

Innovative Solutions to Care for Individuals With Diabetes in Underserved Populations

Athena Philis-Tsimikas, Guest Editor

The incidence of diabetes continues to increase in the United States. Management of diabetes remains a significant challenge across the nation, particularly in underserved populations with low socioeconomic status (SES) from diverse racial and ethnic backgrounds that are disproportionately affected by this chronic disease. A large, multistate diabetes registry created from the electronic health records of three networks of safety net clinics that provide care to underserved populations recently demonstrated a 14.4% prevalence of diabetes, which is higher in this low-SES population than previously reported (1,2). Men had a higher prevalence than women (16.5 vs. 13.2%), and diabetes prevalence increased across age categories. White patients had the lowest prevalence (11.4%), and Hawaiian/Pacific Islanders had the highest (21.9%), with prevalence ranging from 15.2 to 16.5% for other races/ethnicities. Furthermore, comorbid conditions such as cardiovascular, neurological, renal, and retinal diseases occurred at higher rates in low-SES diverse communities, possibly due to inadequate medical and self-care, as well as inaccurate culture-bound beliefs.

By 2060, the number of U.S. adults with diagnosed diabetes is projected to nearly triple, and the prevalence is expected to double (3). Diabetes imposes large health and economic burdens on people with the disease, their families, the national health care system, and society as a whole, necessitating innovative solutions for

both primary and secondary preventive care. During the past 10 years, real-world models have been offered and investigated across a variety of settings, including community-based health systems, federally qualified health centers (FQHCs), Veterans Health Administration health centers, private entities, and forward-looking health insurance plans to better manage and prevent diabetes in these communities. Some of these approaches will be presented in this *Diabetes Spectrum* From Research to Practice section.

My own experience in providing diabetes programs to underserved communities started in 1997, when San Diego County identified diabetes as one of the primary unmet health needs in low-income populations. A collaboration between the county, local FQHCs, San Diego State University, and Scripps Whittier Diabetes Institute resulted in the creation of Project Dulce, a countywide program that initially used nurse care managers and peer educators (a relatively unknown model at that time) to deliver a highly effective, cost-effective diabetes support mechanism embedded in the primary care setting where low-income community members most commonly received care (4). The clinical, financial, and economic value of this model has been demonstrated via formal randomized control trials, as well as observational quasi-experimental study designs and analyses (5,6). This core program has formed the backbone of a chronic care

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model for underserved communities that has allowed further development of unique interventions that not only help close the gap in improving care but also accomplish this while overcoming the barriers faced by individuals in these communities (e.g., barriers related to transportation, child care, language, culture, and costs). More recently, the Project Dulce model has expanded to include rural populations, digital interventions, transitions from hospital to home, and prevention programs.

In this research section, author groups with extensive experience working in under-represented, low-SES, and traditionally challenging environments describe their models and outcomes for novel approaches to managing diabetes care and prevention. Fortmann et al. (p. 295) describe approaches using static and adaptive texting methods, as well as coaching models that support positive behavior changes in Hispanic communities. Kaufman (p. 301) provides commentary on the successful use of digital interventions across broad communities. Meneghini et al. (p. 303) describe population health management models that were implemented to drive system processes for improvement. AuYoung et al. (p. 312) present their methods of using Web-based interventions for engaging veterans to participate in the National Diabetes Prevention Program as part of efforts across the state of Michigan. Women in underserved communities have a higher prevalence of gestational diabetes and risk of complicated pregnancies than women in moderate- and high-SES populations. Daneshmand et al. (p. 317) describe programs and current recommendations to quickly

intervene and control blood glucose to provide safe deliveries for mothers and infants. Finally, the use of continuous glucose monitors is revolutionizing the way we care for diabetes, and pioneering approaches are being used by United Health Group to offer the technology more broadly and evaluate outcomes. Using their large database capabilities, Lensing et al. (p. 323) describe the interventions used to date, along with the outcomes.

The examples in this special section provide unique insights into opportunities to significantly improve our approaches to caring for diabetes, not only in underserved communities, but even more broadly for the ever-growing diverse populations with and at risk for diabetes across the United States. The methods described by our authors have pushed the boundaries of innovation, possibly as a result of constraints identified in their communities, such as preexisting lower education levels, language barriers, payment issues, and other social and cultural hurdles that have ultimately driven the need for simplicity, individualization, and cost containment in program delivery while ensuring broad access and dissemination. These findings may be valuable in demonstrating better global ways to provide diabetes management interventions and are aligned with new payment models and guidelines that support individualized care (7,8). It is incumbent on those of us conducting the research in this area to communicate our results, provide training and replication opportunities, and offer support for the implementation of these models so that ongoing progress can be made in our highest-risk patient groups.

Duality of Interest

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