



# 1. Promoting Health and Reducing Disparities in Populations

American Diabetes Association

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## Recommendations

- Treatment decisions should be timely, rely on evidence-based guidelines, and be made collaboratively with patients based on individual preferences, prognoses, and comorbidities. **B**
- Providers should consider the burden of treatment and self-efficacy of patients when recommending treatments. **E**
- Treatment plans should align with the Chronic Care Model, emphasizing productive interactions between a prepared proactive practice team and an informed activated patient. **A**
- When feasible, care systems should support team-based care, community involvement, patient registries, and decision support tools to meet patient needs. **B**

## DIABETES AND POPULATION HEALTH

Clinical practice guidelines are key to improving population health; however, for optimal outcomes, diabetes care must be individualized for each patient. Thus, efforts to improve population health will require a combination of system-level and patient-level approaches. With such an integrated approach in mind, the American Diabetes Association (ADA) highlights the importance of *patient-centered care*, defined as care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions (1). Practice recommendations, whether based on evidence or expert opinion, are intended to guide an overall approach to care. The science and art of medicine come together when the clinician is faced with making treatment recommendations for a patient who may not meet the eligibility criteria used in the studies on which guidelines are based. Recognizing that one size does not fit all, the standards presented here provide guidance for when and how to adapt recommendations for an individual.

## Care Delivery Systems

Over the last 10 years, there has been steady improvement in the proportion of patients with diabetes who are treated with statins and who achieve recommended hemoglobin A1C (A1C), blood pressure, and LDL cholesterol levels (2). The mean A1C nationally among people with diabetes has declined from 7.6% (60 mmol/mol) in 1999–2002 to 7.2% (55 mmol/mol) in 2007–2010 based on the National Health and Nutrition Examination Survey (NHANES), with younger adults less likely to meet treatment targets than older adults (2). This has been accompanied by improvements in cardiovascular outcomes and has led to substantial reductions in end-stage microvascular complications.

Nevertheless, 33–49% of patients still do not meet targets for glycemic, blood pressure, or cholesterol control, and only 14% meet targets for all three measures while also avoiding smoking (2). Evidence suggests that progress in cardiovascular risk factor control (particularly tobacco use) may be slowing (2,3). Certain segments of the population, such as young adults and patients with complex comorbidities, financial or other social hardships, and/or limited English proficiency, face particular challenges to goal-based care (4–6). Even after adjusting for these patient factors, the persistent variability in the quality of diabetes care across providers and practice settings indicates that substantial system-level improvements are still needed.

## Chronic Care Model

Numerous interventions to improve adherence to the recommended standards have been implemented. However, a major barrier to optimal care is a delivery

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system that is often fragmented, lacks clinical information capabilities, duplicates services, and is poorly designed for the coordinated delivery of chronic care. The Chronic Care Model (CCM) takes these factors into consideration, and is an effective framework for improving the quality of diabetes care (7).

**Six Core Elements.** The CCM includes six core elements to optimize the care of patients with chronic disease:

1. Delivery system design (moving from a *reactive* to a *proactive* care delivery system where planned visits are coordinated through a team-based approach)
2. Self-management support
3. Decision support (basing care on evidence-based, effective care guidelines)
4. Clinical information systems (using registries that can provide patient-specific and population-based support to the care team)
5. Community resources and policies (identifying or developing resources to support healthy lifestyles)
6. Health systems (to create a quality-oriented culture)

Redefining the roles of the health care delivery team and empowering patient self-management are fundamental to the successful implementation of the CCM (8). Collaborative, multidisciplinary teams are best suited to provide care for people with chronic conditions such as diabetes and to facilitate patients' self-management (9–11).

#### **Strategies for System-Level Improvement**

Optimal diabetes management requires an organized, systematic approach and the involvement of a coordinated team of dedicated health care professionals working in an environment where patient-centered high-quality care is a priority (6). The National Diabetes Education Program (NDEP) maintains an online resource ([www.betterdiabetescare.nih.gov](http://www.betterdiabetescare.nih.gov)) to help health care professionals to design and implement more effective health care delivery systems for those with diabetes. Three specific objectives, with references to literature outlining practical strategies to achieve each, are as follows.

**Objective 1: Optimize Provider and Team Behavior.** The care team, which includes the patient, should prioritize timely and appropriate intensification of lifestyle

and/or pharmacological therapy for patients who have not achieved the recommended metabolic targets (12–14). To inform this process, providers should routinely assess medication adherence. At a system level, “adequate” adherence is defined as 80% (calculated as the number of pills taken by the patient in a given time period divided by the number of pills prescribed by the physician in that same time period) (15). If adherence is 80% or above, then treatment intensification should be considered (e.g., up-titration). Additional strategies shown to improve care team behavior and thereby catalyze reductions in A1C, blood pressure, and/or LDL cholesterol include explicit and collaborative goal setting with patients (16,17); identifying and addressing language, numeracy, or cultural barriers to care (18–20); integrating evidence-based guidelines and clinical information tools into the process of care (21–23); soliciting performance feedback, setting reminders, and providing structured care (e.g., guidelines, formal case management, and patient education resources) (6); and incorporating care management teams including nurses, dietitians, pharmacists, and other providers (24,25).

#### **Objective 2: Support Patient Self-management**

Successful diabetes care requires a systematic approach to supporting patients' behavior change efforts, including the following:

1. Healthy lifestyle choices (healthy eating, physical activity, tobacco cessation, weight management, and effective strategies for coping with stress)
2. Disease self-management (taking and managing medications and, when clinically appropriate, self-monitoring of glucose and blood pressure)
3. Prevention of diabetes complications (self-monitoring of foot health; active participation in screening for eye, foot, and renal complications; and immunizations)
4. Identification of self-management problems and development of strategies to solve those problems, including self-selected behavioral goal setting

High-quality diabetes self-management education (DSME) has been shown to improve patient self-management,

satisfaction, and glucose outcomes. National DSME standards call for an integrated approach that includes clinical content and skills, behavioral strategies (goal setting, problem solving), and engagement with psychosocial concerns (26).

In devising approaches to support disease self-management, it is notable that in 23% of cases, uncontrolled A1C, blood pressure, or lipids were associated with poor medication adherence (15). Barriers to adherence may include patient factors (remembering to obtain or take medications, fear, depression, or health beliefs), medication factors (complexity, multiple daily dosing, cost, or side effects), and system factors (inadequate follow-up or support). A patient-centered, nonjudgmental communication style can help providers to identify barriers to adherence as well as motivation for self-care (17). Nurse-directed interventions, home aides, diabetes education, and pharmacy-derived interventions improved adherence but had a very small effect on outcomes, including metabolic control (27). Success in overcoming barriers to adherence may be achieved if the patient and provider agree on a targeted approach for a specific barrier (10). For example, simplifying a complex treatment regimen may improve adherence in those who identify complexity as a barrier.

#### **Objective 3: Change the Care System.**

A characteristic of most successful care systems is making high-quality care an institutional priority (28). Changes that increase the quality of diabetes care include providing care on evidence-based guidelines (21); expanding the role of teams to implement more intensive disease management strategies (6,24,29); tracking medication adherence at a system level (15); redesigning the care process (30); implementing electronic health record tools (31,32); empowering and educating patients (33,34); removing financial barriers and reducing patient out-of-pocket costs for diabetes education, eye exams, self-monitoring of blood glucose, and necessary medications (6); assessing and addressing psychosocial issues (26,35); and identifying/developing/engaging community resources and public policy that support healthy lifestyles (36).

Initiatives such as the Patient-Centered Medical Home show promise for improving

outcomes by coordinating primary care and offering new opportunities for team-based chronic disease management (37). Additional strategies to improve diabetes care include reimbursement structures that, in contrast to visit-based billing, reward the provision of appropriate and high-quality care to achieve metabolic goals (38), and incentives that accommodate personalized care goals (6,39).

## TAILORING TREATMENT TO REDUCE DISPARITIES

### Recommendations

- Providers should assess social context, including potential food insecurity, housing stability, and financial barriers, and apply that information to treatment decisions. **A**
- Patients should be referred to local community resources when available. **B**
- Patients should be provided with self-management support from lay health coaches, navigators, or community health workers when available. **A**

The causes of health disparities are complex and include societal issues such as institutional racism, discrimination, socioeconomic status, poor access to health care, education, and lack of health insurance. Social determinants of health can be defined as the economic, environmental, political, and social conditions in which people live, and are responsible for a major part of health inequality worldwide (40). Given the tremendous burden that obesity, unhealthy eating, physical inactivity, and smoking place on the health of patients with diabetes, efforts are needed to address and change the societal determinants of these problems (41).

The ADA recognizes the association between social and environmental factors and the development of obesity and type 2 diabetes and has issued a call for research that seeks to better understand how these social determinants influence behaviors and how the relationships between these variables might be modified for the prevention and management of diabetes (42).

### Ethnic/Cultural/Sex Differences

Ethnic, cultural, and sex differences may affect diabetes prevalence and outcomes. Despite advances over the last several decades in medical knowledge

around diabetes management, racial and ethnic minorities remain at higher risk for microvascular complications than nonminorities. Type 2 diabetes develops more frequently in women with prior gestational diabetes mellitus (43) and in certain racial/ethnic groups (African American, Native American, Hispanic/Latino, and Asian American) (44). Women with diabetes are also at greater risk of coronary heart disease than men with diabetes (45).

### Access to Health Care

Socioeconomic and ethnic inequalities exist in the provision of health care to individuals with diabetes (46). For example, children with type 1 diabetes from racial/ethnic minority populations with lower socioeconomic status are at risk for poor metabolic control and poor emotional functioning (47). Significant racial differences and barriers exist in self-monitoring and outcomes (48).

### Lack of Health Insurance

Not having health insurance affects the processes and outcomes of diabetes care. Individuals without insurance coverage for blood glucose monitoring supplies have a 0.5% higher A1C than those with coverage (49). In a recent study of predominantly African American or Hispanic uninsured patients with diabetes, 50–60% had hypertension, but only 22–37% had systolic blood pressure controlled by treatments to under 130 mmHg (50). The Affordable Care Act has improved access to health care; however, many remain without coverage ([www.cdc.gov/nchs/fastats/health-insurance.htm](http://www.cdc.gov/nchs/fastats/health-insurance.htm)).

### System-Level Interventions

Eliminating disparities will require individualized, patient-centered, and culturally appropriate strategies as well as system-level interventions. Structured interventions that are developed for diverse populations and that integrate culture, language, finance, religion, and literacy and numeracy skills positively influence patient outcomes (51). All providers and health care systems are encouraged to use the National Quality Forum's National Voluntary Consensus Standards for Ambulatory Care—Measuring Healthcare Disparities (52).

### Community Support

Identification or development of resources to support healthy lifestyles is a core element of the CCM (7). Health

care community linkages are receiving increasing attention from the American Medical Association, the Agency for Healthcare Research and Quality, and others as a means of promoting translation of clinical recommendations for lifestyle modification in real-world settings (53). To overcome disparities, community health workers (54), peers (55,56), and lay leaders (57) may assist in the delivery of DSME and diabetes self-management support services (58), particularly in underserved communities. Strong social support leads to improved clinical outcomes, a reduction in psychosocial issues, and adoption of healthier lifestyles (59).

### Food Insecurity

Food insecurity (FI) is the unreliable availability of nutritious food and the inability to consistently obtain food without resorting to socially unacceptable practices. Over 14% (or one of every seven people in the U.S.) are food insecure. The rate is higher in some racial/ethnic minority groups including African American and Latino populations, in low-income households, and in homes headed by a single mother. FI may involve a tradeoff between purchasing more expensive nutritious food and less expensive energy- and carbohydrate-dense processed foods, which may contribute to obesity.

The risk for type 2 diabetes is increased twofold in those with FI (42). Therefore, in people with FI, interventions should focus on preventing diabetes. In those with diabetes and FI, the priority is mitigating the increased risk for uncontrolled hyperglycemia and severe hypoglycemia. Reasons for the increased risk of hyperglycemia include the steady consumption of inexpensive carbohydrate-rich processed foods, binge eating, financial constraints to the filling of diabetes medication prescriptions, and anxiety/depression leading to poor diabetes self-care behaviors. Hypoglycemia can occur as a result of inadequate or erratic carbohydrate consumption following administration of sulfonylureas or insulin. Providers should recognize that FI complicates diabetes management and seek local resources that can help patients and the parents of patients with diabetes to more regularly obtain nutritious food (60).

### Treatment Options

If using a sulfonylurea in patients with FI, glipizide may be considered due to its

relatively short half-life. It can be taken immediately before meals, thus obviating the need to plan meals to an extent that may be unreachable for those with FI.

For those needing insulin, short-acting insulin analogs, preferably delivered by a pen, may be used immediately after meal consumption, whenever food becomes available. While such insulin analogs may be costly, many pharmaceutical companies provide access to free medications through patient assistance programs. If short-acting insulin analogs are not options for those with FI who need insulin therapy, a relatively low dose of an ultra-long-acting insulin analog may be prescribed simply to prevent marked hyperglycemia, while recognizing that tight control may not be possible in such cases.

### Language Barriers

Diabetes is more common among non-English speaking individuals in the U.S., as is FI. Therefore, it is important to consider screening for diabetes and FI in this population. Providers that care for non-English speakers should develop or offer educational programs and materials in multiple languages with the specific goal of preventing diabetes and building diabetes awareness in people who cannot easily read or write in English.

### Homelessness

Homelessness often accompanies many barriers to diabetes self-management, including FI, literacy and numeracy deficiencies, lack of insurance, cognitive dysfunction, and mental health issues. Therefore, providers who care for homeless individuals should be well versed or have access to social workers to facilitate temporary housing for their patients as a means to prevent and control diabetes. Additionally, patients with diabetes who are homeless need secure places to keep their diabetes supplies and refrigerator access to properly store their insulin and have access to take it on a regular schedule.

### References

1. Institute of Medicine. Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century [Internet], 2001. Washington, DC, The National Academies Press. Available from <http://www.nap.edu/catalog/10027>. Accessed 8 September 2016
2. Ali MK, Bullard KM, Saaddine JB, Cowie CC, Imperatore G, Gregg EW. Achievement of goals in U.S. diabetes care, 1999–2010. *N Engl J Med* 2013;368:1613–1624

3. Wang J, Geiss LS, Cheng YJ, et al. Long-term and recent progress in blood pressure levels among U.S. adults with diagnosed diabetes, 1988–2008. *Diabetes Care* 2011;34:1579–1581
4. Kerr EA, Heisler M, Krein SL, et al. Beyond comorbidity counts: how do comorbidity type and severity influence diabetes patients' treatment priorities and self-management? *J Gen Intern Med* 2007;22:1635–1640
5. Fernandez A, Schillinger D, Warton EM, et al. Language barriers, physician-patient language concordance, and glycemic control among insured Latinos with diabetes: the Diabetes Study of Northern California (DISTANCE). *J Gen Intern Med* 2011;26:170–176
6. TRIAD Study Group. Health systems, patients factors, and quality of care for diabetes: a synthesis of findings from the TRIAD study. *Diabetes Care* 2010;33:940–947
7. Stelfox M, Dipnarine K, Stopka C. The chronic care model and diabetes management in US primary care settings: a systematic review. *Prev Chronic Dis* 2013;10:E26
8. Coleman K, Austin BT, Brach C, Wagner EH. Evidence on the Chronic Care Model in the new millennium. *Health Aff (Millwood)* 2009;28:75–85
9. Piatt GA, Anderson RM, Brooks MM, et al. 3-year follow-up of clinical and behavioral improvements following a multifaceted diabetes care intervention: results of a randomized controlled trial. *Diabetes Educ* 2010;36:301–309
10. Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med* 2010;363:2611–2620
11. Parchman ML, Zeber JE, Romero RR, Pugh JA. Risk of coronary artery disease in type 2 diabetes and the delivery of care consistent with the chronic care model in primary care settings: a STARNet study. *Med Care* 2007;45:1129–1134
12. Davidson MB. How our current medical care system fails people with diabetes: lack of timely, appropriate clinical decisions. *Diabetes Care* 2009;32:370–372
13. Selby JV, Uratsu CS, Fireman B, et al. Treatment intensification and risk factor control: toward more clinically relevant quality measures. *Med Care* 2009;47:395–402
14. Raebel MA, Ellis JL, Schroeder EB, et al. Intensification of antihyperglycemic therapy among patients with incident diabetes: a Surveillance Prevention and Management of Diabetes Mellitus (SUPREME-DM) study. *Pharmacoepidemiol Drug Saf* 2014;23:699–710
15. Raebel MA, Schmittiel J, Karter AJ, Konieczny JL, Steiner JF. Standardizing terminology and definitions of medication adherence and persistence in research employing electronic databases. *Med Care* 2013;51(Suppl. 3):S11–S21
16. Grant RW, Pabon-Nau L, Ross KM, Youatt EJ, Pandiscio JC, Park ER. Diabetes oral medication initiation and intensification: patient views compared with current treatment guidelines. *Diabetes Educ* 2011;37:78–84
17. Tamhane S, Rodriguez-Gutierrez R, Hargraves I, Montori VM. Shared decision-making in diabetes care. *Curr Diab Rep* 2015;15:112
18. Schillinger D, Piette J, Grumbach K, et al. Closing the loop: physician communication with diabetic patients who have low health literacy. *Arch Intern Med* 2003;163:83–90
19. Rosal MC, Ockene IS, Restrepo A, et al. Randomized trial of a literacy-sensitive, culturally

tailored diabetes self-management intervention for low-income Latinos: Latinos en Control. *Diabetes Care* 2011;34:838–844

20. Osborn CY, Cavanaugh K, Wallston KA, et al. Health literacy explains racial disparities in diabetes medication adherence. *J Health Commun* 2011;16(Suppl. 3):268–278
21. O'Connor PJ, Bodkin NL, Fradkin J, et al. Diabetes performance measures: current status and future directions. *Diabetes Care* 2011;34:1651–1659
22. Garg AX, Adhikari NK, McDonald H, et al. Effects of computerized clinical decision support systems on practitioner performance and patient outcomes: a systematic review. *JAMA* 2005;293:1223–1238
23. Smith SA, Shah ND, Bryant SC, et al.; Evidence Research Group. Chronic care model and shared care in diabetes: randomized trial of an electronic decision support system. *Mayo Clin Proc* 2008;83:747–757
24. Jaffe MG, Lee GA, Young JD, Sidney S, Go AS. Improved blood pressure control associated with a large-scale hypertension program. *JAMA* 2013;310:699–705
25. Stone RA, Rao RH, Sevic MA, et al. Active care management supported by home telemonitoring in veterans with type 2 diabetes: the DiaTel randomized controlled trial. *Diabetes Care* 2010;33:478–484
26. Powers MA, Bardsley J, Cypress M, et al. Diabetes self-management education and support in type 2 diabetes: a joint position statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. *Diabetes Care* 2015;38:1372–1382
27. Vermeire E, Wens J, Van Royen P, Biot Y, Hearnshaw H, Lindenmeyer A. Interventions for improving adherence to treatment recommendations in people with type 2 diabetes mellitus. *Cochrane Database Syst Rev* 2005;2:CD003638
28. Tricco AC, Ivers NM, Grimshaw JM, et al. Effectiveness of quality improvement strategies on the management of diabetes: a systematic review and meta-analysis. *Lancet* 2012;379:2252–2261
29. Peikes D, Chen A, Schore J, Brown R. Effects of care coordination on hospitalization, quality of care, and health care expenditures among Medicare beneficiaries: 15 randomized trials. *JAMA* 2009;301:603–618
30. Feifer C, Nemeth L, Nietert PJ, et al. Different paths to high-quality care: three archetypes of top-performing practice sites. *Ann Fam Med* 2007;5:233–241
31. Reed M, Huang J, Graetz I, et al. Outpatient electronic health records and the clinical care and outcomes of patients with diabetes mellitus. *Ann Intern Med* 2012;157:482–489
32. Cebul RD, Love TE, Jain AK, Hebert CJ. Electronic health records and quality of diabetes care. *N Engl J Med* 2011;365:825–833
33. Battersby M, Von Korff M, Schaefer J, et al. Twelve evidence-based principles for implementing self-management support in primary care. *Jt Comm J Qual Patient Saf* 2010;36:561–570
34. Grant RW, Wald JS, Schnipper JL, et al. Practice-linked online personal health records for type 2 diabetes mellitus: a randomized controlled trial. *Arch Intern Med* 2008;168:1776–1782

35. Young-Hyman D, de Groot M, Hill-Briggs F, Gonzalez JS, Hood K, Peyrot M. Psychosocial care for people with diabetes: a position statement of the American Diabetes Association. *Diabetes Care* 2016;39:2126–2140
36. Pullen-Smith B, Carter-Edwards L, Leathers KH. Community health ambassadors: a model for engaging community leaders to promote better health in North Carolina. *J Public Health Manag Pract* 2008;14(Suppl.):S73–S81
37. Bojdziewski T, Gabbay RA. Patient-centered medical home and diabetes. *Diabetes Care* 2011;34:1047–1053
38. Rosenthal MB, Cutler DM, Feder J. The ACO rules—striking the balance between participation and transformative potential. *N Engl J Med* 2011;365:e6
39. Washington AE, Lipstein SH. The Patient-Centered Outcomes Research Institute—promoting better information, decisions, and health. *N Engl J Med* 2011;365:e31
40. Commission on Social Determinants of Health. Closing the gap in a generation: health equity through action on the social determinants of health. Final report of the Commission on Social Determinants of Health. Geneva, World Health Organization. Available from [http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703\\_eng.pdf](http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703_eng.pdf). Accessed 18 November 2016
41. Jack L, Jack NH, Hayes SC. Social determinants of health in minority populations: a call for multidisciplinary approaches to eliminate diabetes-related health disparities. *Diabetes Spectr* 2012;25:9–13
42. Hill JO, Galloway JM, Goley A, et al. Scientific statement: socioecological determinants of prediabetes and type 2 diabetes. *Diabetes Care* 2013;36:2430–2439
43. Kim C, Newton KM, Knopp RH. Gestational diabetes and the incidence of type 2 diabetes: a systematic review. *Diabetes Care* 2002;25:1862–1868
44. Hutchinson RN, Shin S. Systematic review of health disparities for cardiovascular diseases and associated factors among American Indian and Alaska Native populations. *PLoS One* 2014;9:e80973
45. Peters SAE, Huxley RR, Woodward M. Diabetes as risk factor for incident coronary heart disease in women compared with men: a systematic review and meta-analysis of 64 cohorts including 858,507 individuals and 28,203 coronary events. *Diabetologia* 2014;57:1542–1551
46. Ricci-Cabello I, Ruiz-Pérez I, Olry de Labry-Lima A, Márquez-Calderón S. Do social inequalities exist in terms of the prevention, diagnosis, treatment, control and monitoring of diabetes? A systematic review. *Health Soc Care Community* 2010;18:572–587
47. Borschuk AP, Everhart RS. Health disparities among youth with type 1 diabetes: a systematic review of the current literature. *Fam Syst Health* 2015;33:297–313
48. Campbell JA, Walker RJ, Smalls BL, Egede LE. Glucose control in diabetes: the impact of racial differences on monitoring and outcomes. *Endocrine* 2012;42:471–482
49. Bowker SL, Mitchell CG, Majumdar SR, Toth EL, Johnson JA. Lack of insurance coverage for testing supplies is associated with poorer glycaemic control in patients with type 2 diabetes. *CMAJ* 2004;171:39–43
50. Baumann LC, Chang M-W, Hoebeke R. Clinical outcomes for low-income adults with hypertension and diabetes. *Nurs Res* 2002;51:191–198
51. Zeh P, Sandhu HK, Cannaby AM, Sturt JA. The impact of culturally competent diabetes care interventions for improving diabetes-related outcomes in ethnic minority groups: a systematic review. *Diabet Med* 2012;29:1237–1252
52. National Quality Forum. National voluntary consensus standards for ambulatory care—measuring healthcare disparities [Internet], 2008. Available from [https://www.qualityforum.org/Publications/2008/03/National\\_Voluntary\\_Consensus\\_Standards\\_for\\_Ambulatory\\_Care%E2%80%94Measuring\\_Healthcare\\_Disparities.aspx](https://www.qualityforum.org/Publications/2008/03/National_Voluntary_Consensus_Standards_for_Ambulatory_Care%E2%80%94Measuring_Healthcare_Disparities.aspx). Accessed 18 November 2016
53. Agency for Healthcare Research and Quality. Clinical-community linkages [Internet]. Available from <http://www.ahrq.gov/professionals/prevention-chronic-care/improve/community/index.html>. Accessed 10 October 2016
54. Shah M, Kaselitz E, Heisler M. The role of community health workers in diabetes: update on current literature. *Curr Diab Rep* 2013;13:163–171
55. Heisler M, Vijan S, Makki F, Piette JD. Diabetes control with reciprocal peer support versus nurse care management: a randomized trial. *Ann Intern Med* 2010;153:507–515
56. Long JA, Jahnle EC, Richardson DM, Loewenstein G, Volpp KG. Peer mentoring and financial incentives to improve glucose control in African American veterans: a randomized trial. *Ann Intern Med* 2012;156:416–424
57. Foster G, Taylor SJ, Eldridge SE, Ramsay J, Griffiths CJ. Self-management education programmes by lay leaders for people with chronic conditions. *Cochrane Database Syst Rev* 2007;4:CD005108
58. Siminerio L, Ruppert KM, Gabbay RA. Who can provide diabetes self-management support in primary care? Findings from a randomized controlled trial. *Diabetes Educ* 2013;39:705–713
59. Strom JL, Egede LE. The impact of social support on outcomes in adult patients with type 2 diabetes: a systematic review. *Curr Diab Rep* 2012;12:769–781
60. Seligman HK, Schillinger D. Hunger and socioeconomic disparities in chronic disease. *N Engl J Med* 2010;363:6–9