asked her to suggest it to Mark's doctor. More than 14 days had passed since Randy's positive test, and he knew that if a plasma donation was possible, he'd need a negative covid-19 readout to qualify. He arranged for a test, which happily came back negative. Linda suggested to Becky that Randy might be a plasma donor.

Because of past whole blood donations, Randy had established a relationship with a blood center near his home in eastern Pennsylvania, and he called to ask if he could come in and donate plasma for a friend. But the scheduler he talked with couldn't help. We've never done this, she told him, there's no protocol.

So Randy enlisted Becky's help to figure it out. There were other details to work out as well. A receiving blood bank had to be found in Florida, as the plasma could not be shipped directly to Mark's ICU. The hospital's Board of Directors also had to be persuaded to allow a plasma transfusion that was "investigational." They hesitated. For several days, Randy and Becky both were on their phones with the various blood bank and hospital principals, explaining, convincing, and advocating for Mark.

On April 7, a relieved Randy went to the blood center and four 200 milliliter units of plasma were extracted. But they couldn't leave the blood bank for a full day, while a sample of Randy's whole blood was tested for AIDS, hepatitis and other blood borne diseases.

Two units of the plasma arrived at Mark's bedside none too soon (the other two units went to a patient in New Jersey). Mark was still fighting blood clots and pneumonia. Within 12 hours of transfusing the first unit, though, Mark showed dramatic improvement. His 104 degree fever broke. His blood pressure stabilized. Indicators of inflammation all improved. But Mark still needed the ventilator. He received the second plasma unit the next day, and then his doctor was able to gradually adjust the ventilator settings so that its breathing support was near minimal.

But the impact of convalescent plasma may be temporary. If the quantity and quality of antibodies in the donated plasma are sufficient to overcome the recipient's viral load, the patient may recover fully. If not, there can be setbacks.

For Mark, the effect of the first units of plasma seemed to diminish after his initial improvement. "Three days past donation, he started getting significantly worse again," said Becky. He'd also been sedated for days, and his doctor wanted to wean him so that the ventilator could be removed. But Mark wouldn't wake up.

Sometimes, a tracheotomy is used as an intermediate step when removing a patient from a ventilator. A surgeon cuts a slit in the neck below the vocal cords so a breathing tube can be inserted directly to the trachea, where it will not interfere with the nose, mouth, or throat. The tracheotomy tube collar that the patient wears after surgery offers advantages. Often, the patient requires less sedation and is more comfortable than when intubated. The options for delivering oxygen through the collar may help a patient more quickly breathe on his own.

Mark's doctor wanted him to have a tracheotomy, but the hospital's surgical team declined to operate. Mark is too ill, they said. They insisted on additional improvement. So Randy agreed to donate another batch of plasma. But Becky agonized over the timing.

She worried that the plasma, if it arrived on a Friday, would be transfused too soon. She feared that Mark's improvement from the donation might not last long enough to allow for a Monday or Tuesday morning surgery. She tried to ensure that everyone in the ICU knew to delay the transfusion until the night before.

In the end, the plasma arrived, the ICU staff got the transfusion timing right, and Mark perked up. The tracheotomy was successful. Within three days, Mark was no longer sedated and could breathe on his own for extended periods. He was likely one of the first convalescent plasma recipients in Florida.

Then there was one more thing. Mark developed an arrhythmia, or irregular heartbeat, maybe as a result of lingering effects of the hydroxychloroquine he'd taken earlier. Some arrhythmias can be relatively harmless, but Mark's was dangerous. "They used the paddles on you," Becky told him later; his doctor had to shock Mark's chest to bring his heart back to a normal beat.

After a month of mostly breathing on a ventilator, Mark moved from the ICU to a long term acute care hospital. Thirty days later, he finally transferred to a rehabilitation facility.

Many fingers-crossed people tracked Mark's setbacks and victories over an extensive email web. His three skiing buddies forwarded emails to other Alpha Sigma Phi brothers who in turn passed the updates along to yet others. Mark's family members likewise shared news until eventually many residents of Homer, New York, where Mark grew up, daily searched their emails to see how he was doing. Brazilians who were touched by his long ago Peace Corps stint checked in for reports of his progress. Becky's entire network of healthcare providers followed Mark. Dozens of people who never met Mark, but knew people who knew him, cheered for his recovery. When he left the hospital, hundreds celebrated.

Convalescent plasma donations are now possible in thousands of locations across the United States. As of early October 2020, there have been more than 85,000 infusions as part of an FDA Expanded Access to Convalescent Plasma program for covid-19 patients. "Based on scientific evidence available," says the FDA website, "this product may be effective in

treating covid-19..." Patients and donors can participate through clinical trials, with approved partners, or through a single patient emergency process.

Although Randy's efforts turned out to be the critical path to getting convalescent plasma to Mark, Jack and Roland labored hard to do it, too.

Jack's early efforts to be tested in New York were all rebuffed, but In mid-April, an antibody test confirmed that he'd had covid-19. He signed up as a donor at a nearby blood bank, where he's given plasma every every two weeks or so since.

Inspired by Randy's persistence, and armed with the knowledge that he, too, had type A positive blood, Roland tried repeatedly to donate plasma for Mark. But, "I couldn't get anybody to talk about it," he says. When he was finally got a call-back, Roland's donation was too late for Mark, who was already well on the road to recovery. But it did cause a stir at the local blood bank. "I was treated like royalty," says Roland.

Both Jack and Roland feel that Randy saved Mark's life. And, the 150-bed hospital where Mark received his treatment now has the systems in place to accept convalescent plasma. That's helped patients who've come after Mark.

Mark went home to Linda in mid June. He faces weeks of recuperation. One vocal cord is paralyzed "for now" which makes speaking difficult but not impossible. Bed sores so severe that they exposed bone were still healing in July. When he moved from the hospital proper to a rehabilitation facility, an attendant told Mark, "clinically, you are like a quadriplegic." He had no strength in his arms or legs; he couldn't even raise an arm up off his bed. His fingers wouldn't move enough to send a text. Thanks to several weeks with a "drill sergeant" physical therapist and his own hard work, Mark's physicality markedly improved. He gets around with a walker, and has full control of his arms and hands. He gains strength everyday, but doesn't expect to be back to normal until 2021.

Mark remembers little about his ordeal. Much of what happened after he arrived in Florida is cloaked in a haze of just feeling bad. He recalls nothing of his ICU stay. But in the blur left by illness and trauma and recovery, he hasn't forgotten his sense of humor. When asked what he'd do differently, his reply: "I wished I'd skied in Vermont instead."

*Note: this draft by Laura Power was adapted from the source document for the eventual Cornell Alumni Magazine article "Band Of Brothers" published in September-October 2020. This draft*

*was for publication in a Woodstock, VT paper. Much more since then could be written about Mark's long recovery but this was an excellent capture of the worst initial times of the Covid-19 pandemic.*