

Barbara Dröher Kline, New Prague, Minnesota
March 18, 2021

PGx legislation

I have been advocating for greater use of this technology for many years. I became familiar with it around 2003 when a friend of mine, Linda who shared the letter she received from Mayo which told her which medications she can tolerate which and which ones she could not. She thought she had lost everything.

Linda was a Lutheran minister's wife and teacher who became relentlessly psychotic in her mid-fifties and considered untreatable. She left her family behind and move in with my family in Le Sueur County. She had been receiving electric shock treatment and heavy medications previously.

She had wonderful case management and supports in Le Sueur County but medications continued to be a challenge. She was hospitalized at St. Peter State hospital on several occasions as that was the only inpatient option at that time. She was under court custody at one time because she refused hospitalization.

The letter gave her hope and changed her life. She has now been living independently for many years with rare hospitalizations.

So, when my husband became relentless depressed in his early 60's, I sought this test and could find no one to do it. We had excellent psychiatric care but none with experience with the test. My husband had to take an early retirement due to his disability and it took life away from him too.

Fortunately, I learned that my family doctor's private practice clinic was familiar with the test and ran it for my husband. The results take around two weeks.

One week later he was hospitalized at United in St Paul. We got the test results the day before he was to start electric shock treatments. The results showed that he does not metabolize the medications he was on and that the increased doses made him toxic. He was hospitalized two more weeks, had outpatient day programming and groups for his recovery. He has not had electric shock treatments.

This was August 2016. I called NAMI MN and shared our story and Sue Aberholden called the U to do a workshop at their fall conference. The workshop had a packed room full of advocates and professionals who were unaware of this test and I was able to meet the U Pharm folks and talk about getting the word out.

I shared our story with MN Post because of how our families lives dramatically changed due to this test.

I support this much needed and overdue task force, especially now with the overwhelming mental health issues in our communities and the increased use of medication.

As a social worker, I am familiar with the Texas Medication Algorithm Project which was developed to slowly introduce medications, wait 6 weeks increase, wait 6 weeks increase or change.....a slow and painful process to introduce medications and wait to see the results. For people with severe and unrelenting mental health issues there is too much to lose and no time to wait.

I am willing to testify via ZOOM as well.

MINNPOST

MENTAL HEALTH & ADDICTION

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In a world of options, genetic testing may help identify the right psychiatric medication

By [Andy Steiner](#) | 04/01/2019



MinnPost photo by Andy Steiner

Barbara Dröher Kline, right, with husband John Kline: "I wanted my husband to get his life back."

John Kline has fought depression for most of his adult life. But this felt different. The **New Prague** man was in so much emotional pain that he couldn't move. It took every ounce of strength he had just to get himself to get off the couch to go to the bathroom.

"I hurt everywhere," he said. "There's a lot of pain with depression. It's hard to describe. You beat yourself up. You get ruminating. You get on a track: It keeps going around. You can't stop it. I felt like I couldn't move."

The severity of Kline's depression frightened Barbara Dröher Kline, his wife of nearly 25 years. The couple consulted counselors, psychiatrists, a general practitioner, wellness specialists. Experts suggested a range of therapies and adjusted Kline's antidepressant medication. But nothing seemed to help.

Years ago, when he had fallen into a similar funk, Kline felt his depression lifting after his doctor prescribed **Prozac**.

"It was life-changing," he recalled.

But this time around Prozac wasn't making a dent in his symptoms. Neither were any of the other medications he was offered.

“They kept loading it up and increasing it and trying it, and he was not getting better,” Dröher Kline said. “If anything, he was getting worse.”

Years before, the couple had a close friend who had struggled to find the right medication to treat her psychosis. She got help after physicians at the **Mayo Clinic** ran a genetic test that identified psychiatric medications that were a safe match for her DNA. These tests, which were developed in the last 15-20 years, are now widely available, and are known as **pharmacogenomic tests**.

“It helped her get her life back,” Dröher Kline recalled. Maybe, like their friend, John wasn’t able to metabolize the different psychiatric medications that he’d been taking, she theorized. Maybe a DNA test could point doctors to drugs that might work: “I wanted my husband to get his life back, too.”

Up from under

Because she knew that this sort of specialized test had to be ordered by a physician, Dröher Kline set out to find a doctor who would be willing to approve one for her husband.

This proved harder to do than she’d anticipated.

“I went looking for a doctor to run the test for John,” Dröher Kline said. Physicians the couple approached seemed to be surprisingly in the dark about these tests. “We were seeing a top-notch psychiatrist who is very well known in Minnesota,” she said. “He’d heard vaguely of the test but he’d never ordered it. Other doctors we talked to were the same way.”

Then help came from a surprising source. On an impulse, Dröher Kline talked to Heather Hamernick, their family physician in New Prague.

“I asked, ‘Can you do this DNA test? I can’t find anyone else to do it,’” Dröher Kline recalled. “She said, ‘Yeah. I’ve done it. I can order it.’” Hamernick gave Kline a **GeneSight** test, a pharmacogenomic test developed by a Mayo Clinic physician.

While the couple waited for results from Kline’s test, they continued his treatment. They admitted him to the **inpatient mental health program at United Hospital in St. Paul**, with plans to get a series of **electroconvulsive therapy (ECT)** treatments.

Kline had been in the hospital for a week, and was scheduled for his first ECT treatment the next day, when results of his DNA test arrived. The report listed antidepressant medications that could cause gene-drug interactions. Prozac was on the report’s “significant gene-drug interaction” list.

“He was toxic for Prozac, which the doctors had kept increasing,” Dröher Kline said. With these test results in hand, doctors at United decided to hold off on Kline’s ECT. They kept him in the hospital for two more weeks while they adjusted his medications and helped him work toward recovery.

It took time to find the right balance of antidepressant medications and therapies to treat Kline’s depression. But these days, while his emotional state can be wobbly at times, he’s feeling stronger than he has in years. He credits the knowledge he’s gained from his DNA test with helping him understand the most effective approach to his treatment.

“How you metabolize substances is one of the key things in this test,” Kline explained. Physicians helped him interpret the results. “If you are taking an antidepressant, you might need more of a particular one because you metabolize it faster. Or, if your metabolism is slower, you might need a lesser dose.”

Kline realized that his depression was waning when his energy slowly started to return. After he was released from the hospital, he entered a group **outpatient mental health treatment program** at Fairview Riverside Hospital in Minneapolis. During that program, Kline developed skills that aided in his recovery.

“In treatment, I learned to make deals with myself,” he said. “If I was on the couch and I felt like I was stuck, I came up with the idea, ‘I have to do at least one thing,’ so I’d stand up. That was one thing. Then, once I was up, I’d feel ready to do the next thing. That’s how I started to get better.”

Getting the word out

Kline and Dröher Kline hope that other people with treatment-resistant mental illnesses don’t have to wait as long as they did to find a medication that works. With Dröher Kline leading the charge, they’ve set out to let as many people as possible know about the promise of pharmacogenomics for the treatment of mental illness.

They reached out to the state’s top mental health advocates, including Sue Abderholden, executive director of **NAMI Minnesota**. Abderholden said that she’s talked to many people about these tests, which she considers promising for treatment of treatment-resistant mental illnesses.

“We get a lot of questions about it,” Abderholden said. “When people have called me about them is usually when they’ve been through several medications and nothing is working. They’re looking for answers about treatment options. This is something that people want to have.”

The **Minnesota Precision Medicine Collaborative** (MPMC) is a program of the University of Minnesota focused on advancing research and communication about the promise of pharmacogenomic-enabled health care. Dröher Kline shared her husband’s story with faculty and staff affiliated with MPMC, in hopes that it could be used to help lawmakers and others make decisions about funding that could increase awareness and make these tests available to more people around the state.

“They’re trying to promote the U taking leadership to the state on this issue,” Dröher Kline said. “They are getting the word out there and setting up protocols for when these kinds of tests should be used,”

Jeffrey Bishop, associate professor in the **University of Minnesota’s College of Pharmacy’s department of experimental and clinical pharmacology**, said that university researchers are focused on expanding knowledge and understanding of how genetic testing can impact the way medical professionals prescribe and administer medications.

“The University of Minnesota has something called the **Grand Challenge Initiative**,” Bishop said. “These are big, ambitious challenges. One of the areas the U is supporting now falls under the topic of tailored health solutions.”

In January, it was announced that a group of university researchers received grant support to head a new project, titled “**Toward Pharmacogenomics-Enabled Healthcare at Statewide Scale: Implementing Precision Medicine**.”

The group will, Bishop said, “conduct research and increase educational activities in the area of pharmacogenomics with the idea of addressing the challenge of how this can be something that can be accessible to more people around the state.”

Stories from people like Kline help illustrate the roadblocks that many people encounter when trying to find appropriate treatment for their mental illness, Bishop said. “There are a number of examples where people have obtained a test after finding out specific pieces of information about how they might metabolize different medications because of their genetic background that has influenced how their doctors have chosen medications moving forward. Not every physician knows about these tests.”

Alice Kirchhoff, content communications manager for the Minneapolis-based **OneOme**, developer of the **RightMed** test, said that while the science of pharmacogenomics is still growing, important organizations are putting their weight



Jeffrey Bishop

behind getting the word out about how this approach to treatment, also known as precision medicine, could save time and money for patients and providers.

“The U of M is doing a lot of research in the area of precision medicine,” Kirchhoff said. “The Mayo Clinic has also made this a focus. With these two really big names making a push, we’re probably getting close to a point where people are starting to know about it.”

The next step, Kirchhoff said, is to make sure that key stakeholders understand how to use the knowledge that such tests provide.

“There is a lot of educating the market that goes on right now and trying to get providers aware of this and give them the tools to leverage pharmacogenomics in their practices and with their patients.”

Bishop agrees. “Learning more about how and when to get testing is a big challenge and something that we need to know more about,” he said. “We’re still learning more about how to use this information once we have it.”

The promise of precision medicine

Genetic tests like the one that Kline took offer great promise in the treatment of mental illness, said Bryan Dechairo, executive vice president of clinical development for **Myriad Genetics**, the company that manufactures and distributes the GeneSight test.

Not all medications work for everyone. Antidepressants are a good example. It usually takes several tries before a patient with depression finds the drug that works for them. Living in the **liminal space** between diagnosis and remission can be distressing. For people like Kline who struggle to find the right medication, pharmacogenomics could help speed the process of recovery.

“Half of patients with depression don’t respond to their first medication,” Dechairo said. “The goal of depression treatment is remission, according to the **American Psychiatric Association**. Only about 40 percent of patients reach remission with their first medication.”



Bryan Dechairo

Enduring failed attempts at finding the right medication can be discouraging — and expensive, Dechairo said. He believes that genetic testing can help people with treatment-resistant depression find a medication that works for them in less time.

“There are currently over 56 different medications that a doctor can choose from to treat depression,” he said. “Imagine that there is one medication that will work best for you. It is like trying to find a needle in the haystack.” Genetic testing kits like GeneSight, he added, “Removes a lot of the hay, and that makes it easier to find that needle.”

Bishop sees promise in these kinds of tests, though he cautions that patients need professional guidance to interpret the results.

“I think there is a real opportunity for these tests to be helpful,” Bishop said. “There is also an opportunity for us to learn more about when and exactly how to obtain this type of test information. I’m very enthusiastic about the potential, but when to get a test is something that a patient needs to discuss with their treatment providers. Their doctor, their pharmacist, may be helpful to engage in this conversation.”

Kline said his test results give him a new perspective on treating his depression. Before, in his darkest hours, he thought that depression was something that was going to consume the rest of his life, that he was powerless to make a change. Now he sees treating his depression like a project, something that he — with the help of his wife and his care team — can take on and improve.

“When I was in the program at Fairview Riverside, after I’d adjusted my medications,” Kline said. “I came up with the whole idea that I was just never going to give up,” Kline said. “I asked myself, ‘How far can I go in my recovery?’” As his depression lifts, he said, “I’ve been very instrumental in dealing with it, not shelving it. This is how I will get better.”

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ABOUT THE AUTHOR:



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