

NEWS

Evidence for remote autism assessments trickles in

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In March 2019, Zachary Warren launched a **clinical trial** of a virtual tool to diagnose autism in toddlers. He had hoped to find out whether it could improve access to autism services for families who live in rural Tennessee and West Virginia, hours away from his Nashville clinic at Vanderbilt University.

A year later, the coronavirus pandemic shut down in-person assessments for everyone and his work took on new significance.

When Warren started his trial, few rigorous data existed on the efficacy of diagnosing autism through a computer screen. Now, more than 3 years later, those data are surfacing, and a positive picture may be emerging — not only for Warren’s tool but for **other strategies** as well.

“There’s a sizeable percentage of young children on the spectrum where we are going to be able to accurately confirm the presence of autism profiles based on telehealth visits,” says **Warren**, director of autism research at Vanderbilt. “There’s no doubt that that is the case.”

But, he and others say, it remains unclear which tools work best and for whom, and some providers remain unconvinced. Meanwhile, the ability to gather more data on telehealth’s efficacy may be vanishing fast.

At the start of the pandemic, the federal Centers for Medicare and Medicaid Services added some psychological evaluations to its list of approved telehealth services, a list that guides payment decisions by many state Medicaid programs and private insurance policies, says **Stephen Gillaspay**

, senior director of health and health care financing at the American Psychological Association, which is advocating for expanded access to telehealth. But that provision, which made remote health care mainstream, is set to expire at the end of 2023.

“Other than those of us who are starting trials for this, it will be easy for telehealth to just get forgotten,” says **Katherine Stavropoulos**, associate professor of special education at the University of California Riverside. “That’s important to try to avoid if we can. It’s not as though the issue of access is gone because COVID is ‘over.’”

Stavropoulos, Warren and others are pushing ahead to integrate virtual measures into the autism assessment toolkit, predicting it will deliver such benefits as shorter waitlists and fewer diagnostic barriers.

“The cat’s out of the bag,” Warren says. “It’s no longer a question of, ‘Will we use it?’ It’s more a question of understanding how best to use it.”

Once the pandemic exceptions expire, Medicare will reimburse virtual visits at a lower rate than in-person ones, and other insurers will likely follow suit, says Gillaspay.

“With such high demand for services, there is no justification to revert to lower reimbursement rates [for remote services] and plenty of indicators suggest the rates need to increase,” Gillaspay wrote in an email to *Spectrum*. “We see access to telehealth and reimbursement for telehealth — at the same rates as in-person services — as health equity issues.”

More data could help bolster that argument, says **Elizabeth Kryszak**, a psychologist at Nationwide Children’s Hospital in Westerville, Ohio.

Warren’s trial, which evaluates a tool he developed called the TELE-ASD-PEDS (TAP), directly compared in-person and remote assessments of the same 73 children. After the two evaluations, 68 children — 61 with autism, 7 without — had the same diagnosis from both; 4 received a diagnosis in person but not virtually; and 1 diagnosed virtually was ruled out in person, for an agreement of 93 percent, according to unpublished results presented in May at the 2022 meeting of the International Society for Autism Research (INSAR).

Similar results turned up in a **February review** of 10 studies of telehealth diagnosis for autism, 8 of which compared some version of remote assessment with in-person evaluations: The accuracy ranged between 80 and 91 percent across 8 studies — many conducted prior to the pandemic.

Additional rigorous, randomized controlled trials are needed to get a better understanding of the nuances of virtual assessments, says Stavropoulos, who led the review and is in the midst of a comparative study like Warren’s.

“We’re now trying to empirically study this in a systematic randomized way, which of course we couldn’t do over the pandemic,” Stavropoulos says. “We have realized how critical it is to actually get a solid evidence base.”

That base might help to convince **providers, who are “polarized,”** according to a 2020 survey. Almost two-thirds reported being “quite a bit confident” with remote assessments, but one respondent said the assessments “have no validity” and others called the practice “non-sensical” or “unethical.” The skeptics reported pitfalls such as having difficulty gaging eye contact and body language, trouble building rapport and an inability to observe sensory or communication difficulties.

Regardless, it’s likely that virtual assessments will ultimately remain part of a multi-pronged approach to diagnosis. In an evaluation of the Autism Detection in Early Child-Virtual (ADEC-V) screening tool, for example, Kryszak and her colleagues found that **ADEC-V scores** showed some misalignment with the commonly used Autism Diagnostic Interview-Revised, suggesting that the measure may work best in combination with other tools.

“It’s not like assessment is just going to go completely telehealth for all kids,” Kryszak says. But “I do think enough groups have made enough progress that this is not going away.”

The next major question researchers face is for whom remote diagnosis works, and who would benefit from an in-person evaluation instead.

They have some hints already: Children with co-occurring behavioral problems are more difficult to assess, Stavropoulos says, as are older children and adults, who often have more subtle presentations. Nonverbal children may also prove challenging to assess remotely, Kryszak says.

And verifying suspected autism virtually may be much simpler than ruling it out, Warren adds. Many of his study participants had been referred for an autism evaluation, a group that has “such a high bias for confirming autism,” Warren says. His team is beginning to recruit participants from a broader community sample and plans to start a **trial of a preschool version** of the TAP in September.

“We really want to see how this operates across different groups that have different base-rate presentations of autism,” Warren says.

Yet another, and particularly thorny, question to address is whether telehealth increases accessibility to diagnosis and services, as predicted. Only 2 of the 10 studies in Stavropoulos’ review reported data on their participants’ socioeconomic status, and none described whether participants came from rural, urban or suburban areas.

Just one study to date has directly compared access to diagnosis since the shift to telehealth among different socioeconomic groups. Across more than 14,000 visits, access improved for rural

families in the United States after March 2020 but worsened for Hispanic and non-English-speaking families, according to unpublished data presented in May at INSAR. Access also improved for families in neighborhoods with the lowest Childhood Opportunity Index scores — a measure of resources for children in U.S. cities — though those children are more likely than those in other neighborhoods to receive a diagnosis other than autism, the study found.

Anecdotally at least, Spanish-speaking families in particular seem to prefer in-person visits, says the study's lead investigator **Michele Villalobos**, associate professor of pediatrics at the University of Utah in Salt Lake City. But the pandemic complicates the findings: Many marginalized communities were particularly hard hit by the crisis, a factor that may have influenced their ability to seek healthcare and skewed data on their perceptions of telehealth.

"How much of it will be accounted for by the pandemic is still something we need to understand before we say it's something related to telehealth specifically," Villalobos says.

More evidence could help ensure that any person or family would be able to access autism services, regardless of socioeconomic status, Stavropoulos says.

"I feel strongly about any research we can do to make stuff closer to that ideal," she says. "And I think telehealth can do that."

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