COMMENTARY

Driving Equity and Innovation in the T1D Exchange Quality Improvement Collaborative: Advancing Outcomes Through Collaborative Change

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The T1D Exchange continues to be a leader in driving innovation and bridging translation gaps in evidence-based care for people with type 1 diabetes across the United States (1,2). With 35 pediatric and 20 adult centers across 21 states (Figure 1) and Washington D.C., the T1D Exchange has been able to expand its initiatives to create meaningful benchmarks in care and provide data that prompts national conversations to shape policy (Figure 2). In our third T1D Exchange Quality Improvement Collaborative (T1DX-QI) article collection, published in this issue of *Clinical Diabetes*, we highlight the results of studies that focus on important and emerging trends in type 1 diabetes care.

Inequity in diabetes technology use continues to require investigation to identify targets and address disparities and barriers for intervention (3,4). Gandhi et al. (5) and Prahalad et al. (6) examine insulin pump and continuous glucose monitoring (CGM) use across pediatric centers in the T1D Exchange, accounting for more than 20,000 youth with type 1 diabetes. Gandhi et al. (5) note that insulin pump use has increased from 2017 to 2021 in pediatric centers and that there are lower rates of diabetic ketoacidosis among youth with type 1 diabetes who use CGM, regardless of whether they are on insulin pump or multiple daily injection insulin therapy. Nevertheless, racial/ethnic and insurance disparities in pump use have persisted from 2017 to 2021. Prahalad et al. (6) note that, among pediatric sites in 2021, CGM use varied from 21 to 90%, and pump use varied from 12 to 79%, with no change in 2022. In addition, they note the existence of regional variations, with the highest rates of technology use in centers located in the U.S. Midwest and West regions, and the lowest rates in centers in the South and Southwest.

Taken together, these studies suggest that, despite encouraging evidence that CGM and insulin pump use has increased in the past few years, geographical and racial/ethnic disparities exist that might be influenced by state-level insurance policies. These macro-level barriers to the use of diabetes technology to accelerate improvement in population health urgently call for new discussion to ensure alignment of insurance coverage policies and access to technology with current standards of care for the treatment of type 1 diabetes.

Odugbesan et al. (7) describe an exciting first step in addressing inequity in diabetes technology in their report of results from the T1D Exchange Diabetes Technology Equity Study. Through multilevel clinic transformation initiatives targeted at reducing inequity in diabetes technology use, participating pediatric and adult centers were able to increase the use of diabetes technology by 15% among people of Hispanic ethnicity, 12% among non-Hispanic Blacks, and 7% among non-Hispanic Whites. Moreover, the disparity in diabetes technology use was reduced by 5% between people of non-Hispanic White and those of non-Hispanic Black race/ethnicity and by 6% between non-Hispanic Whites and Hispanics.

Our special article collection also includes articles on studies of real-world implementation of evidence-based care. Lee et al. (8) highlights a substantial decrease in telemedicine use for type 1 diabetes care from 2020 to 2021, describing institutional barriers that predicted center-level capacity for successful telemedicine implementation. Components of capacity included having a

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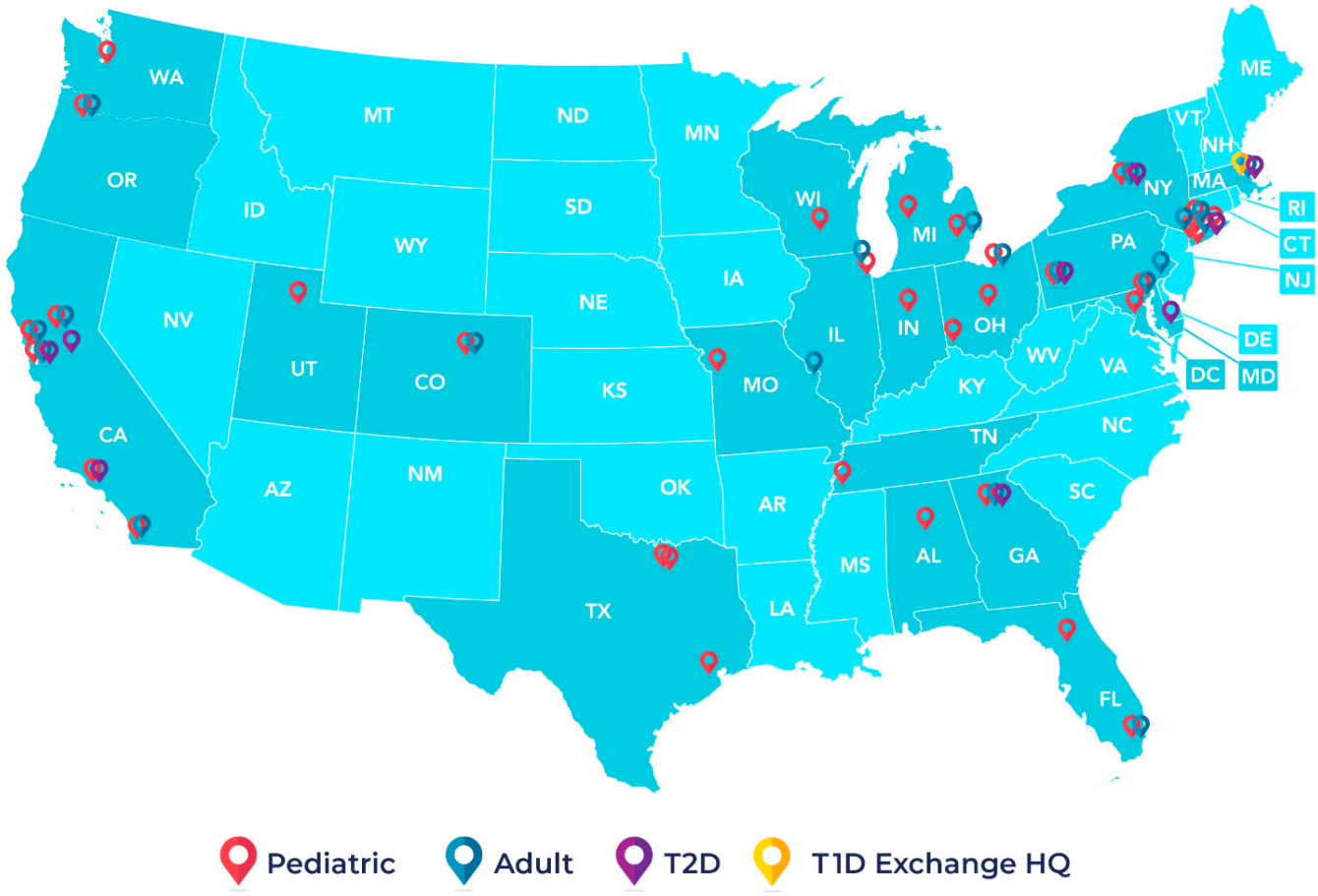

FIGURE 1 Map of the T1DX-QI participating centers.

telemedicine clinic workflow, assigning staff for telemedicine, having support for data uploading, and having center-specific benchmarks for telemedicine care. Centers with higher rates of telemedicine had a higher average number of center-level capacity components, suggesting that key institutional barriers remain and hamper the sustainability of telemedicine in many high-level type 1 diabetes centers. Odugbesan et al. (9) report on an initiative to increase screening for social determinants of health (SDOH) in five centers. They note improvement in SDOH screening rates from 1 to 70% using interventions that included additional staff training, development of a social risk index, implementation of screening in the electronic health record, and partnerships with community organizations to facilitate referrals to social need resources.

Finally, with the recent commercial approval of teplizumab, Ospelt et al. (10) report on a mixed-methods study of 50 type 1 diabetes health care providers to examine their awareness of, readiness for, and attitudes toward autoantibody screening to understand the barriers to and facilitators of this type of screening as more type 1 diabetes prevention options become available. These authors found that, although participants recognized the benefits of screening with regard to facilitating early diabetes treatment, major barriers to screening implementation included provider- and clinic-level factors, including concerns about staffing, time requirements, and needed resources, as well as patient-level barriers of screening anxiety and cost.

As new options emerge that improve both glycemic outcomes and quality of life, type 1 diabetes care has never been more exciting. Incorporating diabetes technology, telemedicine, and preventive medications within the context of an equity perspective has the potential to drive improvements in population-level health for people with type 1 diabetes. By optimizing the implementation of such advancements in real-world settings through the use of quality improvement methods, the T1DX-QI initiatives can serve as important guides for other clinicians who care for people with type 1

FIGURE 2 Timeline of T1DX-QI activities. ADA, American Diabetes Association; EMR, electronic medical record; T1D, type 1 diabetes; T2D, type 2 diabetes.

diabetes and thereby drive improved outcomes on a broad scale (11).

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DUALITY OF INTEREST

S.A. works as a health care disparities advisor for Beta Bionics and Medtronic, Inc. O.E. is an advisory board member for the Medtronic Diabetes Health Equity Council. No other potential conflicts of interest relevant to this article were reported.

AUTHOR CONTRIBUTIONS

S.A. wrote the manuscript. S.M., N.R., and O.E. reviewed/edited the manuscript. S.A. is the guarantor of this work.

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