Diabetes Management in the Face of Healthcare Disparities

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Objectives

- Understand the impact of social determinants of health as well as racial and ethnic disparities on the management of diabetes
- Identify areas for opportunity to improve inequalities in diabetes care

Definitions

Term	Definition
Health disparities	A particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage. Health disparities adversely affect groups of people who have systematically experienced greater obstacles to health based on their racial or ethnic group; religion; socioeconomic status; sex; age; mental health; cognitive, sensory, or physical disability; sexual orientation or gender identity; geographic location; or other characteristics historically linked to discrimination or exclusion.
Health equity	Equity is the absence of avoidable, unfair, or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other means of stratification. “Health equity” or “equity in health” implies that ideally everyone should have a fair opportunity to attain their full health potential and that no one should be disadvantaged from achieving this potential.
	Health equity is attainment of the highest level of health for all people. Achieving health equity requires valuing everyone equally with focused and ongoing societal efforts to address avoidable inequalities, historical and contemporary injustices, and the elimination of health and health care disparities.
Social determinants of health (SDOH)	The social determinants of health are the conditions in which people are born, grow, live, work, and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels. The social determinants of health are mostly responsible for health inequities—the unfair and avoidable differences in health status seen within and between countries.

Diabetes Care 2021;44(1):258–279

Background

- For both men and women, prevalence of diagnosed diabetes was highest among American Indian and Alaska Native adults (13.6%), followed by non-Hispanic Black adults (12.1%), adults of Hispanic origin (11.7%), non-Hispanic Asian adults (9.1%) and non-Hispanic White adults (6.9%).

- Prevalence varied significantly by education level, which is an indicator of socioeconomic status. Specifically, 13.1% of adults with less than a high school education had diagnosed diabetes versus 9.1% of those with a high school education and 6.9% of those with more than a high school education.

- In the US, between 2015-2018 only 22% of adults with T2DM achieved an A1c <7%, BP <130/80 mmHg, and lipid control

- A U.S. population–based study based on the National Health and Nutrition Examination Survey (NHANES) showed that younger people with diabetes, individuals who are Mexican American or non-Hispanic Black, those with lower level of educational attainment, and those who are underinsured are most likely to be undertreated, particularly for glycemic control

- People living with diabetes face financial hardship, which is correlated with higher A1c, diabetes distress, and depressive symptoms

CDC: https://www.cdc.gov/diabetes/php/data-research/ Access 30 May 2024

N Engl J Med 2021;384:2219–2228 *Diabetes Care* 2022;45:2535–2543

Diabetes Care 2024;47(Supplement_1):S11–S19

FIGURE 2 The Present-Day Impact of Historical Discrimination and Racism on Obesity and Diabetes

HISTORICAL DISCRIMINATION AND RACISM DURING SLAVERY AND POST-CIVIL WAR

Medical and Scientific Contributors
- Eugenics theory defining certain races and ethnicities as biologically inferior
- Closure of medical schools training Black physicians in 1910s
- Experimentation on vulnerable groups without their consent

Social Conditions and Policies
- Redlining and predatory lending leading to racial residential segregation and housing insecurity
- Inadequate investment to maintain public works and school systems in minority neighborhoods
- Discrimination in access to high-quality jobs with adequate health insurance

↓ Trust in medical establishment

Language and communication barriers

Health care provider bias toward minority patients

Structural and institutional racism

Health Care Context
Poor access to care, ↓ quality of care, ↓ participatory decision-making in patient-provider relationships, ↓ health literacy

Physical Context
↓ neighborhood stability, cleanliness, sidewalks, open space, parks
↓ access to healthy food
↓ affordable housing

Stress, Obesity, Insulin Resistance, Blood Glucose

DISPARATE HEALTH OUTCOMES
Diabetes, Obesity, Heart Disease

J Am Coll Cardiol. 2021 Dec, 78 (24) 2471–2482.

Chronic Care Model (CCM)

1. Delivery System Design
2. Self-management support
3. Decision support
4. Clinical Information Systems
5. Community Resources
6. Health Systems

Boston Medical Center – Health Equity Accelerator

Identify Disparities

- Identify racial and ethnic disparities in patients with diabetes seen in General Internal Medicine

Investigate driving factors

- Use surveys and qualitative interviews to investigate driving factors that contribute to disparities

Harness findings

- Harness findings to develop actionable strategies to improve care delivery and reduce identified barriers

BMC – Health Equity in Diabetes

- Black BMC primary care patients are **2.3x more likely to have prediabetes** than white patients
- Black and Hispanic/Latinx BMC primary care patients are **1.4x more likely to have uncontrolled diabetes** than white patients
- Hispanic/Latinx BMC primary care patients are **1.5x more likely to report "diabetes distress"** than white patients

- To address these inequities, two goals were developed:
  - ❑ Improve management of prediabetes to reduce / slow progression to diabetes
  - ❑ Reduce racial inequities in diabetes management across measures

Areas of Focus

1. Guideline standardization and provider education around prediabetes and diabetes
2. Community and external partnerships (i.e., in person and digital resources outside of the clinical setting)
3. Coordination of services at BMC (i.e., coordination of services and resources within the clinical setting)
4. Community based team to provide intensive supports for a limited amount of time to newly diagnosed patients
5. Integrated Behavioral Health intervention (primary-care based)
6. Patient registry, remote monitoring tools, proactive outreach and case management (IHI / BCBSMA grant)
7. Bariatric surgery (as a medical treatment for diabetes itself) and weight management therapeutics (e.g., medications, surgery)
8. Access to Diabetes Technologies (CGM)

Certain medications are underutilized across races

Literature: importance of medication appropriateness

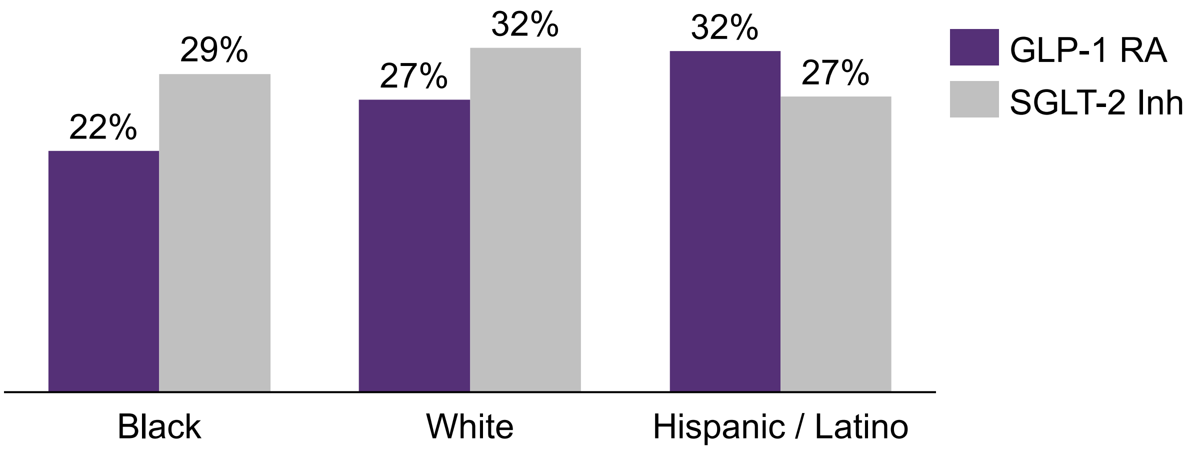
- **Early use of GLP-1RA and SGLT-2i** for T2DM treatment is recommended by the ADA and AACE due to **benefits in glycemic control, reduction in adverse cardiovascular outcomes, prevention of diabetic kidney disease, and weight loss benefits**[1]

Literature: racial inequities in medication appropriateness from literature

- Among a study of ~1M patients in the VA system, accounting for patient- and system-level factors, all racial groups had statistically significantly lower odds of SGLT2i and GLP-1 RA prescription compared with white patients, **with Black patients having the lowest odds of prescription compared with white patients**[2]
- Using NHANES data, **rates of SGLT-2i use were significantly lower in Black and Hispanic adults** than white adults; **rates of GLP-1RA use were significantly lower for Hispanic adults** compared to Black and white adults[3]

BMC primary care patient data, by race, 2020 – present

% of eligible patients[4] to every receive GLP-1 RA or SGLT-2 Inh,



- We see **underutilization of these drugs** across races— only ~1/3 of eligible patients are receiving these drugs. We are looking into provider education around these drugs and also how insurance types affect prescribing of these drugs
- However, for both GLP-1 RA and SGLT-2 Inh, **median days to prescription is less than 3 weeks across races**, indicating that once a provider determines a patient should receive one of these drugs, there are not delays in prescribing

1. (Eberly LA, Yang L, Essien UR, et al, 2021)
2. (Lamprea-Montealegre, J et al, 2022)
3. (Limonte C, Hall YN, Trikudanatha S, et al., 2022)

4. Eligible patients are defined by specific clinical inclusion and exclusion criteria defined in the Equity in Diabetes Tableau dashboard

Interventions - CCM

CCM Core Element	BMC Intervention
Delivery System Design	Team based interventions: referral to PharmD for medication titrations, increase RD referrals, NP visits to support MD access
Self-management support	Increase referral to pre-existing DSME groups, increase referral to Teaching Kitchen cooking classes
Decision Support	Creation of EPIC order set “Diabetes Medication Decision Support” and “Lifestyle Resources”
Clinical Information Systems	Development of patient registry for A1c >9%
Community Resources	Lifestyle Resources, Project Power, DPP, Gym Referrals etc
Health Systems	Focus on QI

Refer Your Patients to Lifestyle Resources!

Pharmacist: Help your patients manage their medications and start the conversation about making lifestyle changes

Dietitian: Support your patients in making lifestyle changes through one-on-one medical nutrition therapy

Diabetes Self Management Education: Educate your patient about their diabetes through facilitated group support

Food Pantry: Provide patients and their families with nutritious food from the on-site BMC food pantry

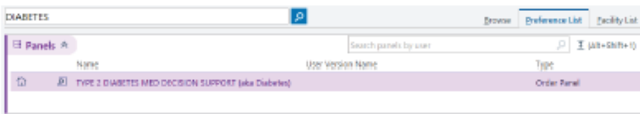
Project Bread: Offer patients money for groceries and kitchen equipment

Diabetes Resource Center: Empower patients with on-line diabetes education handouts, videos, and more!

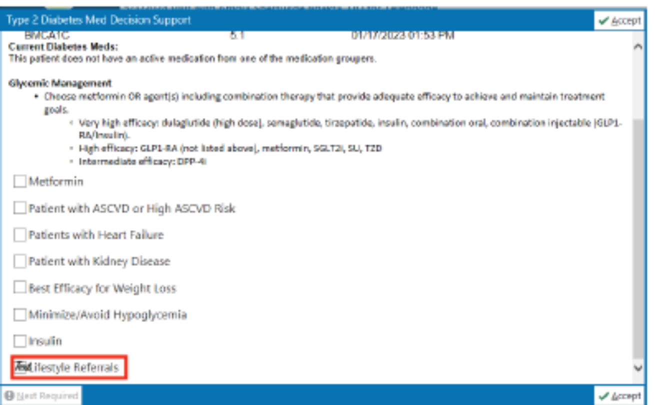
Refer Your Patients to Lifestyle Resources!

1. **Log into EPIC and search for "diabetes"**

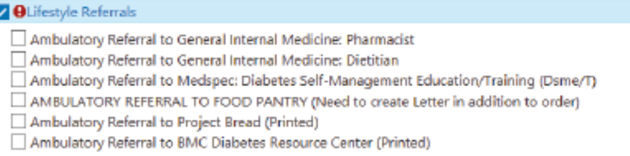
2. **Under panels, choose "Type 2 Diabetes MED Decision Support"**



3. **Select "Lifestyle Referrals" and then press "Accept"**



4. **Select the lifestyle resource(s) you would like to refer your patient to!**



Boston University Chobanian & Avedisian School of Medicine

Assessing and Addressing SDOH

Appendix 1: Social Determinants of Health Screening Tool

Place Patient Sticker Here

Thrive Screening

Please fill this form out and bring it to the exam room. You don't have to answer these questions but your answers will help us take better care of you. Thank you!

		Please circle your answers:
	Do you currently live in a shelter or have no steady place to sleep at night?	Yes / No
	Do you think you are at risk of becoming homeless?	Yes / No
	Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.	Often true / Sometimes true / Never true
	Within the past 12 months, you worried whether your food would run out before you got money to buy more.	Often true / Sometimes true / Never true
	Is this an emergency, do you need food for tonight?	Yes / No
	Do you have trouble paying for medicines?	Yes / No
	Do you have trouble getting transportation to medical appointments?	Yes / No
	Do you have trouble paying your heating or electricity bill?	Yes / No
	Do you have trouble taking care of a child, family member or friend?	Yes / No
	Are you currently unemployed and looking for a job?	Yes / No
	Are you interested in more education?	Yes / No

Would you like help connecting to resources? Please circle below.

Housing / Shelter	Food	Paying for Medicines	Transportation to medical appointments	Utilities	Child care / Daycare	Care for Elder or disabled	Job Search / Training	Education

I do not want to answer these questions

© 2017 Boston Medical Center

Adopted from WE CARE Screening model

Food Insecurities

- Where do you most often buy your groceries/food?
- In the past 12 months, were you worried your food would run out before you got money to buy more food?
- In the past 12 months, did you skip meals because you did not have enough food?

Boston Medical Center – Food Pantry

1,000,000 Lbs.

Food Distributed Annually

1st

Hospital-Based Therapeutic Food Pantry in the Country

1,000,000+

People Served since 2001

Implications of Food Insecurity in Diabetes

Hyperglycemia

Inexpensive, carbohydrate rich processed foods and drinks

Inadequate intake, omission of meals

Hypoglycemia

Medication Access

- How do you get your medication refills?
- In the last 12 months, have you has trouble paying for any of your prescription medications?
- In the last 12 months, have you not started a medication due to the cost?
- Have you omitted doses of medications to make your supply last longer?

Medication Access Solutions

- Manufacturer Coupons
- Prescription Assistance Programs
- Walmart, Price Chopper, etc $4/$10 programs
- GoodRx

Transportation

- How do you typically get to your appointments?
- Have you missed appointments in the last 12 months due to transportation issues?
- Have you been unable to obtain medication refills from the pharmacy due to transportation issues?
- If given the option, would you be able to do a telehealth visit?

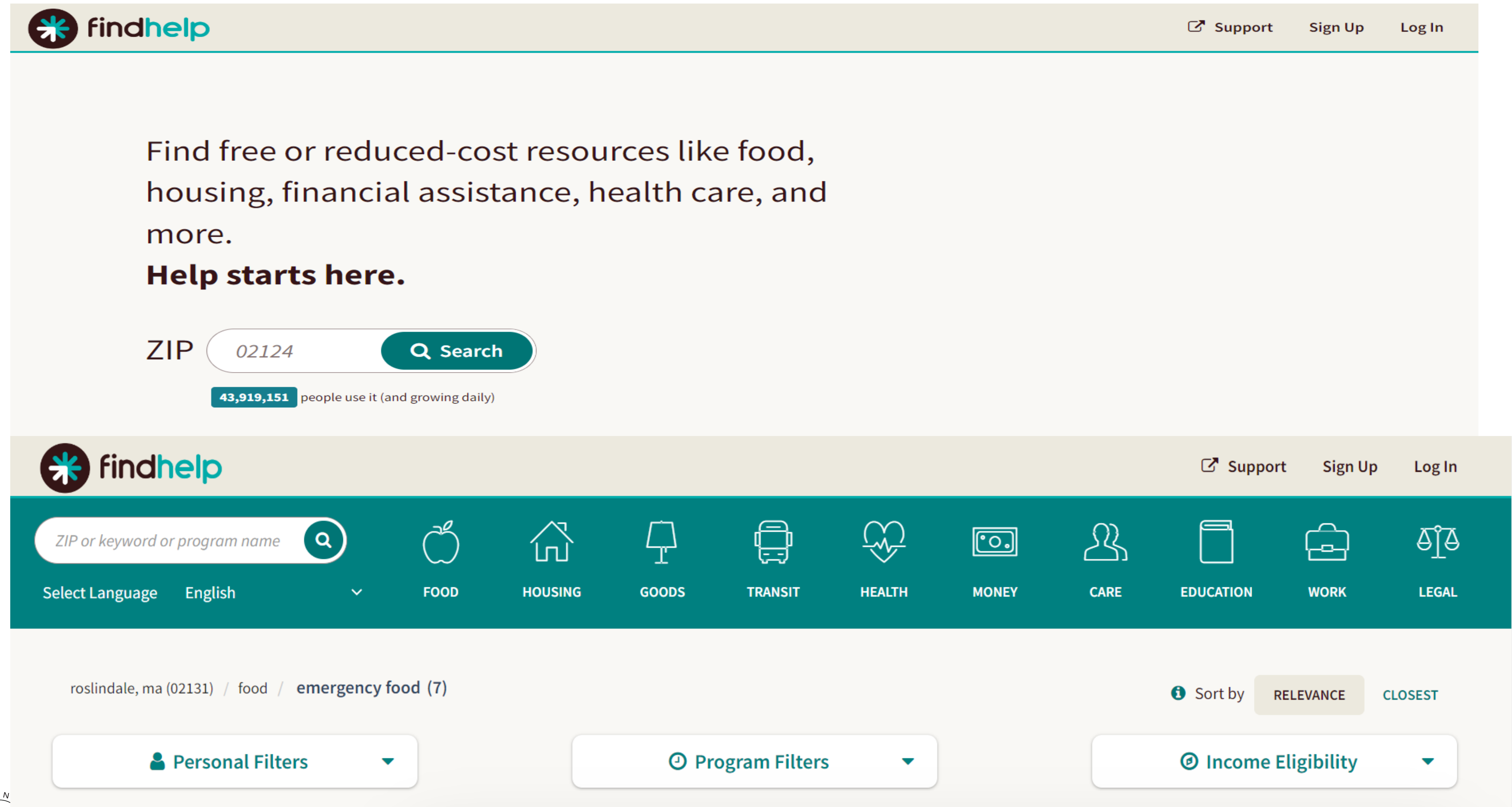
Transportation Solutions

- Offer telehealth in between face to face visits
- Insurance covered transportation to medical appointments
- Reduced bus fares/public transportation
- Uber Health
- Switch pharmacy to mail order

Housing Considerations

- Safe place to store medications
- Safe neighborhood to engage in outdoor physical activity
- Access to a refrigerator for medication storage or perishable food

Connecting Patients to Resources



BOSTON MEDICAL CENTER

https://www.findhelp.org/

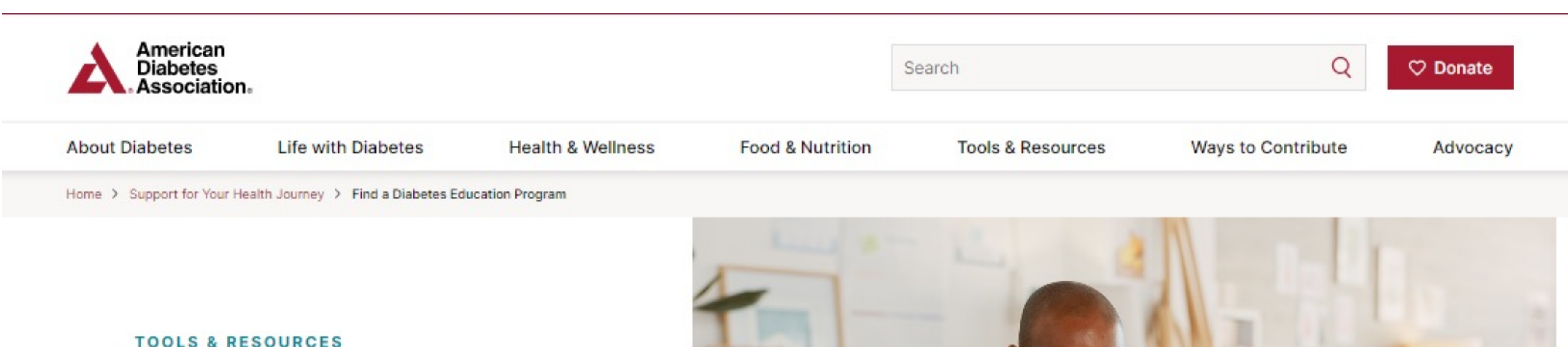
Improving Access to Diabetes Prevention

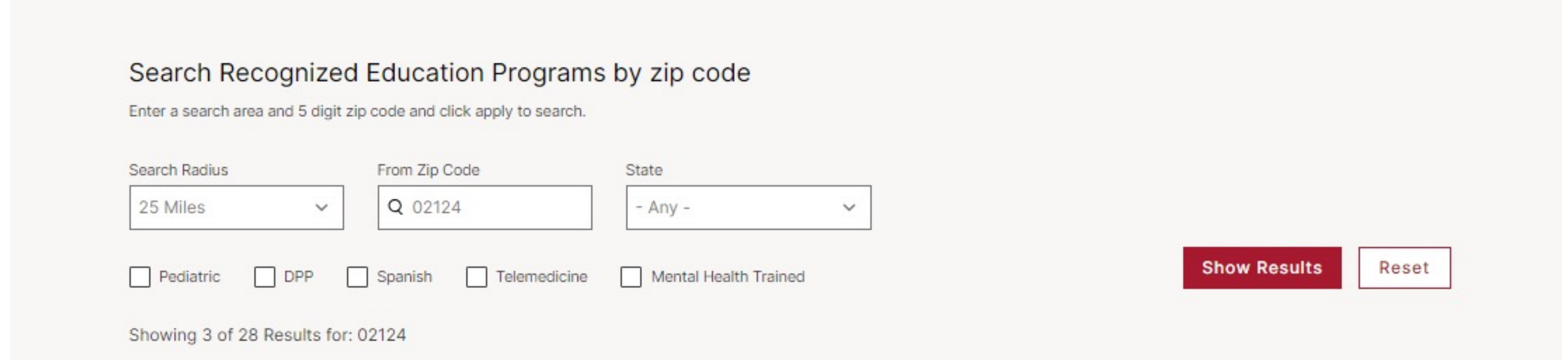
KEY POINTS

- The National Diabetes Prevention Program (National DPP) delivers an affordable, evidence-based lifestyle change program.
- The National DPP helps people with prediabetes prevent or delay type 2 diabetes.
- CDC is working to enroll people from groups with higher rates of type 2 diabetes.

https://www.cdc.gov/diabetes/health-equity/improving-access-type-2-diabetes-prevention-program.html Accessed 30 May 2024

Improving Access to Diabetes Education





https://diabetes.org/tools-resources/diabetes-education-programs

Community Health Workers

- Community health workers (CHWs) are frontline public health workers who are trusted members of the communities they serve
- CHWs, when properly integrated with clinical staff, can help people in under-resourced communities prevent and manage diabetes
- CHWs usually share race or ethnicity, language, geographic area, socioeconomic status, and even life experiences with the community members they serve.
- In a randomized controlled trial of an intervention called TIME (Telehealth Supported, Integrated Community Health Workers, Medication-Access), more than half of participants reported at least one barrier to care, mostly involving medications, appointment access, and eligibility to attend a clinic.
    - CHWs identified nearly 88% of these barriers, making it more likely that health care professionals can address these problems.

(TIME) Program for Diabetes Improves HbA1c: a Randomized Clinical Trial. J Gen Intern Med. 2021 Feb;36(2):455-463

2019 ADCES Practice Paper: CHWs as Diabetes Paraprofessonials

J Gen Intern Med 2015;30:7: 1004-1012

Summary

- Disparities in diabetes exist and causes are multifactorial spanning race, ethnicity, educational level, environmental, and clinician implicit biases
- The chronic care model is a framework that can be used to optimize diabetes care programs at a broader, system level
- Pharmacists can play a key role in screening for SDOH and connecting patient to resources, particularly as it relates to medication access

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