



# HHS Seeks to Spur Breakthroughs in Treating Kidney Disease

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**The KidneyX Innovation Accelerator incentivizes entrepreneurs and innovators to revolutionize the way kidney disease is treated.**

A nascent project launched by the Health and Human Services Department aims to spur innovation and help solve an expensive health crisis plaguing millions of Americans: kidney disease.

Developers hope it will one day be used as a model not only for introducing innovators to government, but for addressing other high-cost diseases.

HHS Open Innovation Manager Dr. Sandeep Patel discussed the project—dubbed the **KidneyX Innovation Accelerator**—at ACT-IAC’s Health Innovation Day in Washington April 10, encouraging innovators to get involved.

“For a long time, there’s been a sense of hopelessness [in the field of kidney research] and we are trying to turn that around by making it an area of opportunity and a place where innovators should think about spending their time and their money,” Patel said.

KidneyX is a public-private partnership between HHS and the American Society of Nephrology, and seeks to accelerate innovation in the prevention, diagnosis and treatment of frequently fatal kidney disease. The project is product-driven, with a goal of targeting entrepreneurs and innovators who don’t automatically think about applying to grant solicitations or working with the federal government to address health emergencies. It seeks to eventually ensure that kidney patients have access to ground-breaking therapies and technologies for treatment.

Presently, there is no deadline for the project to wrap up.

“KidneyX is designed to be catalytic, so we only want to last as long as we think there needs to be some catalytic effect here,” Patel told *Nextgov* in an interview following his April 10 remarks. “We are not necessarily planning for it to exist until all products developed are in the market, which could take a long time. It’s just until we get to a phase where we think there’s a healthy amount of activity, investment and people working on the problem.”

The accelerator is initially operating through a series of monetary prizes. Its inaugural endeavor, [KidneyX: Redesign Dialysis](#), launched last year and will run in two (and potentially more) phases, with a total prize purse of more than \$2.6 million.

The first phase, which will award up to 15 prizes of \$75,000 each, asks participants to “design solutions that can replicate normal kidney functions and improve patient quality of life.” Patel said HHS received 165 admissions in phase one and winners will be awarded at the end of April.

The second phase will run from April through January 2020 and award up to 3 prizes of \$500,000 each to participants who develop testable early-stage pre-human trial prototypes of wearable or implantable devices designed to treat kidney disease and failure.

“The goal is to accelerate the development of devices that go into human trials,” Patel said. He also noted that the KidneyX team is scoping out opportunity areas and prizes around diagnostics and prevention for future phases of the accelerator.

Kidney disease and failure may not receive the same attention as other major health crises, but Patel said it’s an “undeniably and incredibly important and solvable problem.”

Kidney disease affects 30 to 40 million people in the United States, and more than 800 million people battle it worldwide. Patel noted about half of those who have advanced kidney disease don’t even realize it.

“It’s really terrifying. I’ve spoken to a lot of patients about it and they will tell you that their diagnosis was sort of a fog,” he said. “They went to the doctor for some other health issue and all of a sudden realize they are put on dialysis without even recognizing what happened.”

Patel also explained that every year at least 100,000 people begin dialysis—the primary treatment for kidney failure that filters toxins from the blood—and yet the therapy hasn’t fundamentally changed since it was invented in 1962.

“Just think about this time frame and think about all the things that were invented from 1962 until now,” Patel said. “Entire industries were created and entire industries were destroyed and yet this was the time frame in which dialysis remained fairly constant.”

Half of those who begin dialysis also die within 5 years, a mortality rate similar to many cancers. The treatment is also invasive and consumes patients' lives.

"If you are on dialysis it is your life. You are in treatment at least three times a week and four to five hours a day and when you're not on dialysis, you are tired and thinking about your next session," Patel said. "You spend your life essentially chained to a machine."

The therapy automatically qualifies patients for Medicare and is expensive, Patel said, costing taxpayers some \$114 billion each.

Due to the disease's' devastating impact on patients' lives, the KidneyX team decided to make the accelerator "patient-centric and patient-driven." People who are on dialysis or suffer from kidney disease are involved in all phases of the project.

"We thought this was very important because patients have a compelling story to tell and really important elements around their experiences can get lost in product development. So we want to make sure all the entrepreneurs, innovators and product developers that we are trying to support and recruit understand patient insights early on," Patel said.

All of the project's submissions, no matter how technical, must involve conversations and insights drawn from patients, and patients are also involved in the review and award process.

"We have had nothing but positive feedback on this," Patel said. "The people I talked to who helped out in the review were really interested in seeing what people were thinking about and enjoyed having their voices heard as a part of the process."

The culture within the federal government also has a reputation of stifling innovation and Patel said the issue was sometimes challenging for he and his team to navigate.

"It can be very difficult to do anything outside of the norm, for sure," he said.

But what Patel said he's found to work best so far is uniting people from a variety of different sectors and building a community between them.

"A lot of it is just about bringing people together and trying to really do something in a manageable way as quickly as possible," he said.