Working together to improve health care quality, outcomes, and affordability in Washington State.

Diabetes Care Report and Guidelines

January 24th, 2024

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Bree Collaborative Background

The Dr. Robert Bree Collaborative was established in 2011 by Washington State House Bill 1311 "…to provide a mechanism through which public and private health care stakeholders can work together to improve quality, health outcomes, and cost effectiveness of care in Washington State." The Bree Collaborative was named in memory of Dr. Robert Bree, a leader in the imaging field and a key member of previous health care quality improvement collaborative projects.

Members are appointed by the Washington State Governor and include public health care purchasers for Washington State, private health care purchasers (employers and union trusts), health plans, physicians and other health care providers, hospitals, and quality improvement organizations. The Bree Collaborative is charged with identifying health care services annually with substantial variation in practice patterns, high utilization trends in Washington State, or patient safety issues. For each health care service, the Bree Collaborative identifies and recommends best-practice, evidence-based approaches that build upon existing efforts and quality improvement activities to decrease variation. In the bill, the legislature does not authorize agreements among competing health care providers or health carriers as to the price or specific level of reimbursement for health care services. Furthermore, it is not the intent of the legislature to mandate payment or coverage decisions by private health care purchasers or carriers.

See **Appendix A** for a list of current Bree Collaborative members.

Recommendations are sent to the Washington State Health Care Authority for review and approval. The Health Care Authority (HCA) oversees Washington State's largest health care purchasers, Medicaid, and the Public Employees Benefits Board Program, as well as other programs. The HCA uses the recommendations to guide state purchasing for these programs. The Bree Collaborative also strives to develop recommendations to improve patient health, health care service quality, and the affordability of health care for the private sector but does not have the authority to mandate implementation of recommendations.

For more information about the Bree Collaborative, please visit: www.breecollaborative.org.

Bree Collaborative members identified diabetes care as a priority improvement area and convened a workgroup to develop evidence-informed standards. The workgroup met from January 2022 to January 2023.

See **Appendix B** for the workgroup charter and a list of members.

Glossary

TERM	MEANING
ADA	American Diabetes Association
AHRQ	Agency for Healthcare Research & Quality
CDCES/DCES	Certified Diabetes Care and Education Specialist/Diabetes Care and Education Specialist
DSMES	Diabetes Self-Management and Education Services
HCA	Health Care Authority
HEDIS	Healthcare Effectiveness Data and Information Set
HTCC	Health Technology Coordinating Committee
MNT	Medical Nutrition Therapy
NCQA	National Care Quality Assurance Commission
NDPP	National Diabetes Prevention Program
PMCC	Performance Measures Coordinating Committee
SDPI	Special Diabetes Program for Indians
USPSTF	United States Preventative Services Task Force

Background

Diabetes is a common, chronic health condition caused by the body's impaired ability to produce or use insulin to process sugar (glucose) and turn it into energy. About 9% of adult Washingtonians have diabetes. [i]

Diabetes often results in elevated blood sugar which over time leads to serious health complications such as heart disease, vision loss, and limb amputation. [ii] Diabetes is the 8th leading cause of death with estimated costs annual excess costs of $6.7 billion in Washington. [iii] [iv] [v] Individuals across the age spectrum can be diagnosed, with a diagnosis among children and adolescents becoming more prevalent. [vi] One in five Americans are unaware they have diabetes and eight in ten are unaware they have pre-diabetes, with similar rates in Washington state. [vii] These guidelines focus on Types I, II, and prediabetes, defined as: [viii]

- **Type I:** Autoimmune reaction that stops the body making insulin; 5-10% of people with diabetes.
- **Type II:** Not enough insulin is produced or is produced but not taken in well by cells (blood sugar >126 mg/dL), 90-95% of people with diabetes. More likely to be diagnosed in adults. People with lower socioeconomic status are more likely to have type II diabetes, associated with a lower utilization of insulin, experience more complications, and die sooner than those with a higher socioeconomic status. [ix, x]
- **Pre-diabetes:** [xi] Blood sugar is higher than normal (100 to 125 mg/dL), but not high enough to be Type II. Impacts 1/3 of adults in Washington. Risk for pre-diabetes can be modified by access to healthy foods, ability to safely engage in physical activity in one's built environment, and improved management of stress and mental health well-being. [xii]

Washington state performs below the NCQA 25th percentile for blood sugar testing and other diabetes-related measures for people with diabetes with disparities and variability by race, ethnicity, payor status, geographic location and socioeconomic status. [xiii, xiv] Clinical best practices for diagnosis, routine blood sugar testing, symptom management by an interdisciplinary team, patient education, and links to community resources are highly variable between delivery sites and regions and represent an opportunity to have a significant impact on a highly prevalent disease. Clinical inertia, characterized by a lack of initiated or intensified treatment despite clear indications, poses a significant barrier to achieving optimal outcomes in the management of diabetes – clinicians and healthcare professionals should take proactive steps to assist patients in meeting their weight loss, blood sugar and other care goals. [xv] See the American Diabetes Association's Overcoming Therapeutic Inertia Initiative.

Diabetes was selected by Bree Collaborative members in September 2022 and a workgroup of clinical and community experts met from January 2023 to January 2024. Key priorities to improve population health and equity are:

- Increase performance on NCQA measures for people who have been diagnosed with diabetes.
- Identify individuals with prediabetes or diabetes who are unaware of their status and engage them in treatment and prevention.
- Uniformly use team-based care to support individuals with diabetes or at risk for diabetes.

- Promote connection to community resources, address social needs, access to prevention and health promotion activities.
- Support patients' medication and supplies use by removing payment barriers.

Focus Areas	Evidence Review Topics
Team-Based Care & Empanelment	- Effectiveness of team-based care for diabetes, especially in rural or medically underserved communities - Professional roles in the care team
Population Health	- Prevention of diabetes through identification and early intervention - Strategies to reach medically underserved populations. - Connection to community resources and programs - Identifying and addressing food insecurity - School based care, Dental care, and Eye care
Financial	- Removing or minimizing payment barriers to evidence-based services, medications, and devices for patients - Standardizing coverage of diabetes prevention and care services - Use of risk-adjustment in diabetes care

This report draws from existing American Diabetes Association guidance, American Dental Association guidance, American Optometric Association guidance, United States Preventative Services Taskforce recommendations, available evidence, and expert opinion. The focus areas were synthesized into guidelines for audiences such as Clinicians and Healthcare Professionals, Healthcare Delivery Systems both Ambulatory and Inpatient, Health and Vision Plans, Dental Plans, Employer Purchasers, Department of Health and Public Health Agencies, Washington State Legislature, Schools, Dentists and Dental Clinics, and Optometrists and Optometry Clinics.

Guidelines

Clinicians and Healthcare Professionals

☐ For **all patients**:

- Use person-centered communication that considers individual preferences, available social supports, home environment, culture, numeracy, literacy, and other factors that impact optimization of health outcomes (see **Appendix A on Person-Centered Care**)
- Screen individuals over 40 years of age (or 18+ with overweight or obesity) for prediabetes and diabetes based on a person's most relevant risk factors aligned with the most up to date clinical guidance (e.g., American Diabetes Association (ADA), United States Preventative Services Task Force (USPSTF))[xvi]
    - Ensure appropriate screening in high-risk populations (African American, Latino/a, Native American, Asian American, Pacific Islander) and individuals living with HIV.
- Perform a psychosocial assessment according to most recent clinical guidance. (E.g. PHQ-9 for depression, GAD for anxiety disorder) Find validated tools for screening in clinical settings in Table 2 of ADA Standards of Care here.[xvii]
    - Refer to behavioral health professional when appropriate. Facilitate their inclusion in the care team when applicable.
- Screen for food insecurity and other social needs with a validated instrument. Refer to Bree Social Needs Screening Report for guidance on screening.[xviii, xix]
    - Refer appropriate patients to social workers, care managers and/or community support to seek opportunities to address food insecurity.[xx]
- In addition to tracking BMI annually, consider the use of additional measurements of body fat distribution to support identification of obesity, such as waist circumference, waist-to-hip ratio, and/or waist-to-height ratio.[xxi]

☐ For **all patients at risk for diabetes and/or with prediabetes**.

- Develop a management plan and person-centered goals to delay progression of prediabetes to diabetes, including plan for glycemic monitoring and pharmacologic management.[xxii]
- Refer patients at high risk for diabetes to National Diabetes Prevention Program (NDPP) or Special Diabetes Program for Indians (SDPI), considering low-cost options (tele video-based or technology assisted programs)[xxiii]
- For patients with obesity, consider referral to intensive multicomponent behavioral therapy for weight management per most recent guidelines. (e.g. USPSTF guidelines)
- For patients with overweight or obesity not reaching weight loss goals, reevaluate therapies and intensify treatment with additional approaches (e.g., metabolic surgery, additional pharma agents and structured lifestyle management programs)[xxiv]
- Refer patients to community health workers as available through a patient's health clinic, plan, a local Community Care Hub, or Community Based Organization for care management items related to diabetes and diabetes prevention such as screening and health education, outreach, enrollment, and patient navigation.[xxv]

☐ For **patients with diabetes**: The diabetes care team should follow health system clinical pathways and/or protocols for treatment and management of diabetes that follow the most

updated clinical guidelines (e.g. ADA Standards of Care, USPSTF guidelines). See **Review of Evidence** for links to clinical guidance**.** Key points are highlighted below:

- Use health systems registry for patients with diabetes to track and address gaps in care.[xxvi]
- Develop a plan for glycemic monitoring and pharmacologic management.
- Complete a comprehensive psychosocial assessment using validated tools (e.g., PAID or Diabetes Distress Scale (DDS)) at diagnosis or initial visit, at least annually, or during a change in disease, treatment or life circumstances (see Table 2 in ADA Position Statement, or more updated clinical guidance for further options).[xxvii]
- Diabetes devices should be considered, such as blood glucose monitors (BGMs), continuous glucose monitors (CGMs), insulin pumps, or automated insulin delivery (AID) systems, as therapy tools to assist with the management of diabetes. Review Health Technology Clinical Committee criteria for diabetes devices, such as CGMs and BGMs, as available to guide decision-making.[xxviii]
- Educate the patient on diabetes self-management, medication management, healthy lifestyle options, and where to receive support and resources. Ensure education is culturally relevant and linguistically inclusive. [xxix]
    - Ensure the patient understands what hypoglycemia and hyperglycemia feel like and what to do if that occurs, including developing an emergency preparedness plan in conjunction with their support system.
    - Promote self-management of diabetes by the patient and their support system.
    - Use patient education strategies (e.g., teach back) and validated tools (e.g., PAID) to facilitate and confirm patient and support system understanding of diabetes education
- Refer patient to:
    - Diabetes Self-Management Education and Support (DSMES) at diagnosis, annually and/or when not meeting treatment targets, when transitions in life and care occur, and when complicating factors develop**.** Follow DSMES Consensus Report recommendations or more updated guidance as available (Example algorithm for DSMES referral)[xxx]
    - At diagnosis and as appropriate thereafter, refer to appropriate specialists (eye care professional, family planning, registered dietician nutritionist for medical nutrition therapy, dentist, podiatrist, mental health professional, audiology) (see ADA Table 4.4 or more updated clinical guidance).[xxxi]
    - Community health workers as available through a patient's health clinic, plan, a local Community Care Hub, or Community Based Organization for care management items related to diabetes such as screening and health education, outreach, enrollment, and patient navigation.[xxxii]
- Communicate diabetes management plan and any changes with external partners and the broader care team, including involved specialists, case managers or care coordinators, and community health workers, especially during the initial referral.
- Dental Considerations:
    - For all people with newly diagnosed diabetes, ask about a prior diagnosis of periodontal disease. Ask all patients about signs and symptoms of periodontal disease (bleeding gums during brushing or eating, loose teeth, spacing or

spreading of the teeth, oral malodor and/or abscesses in the gums or gingival suppuration.) [xxxiii]

- Inform patients of increased risk of serious oral and systemic complications when periodontal disease is untreated, and that successful periodontal therapy may have a positive impact on their health. [xxxiv]
- Identify when the patient was last seen by a dentist, and recommend regular dental visits as determined by the dentist for all patients with diabetes, including children and adolescents. [xxxv]

Ambulatory Care Settings

- ☐ Follow the tenets of the Chronic Care Model listed below in organizational policies and protocols.[xxxvi]
  - Use registry for tracking of care gaps for patients with diabetes and regularly update including accurate contact information.[xxxvii]
  - Utilize an electronic health record system (EHR).
    - Ensure EHR has structured (FHIR) data fields that allow tracking including but not limited to: glycemic testing, glycemic control, vital signs and labs, eye exams, foot exams, screening for chronic kidney disease and relevant referrals to specialists.
  - If feasible, incorporate clinical decision support tools such as alert systems, into workflows and EHRs to support use of best practices.[xxxviii]
  - Ensure that all patients on the registry have a clinic visit at least annually if not more frequently based on individual need (e.g., poor management) through proactive outreach.
- ☐ In addition, provide care in alignment with Bree Collaborative Primary Care Guidelines
- ☐ Provide a multidisciplinary coordinated care team for all patients on the registry. The team should at a minimum include the patient and/or caregiver, a clinical pharmacist, a registered nurse, and a dietician with support from the primary care provider. It should also include a certified diabetes care and education specialist (either a registered dietitian nutritionist or nurse), an individual responsible for care coordination, and other members necessary to address specific needs of patients, including mental health professionals.[xxxix] Models may include:
  - Shared medical appointments for patients with prediabetes or diabetes.
  - Community health workers as part of interdisciplinary teams as available. Pathways to involve community health workers may include hiring local community health workers, partnering with local community health workers, or contracting with Community Care Hubs and Community Based Organizations that house community health workers.
    - follow the NCQA/Penn guidelines for supporting community health workers.
- ☐ Provide telehealth options for care, especially for rural communities.[xl]
- ☐ Align clinic workflows with most recent clinical guidance (e.g., ADA, USPSTF) including but not limited to comprehensive medical assessment, pharmacologic management, assessment and management of risk factors and comorbidities, glycemic monitoring, immunization and psychosocial assessment. As diabetes management is highly individualized, workflows may vary based on diabetes type, severity, and a patient's unique needs.[xli]
  - Consider aligning workflows with the American Heart Association's Target: Type 2 Diabetes Recognition Program. (see checklist here) Key additional components include:
    - Ensure assessment of urine microalbumin-creatinine ratio and eGFR at least annually for patients who have had type 1 diabetes for 5 or more years and in all patients with type 2 diabetes.
    - Offer immunizations of Hepatitis B, HPV, influenza, Pneumococcal, tetanus, diphtheria, pertussis, and zoster as per ADA guidelines or more updated recommendations.
    - Psychosocial assessment by a validated instrument(s)
    -

- ☐ Develop and implement protocols to routinely screen all patients for food insecurity and other social needs, and refer appropriate patients to social workers, care managers and/or community support to seek opportunities to address food insecurity and other social needs. Refer to Foundation for Health Care Quality's Social Needs Screening Report and Social Needs Intervention Report for guidance.[xlii]
    - Consider co-locating resources to address food insecurity (e.g., food banks in the same building and clinics) as resources allow.
- ☐ Ensure that a person's health information, including but not limited to glycemic testing, lipid testing, tobacco smoking cessation, and diabetes-related hospitalization information, is available to patients through patient portals and that the patient knows how to access their information.
    - Educate patients on accessing their health information and care plan through patient portals that are accessible, culturally appropriate, and linguistically inclusive (e.g., available in patient's preferred language, uses appropriate language for individuals with low health literacy)
- ☐ Create and/or support referral systems for the diabetes care team to correspond with and connect patients with external support.[xliii]
    - Create and/or support pathways and/or referral systems for clinicians to correspond with dental providers, eye care professionals and other relevant specialties to provide current lab work and medication lists.
    - Create and support a referral process to a recognized National Diabetes Prevention Program (NDPP) or Special Diabetes program for Indians (SDPI), and assist patients and providers in finding a program that aligns with their learning needs and is inclusive of their identities (e.g., language, culturally appropriate, or provided in connection with a faith-based organizations.)
    - Create and support referral processes for nationally accredited Diabetes Self-Management Education and Support (DSMES) services and medical nutrition therapy (MNT).
- ☐ Develop capabilities to track and report a set of diabetes-related performance measures as determined by payer contracts and/or reporting requirements, including but not limited to:
    - NCQA HEDIS
        - Hemoglobin A1c Control for Patients with Diabetes (HBD)
        - Blood Pressure Control for Patients with Diabetes (BPD)
        - Eye exam for patients with diabetes (EED)
        - Kidney Health Exam for Patients with Diabetes (KED)
        - Statin Therapy for Patients with Diabetes (SPD)
        - Adult Immunization Status (AIS)
        - Social Needs Screening and Intervention (SNS-E)
- ☐ If possible and needed, host health fairs and/or community-based screenings where glycemic testing is provided as part of the health system's community benefit work to identify individuals at risk for diabetes.[xliv]
    - ☐ If providing community-based screening, develop referral pathways for individuals that screen positive to connect with the appropriate level of care and/or establish with a PCP, regardless of screening location.

- ☐ Partner with external community-based organizations, including faith-based organizations, to host screening for prediabetes and diabetes.
    - Partner with external, community-based organizations connected to community care hubs.
- ☐ As resources allow, utilize tactics (e.g., mobile van) to reach medically underserved or rural populations (e.g., low income, migrant populations, etc.)[xlv]

Inpatient Care Settings

- ☐ Follow the ADA's Hospital Care Delivery Standards, or more updated clinical guidance, for patients admitted for diabetes or diabetes-related conditions.[xlvi]
- ☐ Utilize discharge planning toolkits, such as the Agency for Healthcare Research and Quality's Re-Engineering Discharge (RED) Toolkit to ensure comprehensive discharge planning, including medication reconciliation and structured discharge communication
    - Coordinate care transitions with the patient's primary care provider and send a discharge summary within 3 business days.
- ☐ Meet the Key Indicators for Recognition under Leapfrog's Recognized Leader in Caring for People Living with Diabetes Program.
- ☐ Develop capabilities to track and report diabetes-related performance measures, such as complications from diabetes (e.g., measures for diabetes-related amputations, hypoglycemic events, diabetic ketoacidosis, hyperglycemic hyperosmolar nonketotic syndrome) as determined by payor contracts and/or reporting requirements.

Health Plans

- ☐ Minimize the use of prior authorization for members meeting inclusion criteria for on label prescribing for medication, supplies, and equipment designated as recommended by the most current version of American Diabetes Association (ADA) Standards of Care (using grade A evidence).[xlvii]
    - Example: Pharmacy benefit managers should approve grade A medications if the member has a history of a billed diagnosis of diabetes.
    - Example: Approve medications with grade A evidence automatically if the member has a previous prescription for metformin.
    - Example: Inform providers of medications on single preferred drug list for patients on Medicaid/Apple Health.
    - Example: Ensure formulary information is available at point of care to providers.
- ☐ Cover and minimize cost sharing (co-pays, coinsurance, count towards deductible) to members for on label prescribing of medications with grade A evidence per most recent clinical guidance.[xlviii]
- ☐ Do not require co-pay, coinsurance, nor have visits count against a member's deductible to receive visits for prediabetes/diabetes preventative care, such as for a National Diabetes Prevention Program (NDPP)/Special Diabetes Program for Indians (SDPI), or Diabetes Self-Management and Education Services (DSMES) and Medical Nutrition Therapy (MNT) visits.
- ☐ Cover prediabetes and diabetes services along the spectrum of fee-for-service (FFS) to alternative payment models with risk-adjusted, person-level payments (e.g., PMPM)[xlix]
    - Hemoglobin A1C (A1C), Fasting Plasma Glucose, and random or post-prandial plasma glucose test monitoring without member co-pays/co-insurance or counting towards the members deductible:[l]
        - Minimum once a year for members with prediabetes and living with risk for diabetes.
        - Minimum 2 times a year for members with diabetes.
    - For members needing insulin pumps, ensure coverage and access under the DME benefit, the pharmacy benefit, or both if possible. Consider pharmacy benefit coverage for continuous glucose monitors.
    - Accredited DSMES services both virtually and in-person without cost-sharing at a minimum of 6 visits per year.[li]
    - Cover certified NDPPs of member's choosing with guidance from health care provider.[lii]
    - Cover screening and monitoring for diabetic retinopathy at least annually.[liii]
    - A minimum of 6 hours a year for diabetes education and care in alignment with WA Medicaid coverage.
    - Visit with Registered Dieticians for individuals with diabetes or diagnosis with pre-diabetes for minimum of 3 encounters in the first 6 months of diagnosis for medical nutrition therapy. Then at least one encounter for every subsequent year.[liv]
        - If a client requires more time with the Registered Dietician due to medical necessity, then approve more hours through a prior authorization process.
    - Visits with a Community Health Worker including virtual visits (as in Rhode Island, California)
    - Shared medical visits for patients with diabetes and prediabetes.[lv]

- ☐ Provide a list of available National Diabetes Prevention Programs (NDPP) to members and within network providers.
- ☐ Communicate coverage and availability of NDPP programs and DSMES services to members.
- ☐ Assign each member to a primary care provider upon enrollment. Communicate this to the member and to the provider and/or medical group.
- ☐ Provide member education on coverage available for diabetes prevention and care, as well as self-management and support services.
- ☐ Outreach to diabetic members and caregivers and educate on how to see a provider.
    - Identify and target outreach to members not receiving diabetes screening according to clinical guidelines and/or not picking up prescriptions (gaps in prescription coverage)
- ☐ Identify when members with diabetes experience gaps in care. Communicate with providers about medication adherence, blood glucose monitoring, and gaps in care for members with prediabetes or diabetes (eye exams, dental exams, etc.)
- ☐ Partner with community organizations and provider groups to increase access for patients to healthy produce such as the Fruit and Veggie Prescription Program or Medically tailored meal delivery programs and/or consider subsidies of healthy fruit and veggies for individuals to increase access and address food insecurity.[lvi]
- ☐ Require collection of standardized measures/metrics in contracts, including but not limited to:
    - NCQA HEDIS
        - Hemoglobin A1c Control for Patients with Diabetes (HBD)
        - Blood Pressure Control for Patients with Diabetes (BPD)
        - Eye exam for patients with diabetes (EED)
        - Kidney Health Exam for Patients with Diabetes (KED)
        - Statin Therapy for Patients with Diabetes (SPD)
        - Adult Immunization Status (AIS)
        - Social Needs Screening and Intervention (SNS-E)

Dental Plans

- ☐ If a member is at risk for, or has Periodontal Disease, cover for full-mouth subgingival instrumentation and four supportive (periodontal) maintenance visits annually (like Apple Health).[lvii]
- ☐ Fully cover dental exams for members with diabetes at least every 6 months.[lviii]
- ☐ Consider using patient registries and reporting systems for patients with diabetes to track and close gaps in oral care.[lix]

Employer Purchasers

- ☐ The Washington Health Care Authority's (HCA) Health Technology Clinical Committee (HTCC) should consider re-reviewing the coverage of Continuous Glucose Monitoring devices.[lx]
- ☐ Review benefits to ensure adequate behavioral health coverage.
- ☐ Ensure contracted health plans follow the health plan guidance above.
- ☐ If self-funded, review the health plan guidance above, where appropriate.

- ☐ Ensure health plans provide coverage for remote patient monitoring codes (e.g., reviewing information from Continuous Glucose Monitors) for billable actions.

Department of Health and Public Health Agencies

- ☐ Develop a patient facing diabetes resource platform to inform clients where they may receive support in managing their diabetes (Examples: Utah, Montana).
  - Provide information on clinics available to establish care (clinics who accept sliding scale fee/uninsured), primary care providers accepting new clients, Diabetes Care and Education Specialists (DCES), community resources to address social needs (e.g., like community resource centers or community-based organizations, fruit and veggie prescription programs, meals on wheels, mobile vans, local food banks, etc.), NDPPs (especially DPPs with sliding scales or free memberships) and DSMES services.
  - Ensure the information provided is culturally relevant and linguistically inclusive.
- ☐ Develop and support tactics and outreach systems (e.g., mobile vans) to engage with communities with known disparities (e.g., low-income areas, rural settings, agricultural workers.)[lxi] Example here.
- ☐ Develop interventions to support individuals in accessing and affording healthy foods, such as a Fruit and Veggie Prescription Program or subsidies for fresh foods.[lxii]
- ☐ Support community health worker programs, whether developing new public health programs, providing funding for community-based programs, or offering reimbursement for care coordination as a health-related service.
- ☐ Train all Community Health Workers (CHW) on diabetes care and self-management for individuals with diabetes or at risk for diabetes such as the WA DOH's Health Specific Module on Diabetes and Pre-diabetes course.[lxiii]
  - Support integration of CHW into health delivery systems through facilitation of partnership between or provision of CHW training.
- ☐ Encourage clinicians to meet with CHWs to review patient panels, educational learning material and topics to answer any questions or concerns.
- ☐ The Washington Health Care Authority's Performance Measures Coordinating Committee (PMCC) should consider Washington State be one of the states to test Prediabetes Measures for Medicaid beneficiaries in concert with AMA's work to have quality measures vetted through Medicare Mock Measures for NDPP. These measures for Medicare are under appeal.

Washington State Legislature

- ☐ Support Health Care Authority budget asks that align with whole-person health (e.g., primary care payment reform).
- ☐ Washington state HCA should consider supporting a State Plan Amendment for coverage of the National Diabetes Prevention Program (see Case for Coverage resources for states engaging in coverage policies for the National Diabetes Prevention Program)
- ☐ Consider requiring health plans that offer coverage in Washington to use the Washington HealthCare Authority's transparent standardized prior authorization criterion for medications for diabetes and/or prediabetes based on most recent clinical guidelines.

Schools

- ☐ Follow American Diabetes's Association' Guide for School Personnel on how to support students with diabetes.
- ☐ Provide education to nurses and staff on diabetes, diabetes management, and how to provide insulin to support students.
    - Provide virtual and asynchronous education opportunities for school staff to learn about diabetes who may not be able to attend in-person training.
- ☐ Engage with children, adolescents, parents, and school staff to support the development of educational lifestyle health programs for children and adolescents with diabetes or at risk for diabetes. [lxiv]
- ☐ Provide healthy food options in cafeteria for school meals and in school vending machines for students to access. [lxv]

Dentists and Dental Clinics

- ☐ Follow American Dental Association's recommendations on providing dental care to patients with diabetes or most updated clinical guidance.
- ☐ Follow International Consensus Report guidelines for management of periodontal disease among patients with diabetes.
- ☐ Inform patients with diabetes: they are at increased risk for oral complications (dry and/or burning mouth, fungal infections, poorer wound healing) and serious systemic complications (cardiovascular and kidney disease); successful periodontal therapy may have a positive impact on these factors. [lxvi]
- ☐ Consult with the Patient's Primary Care Provider (PCP) prior to oral interventions and/or surgery to avoid hypoglycemia and to consider its potential impact on the patient's ability to eat (e.g., delayed wound healing). [lxvii]
- ☐ Ensure the Electronic Dental Record is current with lab values and medications.
- ☐ Screen patients to determine if they are being evaluated by a PCP at least once a year. If not, encourage the patient to schedule an appointment or refer them to establish care with a PCP.
    - If not previously established, consider establishing referral pathways in Electronic Dental Record
- ☐ Screen patients for tobacco use. Provide tobacco cessation support to patients who use tobacco or refer to a PCP.
- ☐ Offer dental rehabilitation to restore adequate mastication for proper nutrition. [lxviii]
- ☐ Consider establishing and maintaining a disease registry of all patients with diabetes and periodontal disease to identify and close gaps in care. [lxix]

Eye Care Professionals and Clinics

- ☐ Follow the American Optometry Association's most recent guidelines on eye care for patients with diabetes, or more up to date clinical guidance [lxx]
- ☐ Develop a system to identify patients with diabetes.

- ☐ Provide early detection and timely treatment of diabetes-related eye diseases such as diabetic retinopathy, glaucoma, and cataracts.[lxxi]
- ☐ Educate patients with diabetes on the effectiveness of healthy eating and exercise in delaying the onset or preventing type 2 diabetes, and the benefits of glucose and blood pressure control in reducing risk of onset and progression of diabetic retinopathy.
- ☐ Collaborate with other members of the healthcare team to ensure comprehensive diabetes care to allow for timely adjustments to treatment plans and facilitating the sharing of essential information about the patient's health status.
- ☐ Screen patients for tobacco use. Provide tobacco cessation support to patients who use tobacco or refer to a Primary Care Provider (PCP).

Review of the Evidence

The workgroup utilized the Strength of Recommendation Taxonomy (SORT) methodology that allows reviewers to rate individual studies, emphasizing patient-oriented outcomes.[lxxii] The methodology also allows recommendations from guidelines to be graded from A to C based on strength of evidence and individual studies from 1-3 based on quality, quantity, and consistency of the evidence.[1] See full methodology here. While this taxonomy is useful for determining quality of published evidence, the workgroup also recognizes the limitations of published evidence as the groups with the most disparities in diabetes outcomes often reflect groups exploited by or historically neglected from clinical research. Therefore, guidelines are also informed by expert opinion.

Extensive clinical guidance for the identification and management of diabetes have been published, including recommendations from the American Diabetes Association (ADA) and the U.S. Preventative Services Task Force (USPSTF). The ADA Standards of Care have been updated annually since 1989, and their most recent Standards of Care were published in January of 2024. Among the many updates, the ADA revised guidelines to support the use of person-first and inclusive language, screening for diabetes distress at least annually, emphasizing the use of devices for diabetes, further evidence supporting weight management to prevent onset of type 2 diabetes, COVID immunization guidance for people with diabetes, and many other updates. Overall, the ADA Standards of Care provide guidance on identification and diagnosis of prediabetes and diabetes, comprehensive assessment, developing diabetes prevention and/or management plans including medication therapy, management of comorbidities, self-management and lifestyle modifications, diabetes technology, planning for routine diabetes management visits, population health management of diabetes and diabetes advocacy.

The clinical recommendations for type 1 and type 2 diabetes are slightly different, including recommendations regarding pharmacologic management and glycemic monitoring. People with type 1 diabetes typically need insulin to replace their bodies lack of this endogenous hormone, while people with type 2 diabetes can often be managed on oral medications until their blood sugar becomes uncontrolled or other factors require them to begin insulin. Some may never need insulin injections to control their glycemic status. Also, people with type 1 diabetes are more likely to be diagnosed earlier in life than type 2, and individuals with type 1 diabetes are more at generally more at risk for developing diabetic ketoacidosis. However, the prevalence of type 2 diabetes in children and adolescence has been increasing over the past several decades in the U.S., and now incidence of type 2 diabetes is twice the rate of type 1 diabetes in some non-White racial and/or ethnic groups.[lxxiii] It is recommended for both people with type 1 and type 2 diabetes to regularly monitor their blood glucose, but as people with type 1 diabetes typically use insulin injections to manage their blood glucose, they often also must monitor their glycemic status more frequently during the day than some individuals with prediabetes or type 2 diabetes may need to. The Standards of Care January 2024 update includes new guidance around screening and prevention of type 1 diabetes with FDA approval of injectable Tzield (teplizumab).[lxxiv]

This report offers a few clinical recommendations that extend beyond the ADA clinical guidelines. The workgroup recommends use of a multidisciplinary care team primarily made up of a clinical pharmacist, registered nurse and registered dietician nutritionist that is supported by the primary care provider. A

[1] The workgroup was not able to utilize the SORT methodology for every piece of evidence brought before the workgroup due to time constraints; when available, the evidence grade is next to the citation in the evidence table.

few studies have indicated that a team like this can efficiently manage care for patients with diabetes, especially in rural and medically underserved communities.

The Chronic Care Model is a model that highlights key elements in health systems that encourage high-quality chronic disease management. It is most effective at improving glycemic control when multiple components are implemented together.[lxxv] The six core elements include:

- Health delivery systems design: moving towards proactive planned visits through a team-based approach, providing case management services for complex patients,
- Self-management support: empowering and preparing patients to manage their health care and individualizing care plans that consider unique preferences and characteristics.
- Decision support: promoting care consistent with scientific data and patient preferences, including embedding evidence-based guidelines into daily practice, and using proven education methods.
- Clinical Information Systems: organizing data to facilitate efficient and effective care, including using registries providing the ability to use timely reminders, identify subpopulations in need of proactive care, share information with patients and providers and monitor performance.
- Community Resources and policies: forming partnerships with community organizations and encouraging patients to participate in effective community programs.
- Quality-oriented Health Systems: business plans that reflect commitment to applying CCM, including promoting improvement efforts, transparent handling of errors and quality problems, incentivizing quality care and facilitating care coordination across organizations.

Healthcare delivery systems create workflows, protocols and procedures that reflect up to date evidence-based clinical practice. The workgroup identified resources to support the development of these protocols. For example, the American Journal of Managed Care offers recommendations for the development of clinical care pathways in diabetes management linked here. An ambulatory care pathway example from UW Valley Medical Center can be found here.

The Healthcare Effectiveness Data and Information Set (HEDIS) requires collection of several metrics to evaluate comprehensive diabetes care for patients 18-75 with type 1 or type 2 diabetes.[lxxvi] These include Glycemic status assessment (GSD) which measures the percentage of members with HgA1c <8.0% or >9.0% during the measurement period, eye exam for patients with diabetes (EED) which measures the percentage of members who had a retinal exam, blood pressure control (BPD) which measures the percentage of members whose blood pressure was under 140/90 during the measurement year, kidney health evaluation (KED) which measures the percentage of members 18-85 years of age that received a kidney health evaluation (eGFR AND urine albumin-creatinine ratio) during the measurement year, and statin therapy for patients with diabetes (SPD) which measures the percentage of members without atherosclerotic cardiovascular disease (ASCVD) who were dispensed at least one statin of any intensity AND remained on the statin for at least 80% of the treatment period. As of this report, not all these measures are utilized in contracts between purchasers and payors in Washington state.

Other HEDIS metrics relevant to diabetes care include Adult Immunization Status (AIS) that measures the percentage of members 19+ who are up to date on their immunizations for influenza, tetanus, and diphtheria (Td) or tetanus, diphtheria, and acellular pertussis (Tdap), zoster and pneumococcal. The ADA

also recommends Hepatitis B and HPV vaccinations for certain age groups. HEDIS also collects information regarding social needs screening and intervention (SNS-E) which measures members of any age that receive screening with a validated tool and intervention within 30 days for needs related to food, transportation, or housing. Both AIS and SNS-E are stratified by race and ethnicity, which facilitates identification and tracking of disparities.

See the evidence table for a full list of reviewed articles that contributed to the development of these guidelines.

Future Research and Practice

While the Bree Collaborative convenes private and public healthcare stakeholders and provides clinical guidelines to support the delivery of high-quality, affordable healthcare, preventing progression of diabetes and managing care for people with diabetes is a multifaceted challenge that requires the collective efforts of various sectors outside of healthcare. Traditionally the healthcare system has focused solely on the individual factors that influence health, such as diet, exercise, and family medical history, among others. Research on the Social Determinants of Health (SDOH) recognized the impact of socioeconomical and environmental factors on individual and population health, which hold true for diabetes. [lxxvii]

Food insecurity can contribute to the development of type 2 diabetes. Nutritious foods can be expensive, and cheaper options tend to be lower quality with high sugar, fat, and salt content. [lxxviii] For people with diabetes, food insecurity affects the ability to manage blood sugar leading to higher HgA1c levels, diabetes complications and hospitalizations, and impacts mental health; also, skipping meals due to inability to afford food can increase risk for hypoglycemia. Food deserts, or areas with limited availability of fresh and healthy food options, make it more difficult for individuals in those areas to access healthy options; food deserts are more likely to be in areas of poverty, which widens disparities in diabetes incidence and management by socioeconomic status and between different racial and ethnic groups. Food deserts have also been associated with poor HgA1c control, but future research is needed to investigate the mechanisms by which this association occurs and potential interventions to influence access to healthy foods, such as business incentives for companies to establish locations in underserved areas or regulations to control the quality and cost of food sold.

Another area in need of further research is primary care quality and variation as new models emerge that are external to traditional healthcare delivery systems. Private organizations are increasingly providing access to medical care and visits; however, it is difficult to appraise the quality of these services when their processes are not transparent, and the evidence of their effectiveness is not published, or peer reviewed. The Bree Collaborative published guidance on the components of Primary Care (found here) including accountability, first contact, comprehensiveness, continuity, coordination and appropriateness of care including for behavioral health conditions; to be considered high quality primary care, all these components must be met at a minimum. Future research should investigate the quality of care delivered through contracts with private organizations, such as retailers, to determine their alignment with primary care tenets and identify potential interventions to ensure high quality primary care delivery.

Finally, to encourage and facilitate team-based care, organizations and systems will need to develop the infrastructure to support sharing of information across settings and clinicians. Dentistry and eye care are

critical to whole-person health for people with diabetes, and making population level data transparent across care settings is critical to improve quality of care and the uptake of high value services. **Public health and state agencies should consider pathways to promote sharing of health information and care collaboration between disciplines in the healthcare system that support holistic diabetes care.**

Evidence Table

Citation Number	Citation	Appraisal	Link	Reviewer Comments
1	American Diabetes Association. **Standards of Care in Diabetes**. 2024. American Diabetes Association. (2024). Standards of Care in Diabetes—2024. https://diabetes.org/standards-of-care-2024	Society Guideline	https://diabetes.org/standards-of-care-2024	American Diabetes Association Standards of Care
2	The White House. (2022). **White House National Strategy on Hunger, Nutrition, and Health** [PDF file]. https://www.whitehouse.gov/wp-content/uploads/2022/09/White-House-National-Strategy-on-Hunger-Nutrition-and-Health-FINAL.pdf	National Policy Statement	https://www.Whitehouse.gov/wp-content/uploads/2022/09/White-House-National-Strategy-on-Hunger-Nutrition-and-Health-FINAL.pdf	National strategy on hunger, nutrition and health – strategy to target diet related disease
3	Medicare.gov. Diabetes Self-Management Training. Accessed 10/27/23.	Medicare Policy	https://www.medicare.gov/coverage/diabetes-self-management-training	Medicare policy regarding coverage for diabetes education and management.
4	Briggs Early, K.,& Stanley, K. (2018). **Position of the Academy of Nutrition and Dietetics: The role of medical nutrition therapy and registered dietitian nutritionists in the prevention and treatment of Prediabetes and type 2 diabetes.** Journal of the Academy of Nutrition and Dietetics, 118(2), 343–353.	Society Guideline	https://www.jandonline.org/article/S2212-2672(17)31849-X/fulltext#secsectitle0015	Medical nutrition therapy is effective for preventing diabetes in patients with prediabetes and for managing glycemic status in patients with type 2 diabetes -> cover for 6 encounters within the first 6 months and as needed after: cover for medical nutrition therapy 1 encounter per every subsequent year
5	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 [Internet]. 2016 Nov 22;39(12):2126–40. Available from: http://care.diabetesjournals.org/content/39/12/2126	Society Position Statement	http://care.diabetesjournals.org/content/39/12/2126	People with diabetes require special attention to psychosocial health. Integration of screening and referral for mental health concerns is a vital part of whole-person care for people with diabetes.
Team Based Care - Nurses, Pharmacists, Nutritionists				
6	Greg Weeks, Johnson George, Katie Maclure, Derek Stewart. **Non- medical prescribing versus medical prescribing for acute and chronic disease management in primary and secondary care.** Cochrane Database Syst Rev. 2016 Nov 22;11(11):CD011227. PMID: 27873322	Tier 1	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/27873322	Meta analysis evaluating various combinations of physicians and nurses, pharmacists, allied health professionals, and physician assistants substituting for doctors in a prescribing role. Outcomes included systolic blood pressure, glycated hemoglobin, low-density lipoprotein, medication adherence, patient satisfaction, and health-related quality of life. Medical economics not studied. --> High quality study suggests that nurses and pharmacists with other non-physician providers can achieve comparable outcomes to physicians for diabetes control, blood pressure, and lipid disorders
7	Amanda W Benedict, Michele M Spence, John L Sie, et al. **Evaluation of a Pharmacist-Managed Diabetes Program in a Primary Care Setting Within an Integrated Health Care System.** J Manag Care Spec Pharm. 2018 Feb;24(2):114-122. PMID: 29384029	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Large retrospective cohort study of patients with diabetes with A1C greater than 8% comparing Pharmacist managed diabetes with usual care. Pharmacist based program achieved greater A1c reduction and target of A1c of less than 8% more rapidly than patients receiving usual care. --> Supports the inclusion of a pharmacist in the primary care team treating type 2 diabetes

8	Joshua Sullivan, Bryan Paul Jett, Mark Cradick, Jeffrey Zuber. **Effect of Clinical Pharmacist Intervention on Hemoglobin A1C Reduction in Veteran Patients With Type 2 Diabetes in a Rural Setting.** Ann Pharmacother. 2016 Dec;50(12):1023- 1027. PMID: 27497068	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Retrospective study of veteran population in a rural setting with type two diabetes managed by a Clinical Pharmacist. Patients serving as their own controls. --> "Pharmacist interventions at a rural, outpatient clinic had a statistically significant impact on A1C reduction in veterans with T2DM."
9	Sandra Leal, Jon J Glover, Richard N Herrier, Anthony Felix. **Improving quality of care in diabetes through a comprehensive pharmacist-based disease management program.** Diabetes Care. 2004 Dec;27(12):2983-4. PMID: 15562220	2/B	https://diabetesjournals.org/care/article/27/12/2983/26557/Improving-Quality-of-Care-in-Diabetes-Through-a	Study of 199 patients in a federally qualified health center. Patient population was comprised most of indigent, Spanish speaking, sometimes transient patients with primarily type 2 diabetes. A bi-lingual PharmD was the primary care provider for the patient's diabetes, hypertension and hyperlipidemia. Patients served as their own controls. Patients were followed for 274 plus or minus 141 days. Statistically significant results included improvement in total cholesterol, triglycerides, HDL, A1C, and blood pressure. --> Short term study of indigent, Spanish speaking patients
10	Sherilyn K D Houle, Anderson W Chuck, Finlay A McAlister, Ross T Tsuyuki. **Effect of a pharmacist-managed hypertension program on health system costs: an evaluation of the Study of Cardiovascular Risk Intervention by Pharmacists-Hypertension (SCRIP- HTN).** Pharmacotherapy. 2012 Jun;32(6):527-37. PMID: 22552863	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Randomized study of 227 patients with diabetes and uncontrolled hypertension. Experimental group received follow-up with pharmacist- nurse team every 6 weeks. Control group did not. Patients receiving pharmacist-nurse intervention had a greater mean reduction in systolic blood pressure in comparison to controls. An economic model showed cost savings at 6 months and 2 years with the pharmacist-nurse program. --> Study suggests that a pharmacist-nurse intervention model is clinically and financially effective.
11	Dana Henderson, Hannah Salmons, Paris Winston, Deborah A Koehn. **Systematic Review of the Frequency of Registered Dietitian- Nutritionist Intervention in the Primary Care Setting for Diabetes Self- Management Education for Patients with Type II Diabetes.** Curr Diabetes Rev. 2022 Jul 21. PMID: 35899952	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Systematic review suggests that compared to usual care more frequent contact with a registered dietician/nutritionist is associated with improved diabetes control. Study lacks statistics to quantitatively evaluate the study, is restricted to short term studies and includes only 7 citations. --> Acknowledging substantial shortcomings study supports regular contact with registered dietician/nutritionist to improve diabetes control.
12	Marion J Franz, Janice MacLeod, Alison Evert, et al. **Academy of Nutrition and Dietetics Nutrition Practice Guideline for Type 1 and Type 2 Diabetes in Adults: Systematic Review of Evidence for Medical Nutrition Therapy Effectiveness and Recommendations for Integration into the Nutrition Care Process.** J Acad Nutr Diet. 2017 Oct;117(10):1659- 1679. PMID: 28533169	Society Guideline	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Systematic review of 60 citations focused on the effectiveness of diabetes medical nutritional therapy. Paper presented 30 diabetes nutritional practice guideline recommendations for adults with type 1 or type 2 diabetes. Article recommends that registered dietician nutritionists should implement 3 encounters during the first 6 months following diagnosis with frequency of subsequent visits determined by individualized assessment. --> Supports the need for registered dietitian nutritionist interventions as part of diabetes management.

13	Kathaleen Briggs Early, Kathleen Stanley. **Position of the Academy of Nutrition and Dietetics: The Role of Medical Nutrition Therapy and Registered Dietitian Nutritionists in the Prevention and Treatment of Prediabetes and Type 2 Diabetes.** J Acad Nutr Diet. 2018. Feb;118(2):343-353. PMID: 29389511	Policy Statemen t of the Academy of Nutrition and Dietetics	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Policy statement from professional society regarding participation of registered dietician nutritionists in the management of obesity, prediabetes, and type 2 diabetes. --> Promotes the role of registered dietician nutritionists in the management of diabetes.
14	Perri A Morgan, Valerie A Smith, Theodore S Z, Berkowitz, et al. **Impact of Physicians, Nurse Practitioners, And Physician Assistants On Utilization And Costs For Complex Patients.** Health Aff (Millwood). 2019 Jun;38(6):1028-1036. PMID: 31158006	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Retrospective cohort study of patients with diabetes treated in a medical home model comparing nursing practitioners, physician assistants and physicians as the primary care provider. Patients managed by NPs and PAs had lower costs. Physician group had higher costs associated with ER and inpatient services. --> "This study suggests that NPs and PAs can effectively manage primary care for complex patients with diabetes without increasing total care costs."
16	Phoebus N Madianos, Panagiotis A Koromantzos. **An update of the evidence on the potential impact of periodontal therapy on diabetes outcomes.** J Clin Periodontol. 2018 Feb;45(2):188-195. PMID: 29277978	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Update of previous systematic review aimed at determining the effect of periodontal care on diabetes control. Scaling and root planning to manage periodontal disease was associated with a statistically significant improvement of diabetes control at 6 months. -- > Supports the conclusion the periodontal care improves diabetes control.
17	Filippo Graziani, Stefano Gennai, Anna Solini, Morena Petrini. **A systematic review and meta-analysis of epidemiologic observational evidence on the effect of periodontitis on diabetes An update of the EFP-AAP review.** J Clin Periodontol. 2018 Feb;45(2):167-187. PMID: 29277926	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Systematic review and meta- analysis investigating the impact of periodontitis on diabetes control. --> Study has methodological limitations suggests an association between periodontitis and higher levels of A1c.
18	M Brooke Herndon, Barbara Gladders, Gavin Welch, et al. **Visit Frequency for Patients with Type-2 Diabetes Varies More by Organization than by Glucose Control: a Retrospective Cohort Study**. J Gen Intern Med. 2020 Feb;35(2):599-602. PMID: 31792858	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7018902/	"Retrospective cohort study of ""103,220 adults with type-2 diabetes receiving care at nine healthcare organizations within the High Value Healthcare Collaborative (HVHC) between October 2012 and September 2014"" measuring the association between diabetes control and ambulatory visit frequency. Among the 14 healthcare delivery systems the frequency of visit rate ranged from 2.0-5.4. Authors found no correlation with disease severity and frequency of visits. Study does not control for social determinants of health, type of provider delivering care, format of care (such as in-person or telemedicine visits), or general health status. --> Patients with type 2 diabetes receiving care at major medical centers have a visit frequency ranging from 2.0-5.4 per year."
Patient Centered Medical Home				
19	Nathan D Shippee, Michael Finch, Douglas Wholey. **Using Statewide Data on Health Care Quality to Assess the Effect of a Patient- Centered Medical Home Initiative on Quality of Care.** Popul Health Manag. 2018 Apr;21(2):148-154. PMID: 28609248	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	3 year, statewide comparison of patients with or without treatment in a medical home model. Study included over 400 clinics who could chose whether or not to enroll as a medical home. Over 300,000 patients in both control and experimental groups. Populations treated in a patient-centered medical home had improved diabetes care. --> Supports the benefit of patient center medical homes for treatment of diabetes.

20	Heidi S Kinsell, Allyson G Hall, Jeffrey S Harman, Sweta Tewary, Andrew Brickman. **Impacts of Initial Transformation to a Patient-Centered Medical Home on Diabetes Outcomes in Federally Qualified Health Centers in Florida.** J Prim Care Community Health. 2017 Oct;8(4):192-197. PMID: 29161972	2/B	file://vmfs- users.vmad.v mmc.org/use rs/libmes/Desktop/Kinsell. pdf	Observational cohort study, done from 2010-2012, of 14136 patients receiving care in a federally qualified health center in Florida according a patient center medical home model. Odds ratio indicated improvement in diabetes control. --> Suggests patient centered medical home improved diabetes control in "vulnerable patients".
21	Daniel D Maeng, Thomas R Graf, Duane E Davis, Janet Tomcavage, Frederick J Bloom Jr. **Can a patient-centered medical home lead to better patient outcomes? The quality implications of Geisinger's ProvenHealth Navigator.** Am J Med Qual. 2012 May- Jun;27(3):210-6. PMID: 21852292	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Study shows reduced odds ratio of amputation or end renal disease after conversion of usual care to a patient centered medical home. --> Supports care delivered in a patient centered medical home model
22	Lisa S McManus, Karen A Dominguez- Cancino, Michele K Stanek, Juan M Leyva-Moral, et al. **The Patient-centered Medical Home as an Intervention Strategy for Diabetes Mellitus: A Systematic Review of the Literature.** Curr Diabetes Rev. 2021;17(3):317-331. PMID: 33231158	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Systematic review of 24 citations showed inconclusive results of the effectiveness of the patient center medical home. Methodological challenge included lack of universal definition regarding patient center medical home. --> Inconclusive study on efficacy of patient center medical home.
	Bodenheimer T, Wagner EH, Grumbach K. **Improving Primary Care for Patients With Chronic Illness.** JAMA. 2002;288(14):1775–1779. doi:10.1001/jama.288.14.1775		**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Systematic review of studies of diabetes care with features of the chronic care model. 39 studies were reviewed with more than 200 practices and involving 48,000 patients. 32/39 studies found that one intervention based on the chronic care model improved process or outcome measures for diabetes. -> supports the conclusion that Chronic Care Model components (self-management, decision support, delivery system design and clinical information systems)
Medically Underserved Populations				
23	Sarah Ray, James Lokken, Colleen Whyte, Amanda Baumann, Michael Oldani. **The impact of a pharmacist-driven, collaborative practice on diabetes management in an Urban underserved population: a mixed method assessment.** J Interprof Care. 2020 Jan-Feb;34(1):27-35. PMID: 31381470	2/B	**Not available without a subscription. Please contact your local library for assistance accessing the article.**	Observational study of 99 patients in an underserved, urban community managed by a pharmacist driven team. Patients had improved diabetes control and associated healthcare indicators. --> Supports the conclusion that Pharmacist driven care improves indicators of diabetes control.
24	Shaheen Shiraz Kurani, Michelle A Lampman, Shealeigh A Funni, et al. **Association Between Area-Level Socioeconomic Deprivation and Diabetes Care Quality in US Primary Care Practices.** JAMA Netw Open. 2021 Dec 1;4(12):e2138438. PMID: 34964856	2/B	https://www .ncbi.nlm.nih .gov/pmc/art icles/pmid/3 4964856/	Cross sectional study of patients receiving care in 75 Mayo operated Midwest clinics. -->Study concluded "patients living in more deprived and rural areas were significantly less likely to obtain high quality diabetes care."

25	Jessica H Fan, Sarah A Lyons, Melody S Goodman, Melvin S Blanchard, Kimberly A Kaphingst. **Relationship Between Health Literacy and Unintentional and Intentional Medication Nonadherence in Medically Underserved Patients With Type 2 Diabetes.** Diabetes Educ. 2016 Apr;42(2):199-208. PMID: 26763625	2/B	https://www.ncbi.nlm.nih.gov/pmc/art icles/pmid/2 6763625/	Cross sectional study of patients with limited health literacy showing correlation with unintentional nonadherence to medical care. --> Study supports the conclusion that low literacy impairs diabetes control.
26	Adam Taylor, Fareeha Siddiqui. **Bringing Global Health Home: The Case of Global to Local in King County, Washington.** Ann Glob Health. 2016 Nov-Dec;82(6):972-980. PMID: 28314499	3/C	https://annalsofglobalhealth.org/articles/10.1016/j.aogh.2016.11.006	Descriptive report describing strategies to support management of chronic disease in underserved communities in Western Washington. --> This paper may provide some direction to address health disparities in underserved communities in our state.
27	Soim Park, Wayne W, Zachary, Joel Gittelsohn, et al. **Neighborhood Influences on Physical Activity Among Low-Income African American Adults With Type 2 Diabetes Mellitus.** Diabetes Educ. 2020 Apr;46(2):181-190. PMID: 32100614	3/C	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/32100614/	Data collected through focus groups and interviews concluded safety of local neighborhoods reduced opportunity for regular exercise. --> Neighborhood environments effect the ability of residents to exercise safely.
28	Jennifer A Andersen, Dylan Scoggins, Tzeyu Michaud, et al. **Racial Disparities in Diabetes Management Outcomes: Evidence from a Remote Patient Monitoring Program for Type 2 Diabetic Patients.** Telemed J E Health. 2021 Jan;27(1):55-61. PMID: 32302521	2/B	Not available without a subscription. Please contact your local library for assistance accessing the article.	Retrospective cohort study comparing white and black patients with type 2 diabetes managed with a telemedicine program following hospital discharge. Program reduced gap between black and white patients in terms of diabetes control though black patients continued to have less favorable results. --> Telemedicine reduces but does not eliminate the racial difference in diabetes control.
Affordability				
29	Utibe R Essien 1 2, Balvindar Singh 3, Gretchen Swabe, et al. **Association of Prescription Co- payment With Adherence to Glucagon-Like Peptide-1 Receptor Agonist and Sodium- Glucose Cotransporter-2 Inhibitor Therapies in Patients With Heart Failure and Diabetes.** JAMA Netw Open. 2023 Jun 1;6(6):e2316290. PMID: 37261826	2/B	https://www.ncbi.nlm.nih.gov/pmc/art icles/PMC10 236237/	Retrospective cohort study based on claims data. Adherence to GLP1-RA or SGLT2i was highest among individuals with low copay. --> Supports the conclusion that lower out of pocket expenses improve adherence to important diabetes medications.
Telehealth/Telephone				
30	S Mimi Mukherjee, Dana DelDotto, Aesha Patel, Matthew A Silva. **Pharmacist telehealth in an underserved urban population with type 2 diabetes mellitus.** Res Social Adm Pharm. 2023 Jul 23;S1551-7411(23)00328-5. PMID: 37507339	2/B	Not available without a subscriptions . Please contact your local library for assistance.	Retrospective observational cohort study of patients with uncontrolled type 2 diabetes managed by a clinical pharmacist with telephone visits. Most appointments were kept, median A1c decreased over 5 months, and approximately a quarter of patients achieved an A1c less than 8%. A1c improvement was more likely in patients with worse diabetes control and those who kept their visits. --> Telephonic visits to patients with uncontrolled type 2 diabetes can improve diabetes control

31	Matthew J Crowley, Phillip E Tarkington, Hayden B Bosworth, et al. **Effect of a Comprehensive Telehealth Intervention vs Telemonitoring and Care Coordination in Patients With Persistently Poor Type 2 Diabetes Control: A Randomized Clinical Trial.** JAMA Intern Med. 2022 Sep 1;182(9):943-952. PMID: 35877092	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9315987/	Randomized prospective cohort study. 200 patients with poorly controlled type 2 diabetes received nurse delivered telehealth over 12 months. Control group received telemonitoring and care coordination, experimental group received telemonitoring, self-management support, diet/activity support, medication management, and depression support. Experimental group had better diabetes control and other positive results at a cost of $1519 per patient per year. --> Enhanced nurse delivered telemedicine improves diabetes care in patients with poorly controlled type 2 diabetes
32	Russyan Mark S Mabeza, Kahtrel Maynard, Derjung M Tarn. **Influence of synchronous primary care telemedicine versus in-person visits on diabetes, hypertension, and hyperlipidemia outcomes: a systematic review.** BMC Prim Care. 2022 Mar 21;23(1):52. PMID: 35313804	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8936383/	Systematic review of 1724 citations with 7 publications judged to be adequate to assess differences in diabetes, hypertension, and hyperlipidemia outcomes between in person visits and telemedicine. Telemedicine resulted in improved control of hemoglobin A1c at 6 and 12 months but no difference in blood pressure or lipid values. --> Study supports the conclusion that telemedicine is equal to or superior to in- person visits in the management of diabetes.
Community Outreach				
33	Sabina Paglialunga, Ryan Bond, Sharon H Jaycox. **Evaluation of HbA1c screening during outreach events for prediabetes subject recruitment for clinical research.** Trials. 2018 Jan 22;19(1):60. PMID: 29357915	3/C	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/29357915/	Prospective observational study assessing outreach events aimed at identification of patients with prediabetes for clinical research study, in a population which was primarily Hispanic. 391 individuals participated in free HbA1c screening. "The overall prevalence of prediabetes and type2 diabetes, based on HbA1c values, were 33.0% and 14.8%, respectively." 17% of individuals contacted expressed interest in participating in a clinical research study.--> Outreach events can identify previously undiagnosed type 2 diabetes and prediabetes in patients. Proportion of patients with a previous diagnosis of diabetes was undetermined.
34	Gina M Wingood, Danielle Lambert, Tiffaney Renfro, et al. **A Multilevel Intervention With African American Churches to Enhance Adoption of Point-of- Care HIV and Diabetes Testing, 2014-2018. A**m J Public Health. 2019 Feb;109(S2):S141- S144. PMID: 30785798	3/C	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/30785798/	Retrospective observational study describing implementation strategies to screen church attendees for diabetes. Implementation involved a multi-tiered approach. Of 20 churches recruited 6 held health fair events as well as social justice activities. Of 179 participants receiving diabetes point of care testing 58.3% had test results indicating diabetes or prediabetes. The proportion of patients with a previous diagnosis of diabetes was undetermined and no follow up plan for patients who screened for diabetes was noted. --> Church based screening can identify patients with prediabetes or diabetes. Study does not include plans for follow up medical care.
35	Hill C, Zurakowski D, Bennet J, Walker- White R, Osman JL, Quarles A, Oriol N. **Knowledgeable Neighbors: a mobile clinic model for disease prevention and screening in underserved communities**. Am J Public Health. 2012 Mar;102(3):406-10. doi: 10.2105/AJPH.2011.300472. Epub 2012 Jan 19. PMID: 22390503; PMCID: PMC3487671.		https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3487671/	14% of screened individuals had undetected elevated blood glucose, and most had health insurance -> Mobile health clinics are a promising tool to deliver proven cost-effective chronic disease prevention interventions in underserved areas.
36	Osorio M, Ravenell JE, Sevick MA, et al. **Community-Based Hemoglobin A1C Testing in Barbershops to Identify Black Men With Undiagnosed Diabetes**		https://jamanetwork.com/journals/jamainternalm	Evaluation of a community-based approach to diabetes screening in Black-owned barbershops; point of care HgA1c tests were conducted, and participants with an abnormal results were counseled on diet and

	JAMA Intern Med. 2020;180(4):596– 597. doi:10.1001/jamainternmed.2019.6867		edicine/fullar ticle/275974 1	exercise management, medical management and provided contact information for local primary care clinics. 9% of participants had an HgA1x of 6.5% or higher, and 28.3% had HgA1c 5.7-6.4% -> community-based screening for prediabetes and diabetes can identify individuals with diabetes or prediabetes in high-risk populations
Shared Medical Appointments				
37	Edelman D, Gierisch JM, McDuffie JR, Oddone E, Williams JW Jr. **Shared medical appointments for patients with diabetes mellitus: a systematic review**. *J Gen Intern Med*. 2015;30(1):99-106. doi:10.1007/s11606- 014-2978-7		Shared medical appointment s for patients with diabetes mellitus: a systematic review - PubMed (nih.gov)	Systematic review of 1,172 citations with 25 publications meeting criteria for inclusion for comparison of SMA interventions with usual care. SMAs varied in length, frequency and in between care coordination. Led by physician or nurse practitioner with clinical pharmacist and registered nurses. SMA improved HgA1c and systolic blood pressure with no difference in LDL cholesterol. -> supports conclusion that SMAs can improve HgA1c control and blood pressure control
38	Papadakis A, Pfoh ER, Hu B, Liu X, Rothberg MB, Misra-Hebert AD. **Shared Medical Appointments and Prediabetes: The Power of the Group.** Ann Fam Med. 2021 May-Jun;19(3):258-261. doi: 10.1370/afm.2647. PMID: 34180846; PMCID: PMC8118487.		https://www.ncbi.nlm.nih.gov/pmc/art icles/PMC8118487/#:~:te xt=Shared%20medical%20 appointments%20are%20 group,discussion%20aroun d%20a%20common%20co ndition.&text =In%20type %202%20diabetes%2C%20shared,case s%20more%20than%20us ual%20care	Retrospective cohort analysis comparing patients with prediabetes attending shared medical appointments versus usual care. Those who went to shared medical appointments instead of usual care had improvement in weight, reduction in HgA1c and blood pressure -> shared medical appointments can be effective for treating prediabetes and preventing diabetes
Electronic Data Systems/Alert Systems				
39	Cebul RD, Love TE, Jain AK, Hebert CJ. **Electronic health records and quality of diabetes care.** N Engl J Med. 2011 Sep 1;365(9):825-33. doi: 10.1056/NEJMsa1102519. PMID: 21879900.		Electronic Health Records and Quality of Diabetes Care | NEJM	retrospective cohort of PCPs from seven diverse healthcare organizations publicly reporting quality standards for adults with diabetes. Composite standards for diabetes care were 35.1 percentage points better at EHR sites than paper- based sites, and achievement of composite standards for outcomes was 15.2 percentage points higher than paper-based sites, regardless of insurance type. -> EHR use supports higher quality diabetes care
40	Reed M, Huang J, Graetz I, Brand R, Hsu J, Fireman B, Jaffe M. **Outpatient electronic health records and the clinical care and outcomes of patients with diabetes mellitus**. Ann Intern Med. 2012 Oct 2;157(7):482-9. doi: 10.7326/0003-4819-157-7-201210020-00004. PMID: 23027319; PMCID: PMC3603566.		Outpatient Electronic Health Records and the Clinical Care and Outcomes of Patients With Diabetes Mellitus - PMC (nih.gov)	quasi-experimental design across 17 medical centers comparing use of electronic health record against paper- based records. Use of HER was associated with improvement in treatment intensification after HgA1c >/= 9%, uncontrolled LDL, and increase in 365 day retesting of HgA1c especially among those with the worst diabetes control -> EHR use support quality diabetes care, especially for unmanaged diabetes
41	Lessing SE, Hayman LL. **Diabetes Care and Management Using Electronic Medical Records: A Systematic Review.** J Diabetes Sci Technol. 2019 Jul;13(4):774-782. doi: 10.1177/1932296818815507. Epub 2018 Dec 17. PMID: 30556418; PMCID: PMC6610600.		Diabetes Care and Management Using Electronic Medical Records: A Systematic Review - PMC (nih.gov)	systematic review that sought to evaluate discrepancies in EHR research; decision support tools that alert providers of drug interaction, communication tools to keep patients and care teams informed in process, and tracking without over testing -> health systems should consider use of EHRs with decision support tools, communication and tracking capabilities embedded within their electronic systems
42	O'Connor PJ, Sperl- Hillen JM, Fazio CJ, Averbeck BM, Rank BH, Margolis KL. **Outpatient diabetes clinical decision support: current status and future directions**. Diabet Med. 2016 Jun;33(6):734-41. doi: 10.1111/dme.13090. PMID: 27194173; PMCID: PMC5642968.		Outpatient diabetes clinical decision support: current status and future directions - PMC (nih.gov)	review of key aspects of clinical decision support tools, impacts on measures like glucose, BP and lipid management, and recommendations for improvement of clinical decision support systems -> when using clinical decision support tools, integration of systems and implementation support are critical to their success and effectiveness

43	Smith SA, Shah ND, Bryant SC, Christianson TJ, Bjornsen SS, Giesler PD, Krause K, Erwin PJ, Montori VM; Evidens Research Group. **Chronic care model and shared care in diabetes: randomized trial of an electronic decision support system.** Mayo Clin Proc. 2008 Jul;83(7):747-57. doi: 10.4065/83.7.747. Erratum in: Mayo Clin Proc. 2008		Chronic care model and shared care in diabetes: randomized trial of an electronic decision support system - PubMed (nih.gov)	Prospective cohort study -> Specialty telemedicine did not significantly enhance the value of CCM in primary care
Food as Medicine/Food Insecurity				
44	Berkowitz SA, Karter AJ, Corbie-Smith G, Seligman HK, Ackroyd SA, Barnard LS, Atlas SJ, Wexler DJ. **Food Insecurity, Food "Deserts," and Glycemic Control in Patients With Diabetes: A Longitudinal Analysis**. Diabetes Care. 2018 Jun;41(6):1188-1195. doi: 10.2337/dc17- 1981. Epub 2018 Mar 19. PMID: 29555650; PMCID: PMC5961388.	2/B		This was a prospective cohort study. A random sample of patients with diabetes in a primary care network completed food insecurity assessment in 2013. Low physical food access at the census tract level was defined as no supermarket within 1 mile in urban areas and 10 miles in rural areas. HbA1c measurements were obtained from electronic health records through November 2016. Food insecurity is associated with higher HbA1c, but living in an area with low physical food access is not. Food insecurity screening and interventions may help improve glycemic control for vulnerable patients.
45	Beltrán S, Arenas DJ, Pharel M, Montgomery C, Lopez-Hinojosa I, DeLisser HM. **Food insecurity, type 2 diabetes, and hyperglycaemia: A systematic review and meta-analysis**. Endocrinol Diabetes Metab. 2022 Jan;5(1):e00315. doi: 10.1002/edm2.315. Epub 2021 Nov 2. PMID: 34726354; PMCID: PMC8754242	2/B		Food insecurity (FIS) is a major public health issue with possible implications for type 2 diabetes mellitus (T2DM) risk. We conducted a systematic review and meta-analysis to explore the association between FIS and T2DM. Despite multiple proposed mechanisms linking FIS to T2DM, integration of the available literature suggests FIS is not associated with clinically determined T2DM or increases in FBG or HbA1c among adult patients. -> further research is needed on the link between food insecurity and diabetes
46	Alexander R Chang, Lisa Bailey-Davis. **Food Is Medicine, but Are Produce Prescriptions?** Diabetes Care. 2023 Jun 1;46(6):1140-1142. PMID: 37220266	3/C	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/37220266/	Commentary that reviews models for food as medicine approach to managing diabetes care. Authors cites limitations of research in this area --> Food as medicine has face value but current research is inadequate to judge effectiveness
47	Levi R, Bleich SN, Seligman HK**. Food Insecurity and Diabetes: Overview of Intersections and Potential Dual Solutions**. Diabetes Care. 2023 Jun 24:dci230002. doi: 10.2337/dci23-0002. Epub ahead of print. PMID: 37354336.	3/C	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/37354336/	While there is good evidence that these programs can impact intermediate outcomes (dietary intake and food security), there is less consistent evidence about their capacity to impact BMI, glycemic control, and diabetes complications, particularly for food is-medicine interventions**. ->** Study does not show the benefit of produce prescriptions on the management of diabetes.
48	Kurt Hager, Peilin Shi, Zhongyu Li, et al. **Evaluation of a Produce Prescription Program for Patients With Diabetes: A Longitudinal Analysis of Glycemic Control.** Diabetes Care. 2023 Jun 1;46(6):1169-1176. PMID: 36812470	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/36812470/	Nonrandomized cohort study of --> Study does not show the benefit of produce prescriptions on the management of diabetes.
49	Silverman J, Krieger J, Kiefer M, Hebert P, Robinson J, Nelson K. **The Relationship Between Food Insecurity and Depression, Diabetes Distress and Medication Adherence Among Low-Income Patients with Poorly- Controlled Diabetes.** J Gen Intern Med. 2015 Oct;30(10):1476-80. doi: 10.1007/s11606-	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/25917659/	Secondary analysis of baseline data from 287 previously reported from the Peer Support for Achieving Independence in Diabetes study. "Food insecurity was associated with depression, diabetes distress, low medication adherence and worse glycemic control." Authors postulated that other factors including poor food choices contributed to higher mean A1c levels. --> Supports an adverse effect of food

	015-3351-1. Epub 2015 Apr 28. PMID: 25917659; PMCID: PMC4579205.			insecurity on diabetes control and raises the possibility that poor food choices may also be a contributing factor.
50	Knight CK, Probst JC, Liese AD, Sercye E, Jones SJ. **Household food insecurity and medication "scrimping" among US adults with diabetes**. Prev Med. 2016 Feb;83:41-5. doi: 10.1016/j.ypmed.201 5.11.031. Epub 2015 Dec 4. PMID: 26656403.	2/B	Not available without a subscription. Please contact your local library for assistance.	Cross sectional analysis of 3242 from the 2011 National Health Interview Survey. A substantial proportion of patients had some degree of food insecurity an among these individuals a substantial proportion "scrimped" on medications. --> Patients with food insecurity may also reduce their compliance to prescribed medications
51	Snailer, B. (2019). **Lowering HbA1c in Food Insecure Type 2 Diabetics through a Fruit and Vegetable Prescription Program.** (Master's thesis). University of Washington. Retrieved from https://digital.lib.washington.edu/researchworks/handle/1773/43699		https://digital.lib.washington.edu/researchworks/bitstream/handle/1773/43699/Snailer_washington_0250O_19683.pdf?sequence=1	a $10 increase in the average amount redeemed per month was associated with a 1.4% (p-value: 0.006; 95% CI: 0.5, 2.4) decrease in HbA1c. -> Fruit and veggie prescription programs can lower HgA1c in type 2 diabetes
52	Bryce R, Wolfson, Bryce JA, CohenBryce A, Milgrom N, Garcia D, Steele A, Yaphe S, Pike D, Valbuena F, Miller-Matero LR**. A pilot randomized controlled trial of a fruit and vegetable prescription program at a federally qualified health center in low income uncontrolled diabetics**. Prev Med Rep. 2021 May 31;23:101410. Doi: 10.1016/j.pmedr.202 1.101410. PMID: 34150472; PMCID: PMC8193138.		https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8193138/	Pilot RCT that randomized type 2 diabetes individuals to receive $10 per visit to buy fruit and vegetables from a farmers market. There was a slight decrease in HgA1c in the intervention group compared to the control group. -> fruit and veggie prescription programs can lower HgA1c in Type 2 diabetes
53	Bryce R, Guajardo C, Ilarraza D, Milgrom N, Pike D, Savoie K, Valbuena F, Miller- Matero LR. **Participation in a farmers' market fruit and vegetable prescription program at a federally qualified health center improves hemoglobin A1C in low income uncontrolled diabetics.** Prev Med Rep. 2017 Jun 27;7:176-179. doi: 10.1016/j.pmedr.201 7.06.006. PMID: 28702315; PMCID: PMC5496208.		https://pubmed.ncbi.nlm.nih.gov/28702315/	Prospective cohort study for prescription fruit and vegetable program for patients with type 2 diabetes and HgA1c > 6.5%. Program allotted $40 total ($10 per week). Significant decrease in HgA1c before and after program participation, but weight did not change. -> fruit and veggie prescription programs can lower HgA1c in Type 2 diabetes, especially for patients with uncontrolled HgA1c. However, there was no comparison group
54	Berkowitz SA, Delahanty LM, Terranova J, Steiner B, Ruazol MP, Singh R, Shahid NN, Wexler DJ. **Medically Tailored Meal Delivery for Diabetes Patients with Food Insecurity: a Randomized Cross- over Trial**. J Gen Intern Med. 2019 Mar;34(3):396-404. doi: 10.1007/s11606- 018-	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6420590/	Randomized cross-over clinical trial that delivered nutritious meals to the home 10 meals per week for 12 weeks and measured the healthy eating index, food insecurity and self- reported hypoglycemia. Key findings included lower food insecurity, improvements in HEI scores with increased consumption of vegetables, fruits and whole grains. -> home delivery of medically

	4716-z. Epub 2018 Nov 12. PMID: 30421335; PMCID: PMC6420590.			tailored meals improves food security for patients with diabetes.
School Based Care				
55	**Helping the Student with Diabetes Success: A Guide for School Personnel**	Society Guidelines	https://www 2.diabetes.or g/sites/defau lt/files/2022-11/School- guide-final- 11-16-22.pdf	The ADA's school guide assists school employees, school healthcare workers and parents support students with diabetes
56	Pike JM, Moore CM, Yazel LG, Lynch DO, Haberlin-Pittz KM, Wiehe SE, Hannon TS. **Diabetes Prevention in Adolescents: Co- design Study Using Human-Centered Design Methodologies**. J Particip Med. 2021 Feb 24;13(1):e18245. doi: 10.2196/18245.		https://www .ncbi.nlm.nih .gov/pmc/art icles/PMC79 46580/	Partnering with children, adolescents and parents to develop hands-on learning experiences and prevention programs is needed to reach at risk youth
Dental Care				
57	American Dental Association Diabetes Guidelines	Society Guidelines	https://www .ada.org/en/r esources/res earch/scienc e-and-research- institute/oral -health- topics/diabet es	Guidelines for Dental Care for patients with diabetes, including recommendations for the management of periodontal disease and diabetes and emergency management
58	Sanz M, Ceriello A, Buysschaert M, Chapple I, Demmer RT, Graziani F, Herrera D, Jepsen S, Lione L, Madianos P, Mathur M, Montanya E, Shapira L, Tonetti M, Vegh D. **Scientific evidence on the links between periodontal diseases and diabetes: Consensus report and guidelines of the joint workshop on periodontal diseases and diabetes by the International Diabetes Federation and the European Federation of Periodontology**. J Clin Periodontol. 2018 Feb;45(2):138-149. doi: 10.1111/jcpe.12808. Epub 2017 Dec 26. PMID: 29280174.	Society Guidelines	https://pubm ed.ncbi.nlm. nih.gov/2928 0174/	Establishment of periodontal therapy guidelines for patients with diabetes
59	Rees TD. Endocrine and metabolic disorders. In: Patton LL, Glick M, editors. **The ada practical guide to patients with medical conditions**. 2nd ed. Hoboken, NJ: John Wiley & Sons, Inc.; 2016. p. 71-99.		https://onlinelibrary.wiley.com/doi/book/10.1002/9781119121039	Evidence-based guide takes a patient-focused approach to help dentists deliver safe, coordinated oral health care for patients with medical conditions -> Ensure the electronic dental record is updated with current labs and medications
60	Tan SJ, Baharin B, Nabil S, Mohd N, Zhu Y. **Does glycemic control have a dose-response relationship with implant outcomes? A comprehensive systematic review** and meta-analysis. J Evid Based Dent Pract. 2021;21(2):101543.		https://www-sciencedirect-com.offcampus.lib.washington.edu/science/article/pii/S153233822100018X	HgA1c adversely affects bleeding on probing and marginal bone loss during dental implants -> HbA1c should be routinely documented for all diabetic patients receiving implants.
61	Naujokat H, Kunzendorf B, Wiltfang J. **Dental implants and diabetes mellitus-a systematic review.** International Journal of Implant Dentistry 2016 Dec;2(1):5			When HgA1c is under control, dental rehabilitation is safe -> dental rehabilitation should be offered to patients with diabetes
Risk-Adjustment				
62	Pei-Jung Lin, Elle Pope, Fang Liz Zhou. **Comorbidity Type and Health Care Costs in Type 2 Diabetes: A Retrospective Claims Database Analysis**. Diabetes Ther. 2018 Oct;9(5):1907-1918. PMID: 30097994	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/30097994/	A claims based, retrospective observation study of patients with type 2 diabetes comparing costs of care as a function of comorbidities. Authors found a relationship between combinations of comorbidities

				and cost of care. --> Cost of care varies with comorbidities
63	Shayla N M Durfey, Amy J H Kind, Roee Gutman, et al. **Impact Of Risk Adjustment For Socioeconomic Status On Medicare Advantage Plan Quality Rankings**. Health Aff (Millwood). 2018 Jul;37(7):1065-1072. PMID: 29985685	2/B	https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/29985685/	A CMS based study of patients receiving care through Medicare advantage plans "suggest that plans serving disadvantaged populations would have improved relative performance—and plans serving advantaged populations would have decreased relative performance—on blood pressure, cholesterol, and diabetes control measures if sociodemographic factors were included in risk-adjustment models." --> Sociodemographic factors influence cost and quality of care

Appendix A Person-Centered Care

Person-centered care starts with the use of non-stigmatizing language in written materials and in personal encounters. The American Association of Diabetes Educators (AADE) and the American Diabetes Association (ADA) offers a resource on Language Guidance for Diabetes-Related Research, Education and Practice here. Example: *a person living with diabetes* rather than *a diabetic.* [lxxx]

Abuse, violence, and other forms of trauma are widespread. The landmark 1998 study on adverse childhood experiences (ACEs) shows the high prevalence of ACEs across populations and links these experiences to a lifetime risk of poor health outcomes such as alcoholism, depression, heart disease, cancer, and obesity. [lxxxi] While children are highly sensitive to trauma, as seen through these later health impacts, trauma is also impactful for adults. Trauma-informed care is built on understanding a person's individual life experiences (e.g., asking what has happened to you) and the need for a clinical encounter to empower rather than re-traumatize a person. [lxxxii] The term was developed to integrate an understanding and strategies to mitigate trauma into delivery of behavioral health care and has since been adapted to physical health services and to delivery of integrated physical and behavioral health services. [lxxxiii] Many of the individual elements have been regularly used in the delivery of care for decades including addressing a person's distress, providing emotional support, encourages positive coping, but practice is ahead of literature and no best-practice guideline or widely used metric to track practitioner adherence to trauma-informed care exists. [lxxxiv]

Integrating trauma-related issues into counseling has had positive effects for survivors of physical and sexual abuse and shown reductions in mental health symptoms. [lxxxv] In many cases, providers operate under the assumption that someone has experienced trauma without directly asking whether this is so, a universal precautions approach. [lxxxvi] Key aspects include fostering a person's feeling of safety in the clinical encounter and developing a positive, trusting person-provider relationship. Trust is based in a one party being vulnerable, such as through having an illness or a lower level of knowledge and believing the other party will care for their interests. [lxxxvii] Fidelity, competency, honesty, and confidentiality are also dimensions of trust. [lxxxviii]

Establishing or reaffirming a person-provider relationship rests on developing interpersonal skills including being non-judgmental, providing reassurance, reaffirming that the person can and should ask questions, and talking about the person's goals of care or treatment. [lxxxix]This workgroup does not endorse a single guideline for trauma-informed care as this care philosophy cannot be operationalized through a checklist, although checklists can serve as a starting point.

Many organizations have developed toolkits to support trauma-informed care. The Centers for Disease Control and Prevention lists six principles to a trauma-informed approach: [xc]

- **Safety**: Staff and people receiving care feel physically and psychologically safe
- **Trustworthiness and transparency**
- **Peer support**: Those with lived experience of trauma as allies in recovery or using stories.
- **Collaboration and mutuality**: Decision making is shared, power differentials among staff or between providers and people receiving care is reduced.
- **Choice**: Empowerment and self-advocacy

- **Cultural, historical and gender issues**: Recognizing and addressing historical trauma, removing provider bias, care that is responsive to cultural background.

Moving to a trauma-informed approach in a clinical setting starts with being trauma-aware, as the Substance Abuse and Mental Health Services Association (SAMHSA) does through their four Rs: [xci]

- **Realization** that anyone may have experienced trauma and their behavior can be understood as a coping strategy to address past trauma.
- **Recognize** the signs of trauma.
- **Respond** to the above through using a universal precautions approach (e.g., all people are approached as though they have experienced trauma)
- **Resist Re-traumatization** by seeking to not create toxic or stressful environments.

While a universal trauma precautions approach negates the need for explicit trauma screening, some practices, such as pediatric practices, have found screening to be helpful. The American Academy of Pediatrics offers clinical assessment tools for people who have been exposed to violence here, including adverse childhood experiences. The signs of trauma are diverse, varying from person to person, including emotional, physical, cognitive, and behavioral signs, and may change over time. A non-exhaustive list includes: [xcii]

- Emotional: Emotional dysregulation anger, anxiety, sadness, and shame, numbing or detachment
- Physical: sleep disturbances; gastrointestinal, cardiovascular, neurological, musculoskeletal, respiratory, and dermatological disorders; urological problems; and substance use disorders
- Cognitive: Cognitive errors, misinterpreting situations dangerous, excessive, or inappropriate guilt, idealization, rationalization, delusions, intrusive thoughts, or memories
- Behavioral: reenactments, self-harm, or self-destructive behaviors

Appendix B. Bree Collaborative Members

Member	Title	Organization
June Altaras, MN, NEA-BC, RN	Executive Vice President, Chief Quality, Safety and Nursing Officer	MultiCare Health System
Patricia Egwuatu, DO	Family Medicine Physician	Kaiser Permanente
Gary Franklin, MD, MPH	Medical Director	Washington State Department of Labor and Industries
Colin Fields, MD, AAHIVS	Medical Director, Government Relations & Public Policy	Kaiser Permanente
Mark Haugen, MD	Family Medicine	Walla Walla Clinic
Dary Jaffe, MN, ARNP, NE-BC, FACHE	Senior Vice President Safety and Quality	Washington State Hospital Association
Sharon Eloranta, MD	Medical Director, Performance Measurement and Care Transformation	Washington Health Alliance
Norifumi Kamo, MD, MPP	Internal Medicine	Virginia Mason Franciscan Health
Angie Sparks, MD	Chief Medical Officer, Community Plan	UnitedHealthcare
Greg Marchand	Director, Benefits, Policy and Strategy	The Boeing Company
Kimberly Moore, MD	Associate Chief Medical Officer	Franciscan Health System
Carl Olden, MD	Family Physician	Pacific Crest Family Medicine, Yakima
Nicole Saint Clair, MD	Executive Medical Director	Regence BlueShield
Mary Kay O'Neill, MD, MBA	Partner	Mercer
Kevin Pieper, MD	Chief Medical Officer	Kadlac Medical Center
Susanne Quistgaard, MD	Medical Director, Provider Strategies	Premera Blue Cross
Colleen Daly, PhD	Director, Occupational Health, Safety and Research	Microsoft
Emily Transue, MD (Chair)	Chief Clinical Officer	Comagine Health
Judy Zerzan-Thul, MD	Medical Director	Washington State Health Care Authority

Appendix C. Diabetes Workgroup Charter

Problem Statement

Approximately 582,000 people in Washington (9.7% of adults), have been diagnosed with diabetes, with an estimated cost of $6.7 billion each year.[2] According to IHME data, diabetes is the 7th leading cause of death and impaired plasma glucose is the 3rd leading cause of death and disability in Washington.[3] At the same time, Washington state performs below the NCQA 25th percentile for blood sugar testing for people with diabetes.[4] Additionally, there are significant disparities in diabetes diagnosis and access to medication, with Black, Latinx/Hispanic, and AIAN having a higher prevalence of diabetes,[5]and low socioeconomic status has been associated with a lower utilization of insulin.[6]

Aim

Improve health care quality, outcomes, affordability, equity, and workforce sustainability related to diabetes care in Washington state.

Purpose

To propose practical and evidence-informed recommendations to the full Bree Collaborative on reducing the burden of diabetes in Washington state, including:

- Defining topic area and scope.
- Identifying at-risk populations and improving screening.
- Appropriate management and treatment for people with diabetes.
- Increasing equitable access to blood sugar testing, treatment, and medication.
- Collaborating across sectors and avoiding care silos.
- Ensuring skill-task alignment for the entire care team, including physicians, educators, and patients.
- Increasing efficacy of diabetes care and reducing administrative burden.
- Implementation of treatment protocols.
- Funding mechanisms for high-quality diabetes care

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[2] American Diabetes Association. 2021. The Burden of Diabetes in Washington. ADV. Accessed November 2022. Available: https://diabetes.org/sites/default/files/2021-10/ADV_2021_State_Fact_sheets_Washington.pdf

[3]Institute for Health Metrics and Evaluation. 2022. United States of America – Washington. IHME. Accessed November 2022. Available: https://www.healthdata.org/united-states-washington

[4] WHA Community Checkup. 2022. 2022 Community Checkup Report. Washington Health Alliance. Accessed November 2022. Available: https://www.wacommunitycheckup.org/media/67048/2022-community-checkup-report.pdf

[5] Washington State Department of Health. 2018. Washington State Health Assessment: Diabetes and Prediabetes. WA DOH. Accessed November 2022. Available: https://doh.wa.gov/sites/default/files/legacy/Documents/1000/SHA-DiabetesandPrediabetes.pdf

[6] Ding D & Glied S. 2022. Issue Brief: Disparities in the Use of Diabetes Medications: Widening Treatment Inequality by Race and Insurance Coverage. Commonwealth Fund. Accessed November 2022. Available: https://www.commonwealthfund.org/publications/issue-briefs/2022/jun/disparities-use-new-diabetes-medications-treatment-inequality

Bree Collaborative Diabetes Workgroup
Adopted January 24th, 2024

Duties & Function

The workgroup will:

- Research evidence-informed and expert-opinion informed guidelines and best practices (emerging and established).
- Identify current barriers and future opportunities for implementing interventions.
- Consult relevant professional associations and other stakeholder organizations and subject matter experts for feedback, as appropriate.
- Meet for approximately nine months, as needed.
- Provide updates at Bree Collaborative meetings.
- Post draft report(s) on the Bree Collaborative website for public comment prior to sending report to the Bree Collaborative for approval and adoption.
- Present findings and recommendations in a report.
- Recommend data-driven and practical implementation strategies including metrics or a process for measurement.
- Create and oversee subsequent subgroups to help carry out the work, as needed.
- Revise this charter as necessary based on scope of work.

Structure

The workgroup will consist of individuals confirmed by Bree Collaborative members or appointed by the chair of the Bree Collaborative. The Bree Collaborative director and program coordinator will staff and provide management and support services for the workgroup.
Less than the full workgroup may convene to: gather and discuss information; conduct research; analyze relevant issues and facts; or draft recommendations for the deliberation of the full workgroup. A quorum shall be a simple majority and shall be required to accept and approve recommendations to send to the Bree Collaborative

Meetings

The workgroup will hold meetings as necessary. Bree Collaborative staff will conduct meetings, arrange for the recording of each meeting, and distribute meeting agendas and other materials prior to each meeting. Additional workgroup members may be added at the discretion of the Bree Collaborative director.

Name	Title	Organization
Norris Kamo, MPP (chair)	Section Head, Adult Primary Care	Virginia Mason Medical Center
Susan Buell	Association Director of Health Initiatives	YMCA of Pierce and Kitsap Counties
LuAnn Chen, MD, MHA	Medical Director	Community Health Plan of Washington
Sharon Eloranta, MD	Medical Director, Performance Measurement and Practice	Washington Health Alliance
Rick Hourigan, MD	Market Medical Executive	Cigna
Carissa Kemp, MPP	State Government Affairs and Advocacy Director	American Diabetes Association
Vickie Kolios, MSHSA, CPHQ	Program Director, Surgical and Spine COAP	Foundation for Health Care Quality
Robert Mecklenberg, MD	Medical Director (retired)	Virginia Mason Medical Center

Mamatha Palanati, MD	Family Medicine	Kaiser Permanente
Khimberly Schoenacker, RND, CSP, CD	CYSHCN Program	WA Department of Health
Cynthia Stilson, RN, BSN, CMM	Care Management Manager	Community Health Plan of Washington
Sally Sundar	Program Executive, Health Integration and Transformation	The Y of Greater Seattle
Nicole Treanor, MS, RD, CD, CDCES	Diabetes Care and Education Specialist	Virginia Mason Franciscan Health
Leah Wainman	Equity and Health Assessment Manager	WA Department of Health

[i] Washington State Department of Health, Center for Health Statistics, Behavioral Risk Factor Surveillance System (BRFSS), supported in part by the Centers for Disease Control and Prevention, Cooperative Agreement NU58/DP006865-02 (2021).
[ii] American Diabetes Association. The Burden of Diabetes in Washington. ADV. Accessed November 2022. Available at: https://diabetes.org/sites/default/files/2021-10/ADV_2021_State_Fact_sheets_Washington.pdf
[iii] American Diabetes Association. The Burden of Diabetes in Washington. ADV. Accessed November 2022. Available at: https://diabetes.org/sites/default/files/2021-10/ADV_2021_State_Fact_sheets_Washington.pdf
[iv] Washington State Department of Health, Comprehensive Hospitalization Abstract Reporting System (CHARS) 2021.
[v] Institute for Health Metrics and Evaluation. United States of America – Washington. IHME. Accessed November 2022. Available at: https://www.healthdata.org/united-states-washington
[vi] Centers for Disease Control and Prevention. CDC Study Finds Youth Onset Type 2 Diabetes More Severe in Minority Youth. [Press Release]. Accessed August 24, 2021. Available at: https://www.cdc.gov/media/releases/2021/p0824-youth-diabetes.html
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