# Diabetes-prevention program supports addition of years to average lifespan

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You can do a lot in four years: go from white to black belt in taekwondo, plant a dwarf apple tree and pick its fruit, see your grandchild off to college and attend her graduation or get your own degree. But the most

severe complications of diabetes—from stroke to neuropathy to amputation—can make activities like these difficult or impossible for some people.

In a new study, West Virginia University School of Public Health researchers found that taking part in a year-long diabetes-prevention program supports the addition of 4.4 quality-adjusted life-years to participants' average lifespan.

"Fatalism can play a major role in community health—like, 'Oh, yeah, my family has diabetes. I'm going to get it eventually,'" said Adam Baus, a research assistant professor in the Department of Social and Behavioral Sciences, who led the study. "But that doesn't have to be the case. Not at all."

The results appear in *Perspectives in Health Information Management*.

Quality-adjusted life-years—or QALYS—don't just take lifespan into account. They also factor in physical, mental, social and functional health. QALYS help to measure disease burden, and show how the quality and quantity of life lived is impacted by taking part in interventions.

Baus and his colleagues analyzed data from West Virginia Health Connection, a new online network of clinical and community-based partners working together to prevent and control chronic diseases—like diabetes—in the state.

West Virginia Health Connection is a collaborative effort between the West Virginia Bureau for Public Health's Division of Health Promotion and Chronic Disease and the WVU School of Public Health's Office of Health Services Research.

The data encompassed 320 individuals who had completed the National Diabetes Prevention Program.

Using the Centers for Disease Control and Prevention's Diabetes Impact Tool, the researchers analyzed the data for demographic information; weight, height and BMI; and return-on-investment indicators, including diabetes incidence, medical costs and QALYS.

They found that participating in the program caused an increase of 0.2 QALYS after one year, with projected increases of 1.1 QALYS after three years and 4.4 QALYS after 10 years.

At the start of programming, 80.3% of participants were obese, 19.4% were overweight and only 0.3% had a normal weight. By the end of programming, participants had lost 13.6 pounds—or 6.3% of their total body weight—on average. Projecting three years out, this represents a 32.4 percent overall risk reduction for developing diabetes.

"It's really important for our community partners to be able to have a good, reliable analytic system that they can use to document the programming that they're providing and to be able to demonstrate the effectiveness of their program," said Baus, who directs the WVU Office of Health Services Research. "That's challenging for a lot of people in the community who might not be accustomed to tracking data. They need a good, secure way of doing that and some backbone support so that they can analyze their data and show their program's impact. It's really important for the longevity of their program."

Baus and his colleagues discovered that the program was associated with a $120 decrease in annual medical costs per participant. After three years of participation, annual savings amount to $341 per person. After 10 years? $989.

By year three, the net cost to run the program falls to $50 per person. Projecting 10 years out, the programming generates enough healthcare savings that it more than offsets the cost of running the program itself.

"There's some frustration historically among providers who know their patients could benefit from extra support through prevention programs like this but do not have an easy mechanism to make the referrals, know that patients are attending classes and know what the outcomes are over time," Baus said.

West Virginia Health Connection addresses this need by essentially putting all diabetes-prevention programming in the state under one roof, connecting primary care physicians and specialists to community-based health leaders providing this needed programming.

"It's a secure registry for health information to be collected and analyzed so that clinicians can document the care that they're providing and get reports on those data," Baus said. "It's really important for our community partners to be able to have a good, reliable analytics system that they can use to document the programming that they're providing and demonstrate the effectiveness of their efforts."

And it's especially important in West Virginia, which has the nation's second-highest rate of diabetes among adults, at 15%. As of 2018, another 11% of adults were diagnosed as pre-diabetic, and still more remain undiagnosed.

"Our state has significant public health burden with prediabetes and diabetes, but we also have amazing, committed partners working to reverse that trend," Baus said. "Working together, we can do this."

**More information:** Adam Baus et al. Informatics-Supported Diabetes Prevention Programming in West Virginia. *Perspectives in Health*

Provided by West Virginia University