

UW-Madison: Innovative Wisconsin telehealth program dramatically boosts diabetic eye screening research findings prompt clinic to change its practice

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MAUSTON, Wis. – Thanks to an unusual telehealth program, a rural Wisconsin health system has seen a 35 percent increase over a three-year period in diabetic eye screenings, a boost that far exceeded expectations.

Patients at Mile Bluff Medical Center in Mauston, Wisconsin, can walk in and have a retinal photograph taken at the clinic in a matter of minutes. The photos are sent to UW Health in Madison, about 75 miles away, where eye specialists review them for signs of early damage that, if untreated, could lead to blindness. Patients who are flagged with problems are referred to their local physicians for follow-up care.

Early diagnosis and treatment decrease the risk of severe vision loss from diabetic eye disease by 90 percent, but fewer than half of the 29.1 million Americans with diabetes receive yearly eye screenings. The problem is especially acute in rural areas; Mile Bluff is the only full-service hospital in a six-county area of central Wisconsin.

Dr. Yao Liu, assistant professor of ophthalmology and visual sciences at the University of Wisconsin School of Medicine and Public Health, is the lead on this project that aims to address barriers and find ways to increase eye screening.

“Teleophthalmology is highly effective for improving diabetic eye screening rates

and preventing blindness, but it is often not available in rural Wisconsin, where residents have less access to care and higher rates of diabetic eye disease than those in urban areas,” said Dr. Liu. “Ultimately, our goal is to reduce vision loss in rural communities across Wisconsin by improving access to diabetic eye screening using teleophthalmology.”

Diabetic eye disease is estimated to affect 130,000 people in Wisconsin and is the leading cause of blindness among working-age U.S. adults, largely due to lack of screening. And unfortunately, the number of diagnosed cases of diabetes among Americans has risen from fewer than one percent in 1958 to more than seven percent today, according to the Centers for Disease Control.

The Wisconsin Partnership Program funded a grant to support Dr. Liu’s research in advancing the use of teleophthalmology for diabetic eye screening in rural Wisconsin. UW researchers partnered with Mile Bluff Medical Center to build a team of clinic providers and staff to test strategies that streamline teleophthalmology referrals and improve diabetic eye- screening rates. They also established a patient advisory group to further examine barriers and challenges to obtaining diabetic eye screenings. As a result, Mile Bluff has changed its clinical practice guidelines for diabetic eye screening and more than 340 patients have used teleophthalmology to receive vision-saving eye care.

Liu’s team is developing a toolkit of clinical strategies to further expand the teleophthalmology program across the state of Wisconsin and has received additional funding from the National Institutes of Health/National Eye Institute to further test and refine it. The success of this program has helped support the establishment of several additional eye-camera sites. Teleophthalmology is now available to diabetic patients who see primary-care providers at the UW Health East and Yahara Clinics. In addition, several other health systems in Wisconsin and nationally are looking to the UW model as a blueprint for building their teleophthalmology programs.