



CLINICAL PRACTICE GUIDELINE

Guideline Number: DHMP_CHOICE_CG1005

Effective Date: 11/1/2022

Guideline Subject: Diabetes Management Guideline

Next Review: 11/1/2024

Pages: 1 of 13

Christine Seals Messersmith MD

Quality Management Committee Chair

11/1/22

Date

I. PURPOSE:

To define standards of care for Diabetes Management for eligible members of the Denver Health Medical Plan, Inc. (DHMP)

II. POPULATION:

All enrolled adult members with diagnosis of Diabetes Mellitus from a licensed healthcare provider. Members will be identified through administrative databases such as pharmacy (all members on oral hypoglycemic agents or insulin), claims, and case management databases as well as the Denver Health Diabetes Registry.

A. Criteria for Diagnosis of Diabetes (ADA, 2022):

- Fasting (no caloric intake for at least 8 hours) Plasma Glucose ≥ 126 mg/dL* *OR*
- 2-hour plasma glucose ≥ 200 mg/dL during 75-g oral glucose tolerance test* *OR*
- A1C $\geq 6.5\%$ (performed in a laboratory with NGSP certified method)* *OR*
- Random plasma glucose ≥ 200 mg/dL in patients with classic symptoms of hyperglycemia or hyperglycemic crisis

*In absence of unequivocal hyperglycemia, results should be confirmed by repeat testing

For further discussion or clarification please refer to “Classification and Diagnosis of Diabetes: *Standards of Medical Care in Diabetes-2022* <https://doi.org/10.2337/DC22-S002>

B. Exclusions:

1. Pregnancy.
2. Acute process not resulting in need for long term management of diabetes such as steroid-induced or polycystic ovarian syndrome requiring glucose control but not having chronic diabetes diagnosis.

III. RESPONSIBILITY:

The diabetes management team should be multidisciplinary and include the patient as well as providers, nurses, dietitians, pharmacists, diabetes educators, mental health professionals, health coaches, patient navigators, social workers, etc. The goal is to enable individuals to self-manage their diabetes.

IV. IMPROVING CARE AND PROMOTING HEALTH IN POPULATIONS:

Utilizing the chronic care model, the goal is to deliver patient centered collaborative care to enable individuals to self-manage their diabetes. Patient-centered communication should incorporate patient preference, assess literacy and numeracy, assess financial barriers, and address cultural barriers. Care should also include a comprehensive plan to reduce cardiovascular disease risk.

NOTE:

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V. GUIDELINE:

The following guidelines are consistent with the 2020 Standards of Medical Care in Diabetes from the American Diabetes Association (ADA). Some specifications for HEDIS measures of diabetes care are incorporated. Denver Health recommends a check-up for diabetes management every 6 months if at goal on measures, and every 3 months if not at goal.

A. Initial/Comprehensive Medical Evaluation:

Confirm and classify diabetes diagnosis; evaluate for complications and potential comorbid conditions; review previous treatment and risk factor control; engage patient in formulation of care management plan; develop plan for continuing care

B. Additional tasks as appropriate for Follow-up Visits or Annual Evaluation:

1. Interval medical history
2. Assess medication compliance and behavior. Review any intolerance of side effects.
3. Physical examination (height, weight, BMI, blood pressure, thyroid palpation Thyroid palpation is recommended at the initial visit and yearly. The other measures should be done every visit.
4. Comprehensive foot exam: Inspection; palpation of pulses; determination of monofilament sensation and 1 additional sensation (proprioception, vibration, pinprick, or ankle reflex.) This should be performed initially and annually.
5. Laboratory evaluation:
 - o A1C, if results not available within the past 6 months or last 3 months if previous value not at goal.
 - o Lipid profile, spot urinary albumin to creatinine ratio, serum creatinine and eGFR should be done yearly. For those with Type I Diabetes, a TSH should be performed every 3-5 years.
 - o Serum potassium yearly in patients on ACE inhibitors, ARBs, or diuretics.
 - o B12 when indicated if on metformin.
6. Assess risk for complications, including cardiovascular and micro/macrovascular complications (see additional tab below for further discussion), and hypoglycemia risk.
7. Diabetes self-management behaviors: nutrition, psychosocial health, need for referrals, immunizations; or other routine health maintenance screening

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8. Evaluate for complications and potential comorbid. Comorbidities: common comorbidities with diabetes may complicate management. The physician and multidisciplinary team will assess and monitor for comorbidities and provide screening/plan interventions as necessary
 - Autoimmune Diseases: Screening should be done upon diagnosis and periodically in type 1 diabetes patients for autoimmune thyroid disease and celiac disease
 - Cancer: patients with diabetes are at increased risk of cancers of the liver, pancreas, endometrium, colon/rectum, breast, and bladder. This may result from shared risk factors between diabetes and age, or with diabetes related factors. Patients are encouraged to undergo recommended age and sex-appropriate cancer screenings as well as reduce the modifiable risk factors (obesity, inactivity, and smoking).
 - Cognitive Impairment/Dementia: Treatment should be simplified as much as possible to prevent hypoglycemia
 - Nonalcoholic Fatty Liver Disease: Interventions that improve metabolic abnormalities (weight loss, glycemic control, treatment for dyslipidemia, etc.) are also beneficial for fatty liver disease.
 - Hepatitis C Infection
 - Pancreatitis
 - Fractures: Age-specific hip fracture risk is increased in diabetes (both male and female). Type 1 diabetes is associated with an increased risk for osteoporosis. Type 2 diabetes shows an increased risk of fracture despite higher bone mineral density.
 - Hearing Impairment
 - Low Testosterone in Men
 - Obstructive Sleep Apnea
 - Periodontal Disease
 - Psychosocial Disorders: Regular and consistent screening for anxiety, depression, disordered eating, and serious mental illness. These can impact the patient’s ability to self-manage their diabetes. If screening demonstrates psychosocial impact, initiation of a referral for additional services may be indicated.
9. Review previous treatment plans and evaluate effectiveness.
10. Provide routine recommended vaccines as indicated by age.
- C. Facilitating Behavior Change and Well-Being to Improve Health Outcomes with the patient regarding:
 1. Diabetes self-management education (DSME) and diabetes self-management support (DSMS):

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All people with diabetes should participate in self-management education and support to assist with obtaining the knowledge, skills, and ability for self-care as well as the behaviors needed for ongoing self-management. These patient-centered tools consider the needs of the individual to improve outcomes and reduce costs. Content may be tailored to prevention as well.

- a. Overall objectives: support informed decision-making, self-care behaviors, problem-solving, and active collaboration with health-care team.
 - b. Critical times for evaluation of need for self-management education:
 - i. At diagnosis
 - ii. Annually and when not meeting targets
 - iii. When there are complicating factors such as medical, physical or psychosocial
 - iv. Transition in life and care occur
2. Nutrition Therapy: Patient specific-goals include assisting the patient in determining what to eat and following a food plan. Specific dietary recommendations can be accessed at the ADA website. Referral to a registered dietitian nutritionist (RD/RDN) is recommended.
- a. For patients who have type 2 Diabetes and overweight or obesity, modest weight loss can improve glycemic control. Sustaining weight loss is challenging. Referral to other resources may be necessary to help the patient maintain or achieve nutritional goals. For additional information, please refer to http://care.diabetesjournals.org/content/41/Supplement_1/S65
 - b. Goals of Nutrition Therapy
 - i. Promote and support healthy eating patterns with emphasis on nutrient-dense foods in appropriate portion sizes to help achieve/maintain weight goals, individual glycemic, blood pressure and lipid goals and to delay/prevent complications of diabetes.
 - ii. Address individual nutrition needs based on personal/cultural preferences, health literacy, access to healthy foods, willingness/ability to make behavioral changes and existing barriers to change
 - iii. Maintain the pleasure of eating by providing nonjudgmental, scientific based feedback.
 - iv. Providing individuals with practical tools for developing healthy eating patterns
3. Physical Activity:
- a. Children and Adolescents: 60min/day or more of moderate or vigorous aerobic activity at least 3 days/week.
 - b. Adults: 150 minutes or more of moderate to vigorous activity per week, spread over at least 3 days/week unless contraindicated. Flexibility and balance training 2-3/week for older adults with diabetes. 2-3 sessions/week of resistance exercise on nonconsecutive days for adults with type 1 or type 2 diabetes. All adults with diabetes should decrease sedentary behavior.

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4. Smoking Cessation: advise all patients not to use tobacco, including e-cigarettes. Include screening and cessation counseling as a routine component of care.
5. Psychosocial Issues: screening and follow up regarding attitudes about illness, expectations for management and outcomes, quality of life, financial burden, access to care, and available resources (financial, social, and emotional), depression, anxiety, cognitive capacities, etc. It is important to routinely monitor psychosocial issues particularly when treatment targets aren't met or onset of complications.

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D. Glycemic Targets:

The 2021 ADA update recommends continuous glucose monitoring in all adults with type 1 diabetes who are not meeting glycemic targets, regardless of age and may be helpful in some type 2 diabetes patients, such as those with an intensive insulin regimen and those on regimens associated with hypoglycemia

A1C target	HEDIS classification	Frequency of Testing
<8% *	Good Control	Twice a year if meeting treatment goals with stable glycemic control
≥9%	Poor Control	Quarterly if not meeting treatment goals or with recent changes in therapy

The 2020 ADA position statement considers <7% a reasonable A1C goal for many non-pregnant adults. This goal may need to be adjusted lower or higher based on the individuals needs. However, HEDIS classifies good control as A1c <8% for most populations, <7% for selected population. Clinical judgement is warranted to determine the appropriate glycemic target based on the needs of the patient.

- For more details and information, please refer to Glycemic Targets: Standards of Medical Care in Diabetes- 2021 https://care.diabetesjournals.org/content/44/Supplement_1/S73
- For patients meeting their A1C goals perform A1C testing at least twice a year. For patients not meeting their goals perform the A1C test quarterly.

E. Diabetes Technology

1. The term used to describe the hardware, devices, and software people use to manage their diabetes. Diabetes technology is expanding beyond syringes, pens, or pumps and glucose meters to include hybrid devices that both monitor glucose and deliver insulin.
2. The type of technology used should be based on the patient’s needs, desires, skill level and availability of the devices.

F. Pharmacologic approaches to Glycemic Treatment (From ADA, 2021):

1. Insulin Therapy for Type 1 diabetes: Most patients should be treated with multiple daily injections of prandial insulin and basal insulin or continuous subcutaneous insulin infusion and use rapid-acting insulin analogs to reduce hypoglycemia risk. Patients should receive education on matching prandial insulin doses to carbohydrate intake, premeal glucose and anticipated physical activie.

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2. Type 2 Diabetes:

- a. Metformin, if not contraindicated and if tolerated is the preferred initial agent for treatment. Consider periodic measurement of vitamin B12 levels, especially in those with anemia or peripheral neuropathy
- b. A patient-centered approach should be used to guide the choice of pharmacologic agents and medication adherence should be a consideration when selecting pharmacologic therapy. Providers should also consider efficacy, hypoglycemia risk, history of atherosclerotic cardiovascular disease, impact on weight, potential side effects, renal effects, delivery method (oral versus subcutaneous), cost, and patient preferences

c. If A1C is above target, selection of pharmacologic treatment is based on several factors such as: the presence or absence of established atherosclerotic cardiovascular disease (ASCVD) or chronic kidney disease (CKD); whether or not there is a compelling need to minimize hypoglycemia; and cost. DHMP adheres to the clinical care guidelines specified by Denver Health (DH) Ambulatory Care Services (ACS) in their clinical care guideline, *Diabetes Management for Non-Pregnant Adults in the Outpatient Setting*. Further details can be accessed via <https://doi.org/10.2337/dc20-er07> titled, 2019 Update to: Management of Hyperglycemia in Type 2 Diabetes, 2018. A Consensus Report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes

- d. Reevaluation of the medication regimen and adjustment as needed to incorporate patient factors and regimen complexity is recommended.

G. CVD and Risk Management: Leading cause of morbidity and mortality for those with diabetes; and largest contributor to the costs of diabetes.

- 1. Risk factors (hypertension, dyslipidemia, smoking, family history of premature coronary disease, and albuminuria) should be assessed annually.
- 2. Blood Pressure Control: ALL patients with hypertension and diabetes should monitor their blood pressure at home to help identify masked hypertension, as well as to improve medication-taking behavior.

Goal	Screening	Diagnosis
<140/90mmHg	Measured at each routine visit	If elevated, confirmed on separate visit/day

*lower BP targets may be appropriate for younger patients, those with albuminuria, and/or those with hypertension and one or more additional ASCVD risk factors if they can be achieved without undue treatment or burden (ADA, 2017).

<https://diabetesjournals.org/care/article/40/9/1273/36772/Diabetes-and-Hypertension-A-Position-Statement-by>

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- a. Patients with BP >120/80 should be advised on lifestyle changes (weight loss, diet changes, increased physical activity, etc.) to reduce blood pressure. If weight loss is indicated a DASH-style dietary pattern (low sodium and increased potassium), moderation of alcohol intake, and increased physical activity are recommended.
 - c. Patients with confirmed BP >140/90 on 2 occasions: lifestyle therapy + initiation and titration of pharmacological therapy to achieve blood pressure goal unless contraindicated.
 - d. Patients with confirmed BP >160/100: lifestyle therapy + initiation of titration of 2 drugs or single-pill combination to reduce CVD events in patients with diabetes.
 - e. ACE inhibitor or ARB at the maximum tolerated dose indicated for blood pressure treatment is the recommended first line treatment for hypertension in patients with diabetes and urine albumin-to-creatinine ratio ≥ 300 mg/g creatinine or UACR 30-299 mg/g creatinine. If one class is not tolerated the other should be substituted.
 - f. For patients treated with ACE, ARB, or diuretic, serum creatinine/estimated glomerular filtration rate (eGFR) and serum potassium levels should be monitored.
3. Lipid Management: Lipid management is driven by risk status, not LDL level.
- a. Lifestyle modification education and recommendations: focus on weight loss (if indicated) diet modification, and increasing physical activity. Intensify lifestyle therapy and optimize glycemic control for patients with elevated triglyceride levels. With triglyceride levels ≥ 500 mg/dL (5.7mmol/L), evaluate for secondary causes and consider medical therapy to reduce the risk of pancreatitis.
 - b. Obtain a lipid profile at initiation of medication regimen and 4-12 weeks after initiation or change in dose, and annually. Adjust intensity of statin therapy based on individual response to medication.
 - c. Patients with diabetes, 40-75 years of age, should be counseled on their risk for a cardiovascular event through a recognized shared decision making tool.
 - d. Primary Prevention
 - o Patients 40-75 y.o. with diabetes and without atherosclerotic cardiovascular disease (ASCVD) should use a moderate-intensity statin therapy along with lifestyle therapy
 - o Patients 20-39 y.o. with diabetes and multiple ASCVD risk factors, initiation of statin therapy is reasonable along with lifestyle therapy
 - o Patients with diabetes who are considered at higher risk with multiple ASCVD risk factors or 50-70 y.o., a high intensity statin therapy should be considered
 - o For patients with diabetes and a 10-year ASCVD risk of 20% or higher, consider adding ezetimibe to maximally-tolerated statin therapy to reduce LDL cholesterol levels by 50% or more.

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e. Secondary Prevention

- Patients of all ages with diabetes and ASCVD a high-intensity therapy should be used in addition to lifestyle therapy
- Patients with diabetes and ASCVD that are considered very high risk according to the following criteria, if LDL cholesterol is ≥ 70 mg/dL on maximally tolerated statin dose, consider adding additional LDL-lowering therapy, such as ezetimibe or PCSK9 inhibitor.
- If patients are unable to tolerate the recommended intensity of statin therapy the maximally tolerated statin dose should be used
- Patients who are 75 or older it is reasonable to continue statin therapy or initiate statin therapy after discussing risks and benefits with the patient

High-Intensity and Moderate-Intensity Statin Therapy (from ADA, 2020)

High-Intensity Statin Therapy: lowers LDL cholesterol by $\geq 50\%$	Moderate Intensity Statin Therapy: lowers LDL cholesterol by 30-50%
Atorvastatin 40-80mg Rosuvastatin 20-40mg	Atorvastatin 10-20mg Rosuvastatin 5-10mg Simvastatin 20-40mg Pravastatin 40-80mg Lovastatin 40mg Fluvastatin XL 80mg Pitavastatin 2-4mg

4. Antiplatelet Agents:

- a. Use aspirin therapy (75-162 mg/day) as a secondary prevention for those with diabetes and a history of ASCVD.
- b. If the patient has a documented aspirin allergy and ASCVD, clopidogrel (75mg/day) may be used.
- c. Dual antiplatelet therapy is reasonable for up to 1 year after an acute coronary syndrome. Long term dual antiplatelet therapy should be considered for patients with prior coronary intervention, high ischemic risk and low bleeding risk. Combination therapy with aspirin plus low-dose rivaroxaban should be considered for patients with stable coronary and/or peripheral artery disease and low bleeding risk.
- d. Consider aspirin therapy as a primary prevention strategy for those with diabetes at increased cardiovascular risk (family history of premature ASCVD, hypertension, smoking, dyslipidemia, or albuminuria) and not at increased risk of bleeding.

F. Coronary Heart Disease:

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1. Patients with prior myocardial infarction should be continued on beta blockers for at least 3 years after the event. For treatment of patients with heart failure with a reduced ejection fraction a beta blocker with proven cardiovascular benefit should be used unless otherwise contraindicated.
2. For those with known ASCVD, use aspirin and statin therapy if not contraindicated, and consider ACE inhibitor therapy as necessary.
3. For those with symptomatic heart failure, do not use thiazolidinedione.
4. For patients with type 2 diabetes and ASCVD or kidney disease use of a SGLT2 inhibitor or GLP-1 receptor agonist with demonstrated CVD benefits is recommended as part of the patient’s diabetic regimen.

G. Microvascular Complications and Foot Care:

1. Diabetic Kidney Disease (DKD): Screening for nephropathy is also a component of HEDIS
 - a. Assess urinary albumin and eGFR annually (this applies to patients with type 2 diabetes, patients with comorbid hypertension, and type 1 diabetes with a duration of ≥5 years). Patients with urinary albumin >30 mg/g Cr and/or eGFR <60 mL/min/1.73 m² should have urinary albumin and eGFR monitored twice a year.
 - b. Optimize glucose control and blood pressure control to reduce risk or slow the progression.
 - c. For patients (non-pregnant) with diabetes and HTN, either and ACE inhibitor or and ARB is recommended for those with modestly elevated UACR (30-299 mg/g creatinine) and is strongly recommended for those with UACR >300mg/g creatinine.
 - d. Blood pressure levels <140/90 are recommended to reduce CVD mortality and slow chronic kidney disease progression.
 - e. For patients with with eGFR < 60 CKD dietary protein intake should be approximately 0.8 g/kg per day and for patients on dialysis, higher levels of protein should be considered.
 - f. For patients with diabetic kidney disease and an eGFR ≥30 mL/min/1.73 m² and urinary albumin >30 mg/gCR, use of a SGLT2 inhibitor to reduce risk of CKD progression along with reducing CV events. For patients with CKD use a GLP-1 receptor agonist to possibly reduce the progression of albuminuria and/or CV events.

Management of Chronic Kidney Disease:

GFR (mL/min/1.73m ²)	Recommended Management
All Patients	Yearly measurement of creatinine, UACR, potassium
45-60	Referral to a nephrologist if possibility for nondiabetic kidney disease exists; consider need for dose

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	adjustment of medication; monitor eGFR every 6 months; monitor electrolytes, bicarbonate, hemoglobin, calcium, phosphorus, and parathyroid hormone at least yearly; assure vitamin D sufficiency; consider bone density testing; referral for dietary counseling
30-44	Monitor eGFR every 3 months; monitor electrolytes, bicarbonate, calcium, phosphorus, parathyroid hormone, hemoglobin, albumin, and weight every 3-6 months; consider dose adjustment of medications
<30	Referral to a nephrologist

2. Diabetic Retinopathy: Optimize glycemic control, blood pressure, and serum lipid control can reduce risk/slow progression. Retinal Eye Exam is a component of the HEDIS measurement. Fundus photographs are a screening tool, not a substitute for a comprehensive exam. If utilizing eye camera- interpretation of images is to be completed by a trained eye care provider.

Screening for Diabetic Retinopathy:

Population	Exam/Finding	Timeframe
Adults with Type 1 Diabetes	Initial dilated and comprehensive eye exam by an ophthalmologist or optometrist	Within 5 years after onset of diabetes
Patients with Type 2 Diabetes	Initial dilated and comprehensive eye examination by an ophthalmologist or optometrist	At the time of the diabetes diagnosis
All patients with diabetes after initial exam	No evidence of retinopathy for one or more annual exams	Exams every 2 years may be considered
All patients with diabetes after initial exam or with abnormal findings	Any evidence of diabetic retinopathy present =>dilated retinal exam	Dilated retinal exam repeated annually by an ophthalmologist or optometrist
	Retinopathy that is progressing or sight-threatening	Requires more frequent examinations/monitoring
	*Consider a referral to ophthalmologist specializing in retinopathy with signs of any macular edema, or retinopathy	

3. Neuropathy:

- a. Tight glycemic control is the only method shown to prevent/delay diabetic neuropathy in patients with Type 1 diabetes, and to slow progression of diabetic neuropathy in Type 2 patients.

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b. **Assessment and Screening:** All patients should be assessed for diabetic peripheral neuropathy (DPN) starting at diagnosis of type 2 diabetes and 5 years after the diagnosis of type 1 diabetes. Annual assessment thereafter.

Assessment for distal symmetric polyneuropathy should include history and assessment of either temperature or pinprick sensation and vibration sensation using a 128-Hz tuning fork. All patients should have annual 10-g monofilament testing to identify feet at risk of ulceration and amputation. Treatment can include pregabalin, or duloxetine.

4. Foot Care:

- a. An annual comprehensive foot exam will identify risk factors for ulcers and amputations. For patients with sensory loss, prior ulcerations or amputations a foot exam should occur at each visit.
- b. The annual exam should include: inspection of the skin, assessment of foot deformities, neurological assessment (10-g monofilament testing), and vascular assessment, including pulses in legs and feet.
- c. Obtain a history of ulceration, amputation, Charcot foot, angioplasty or vascular surgery, cigarette smoking, retinopathy, and renal disease. Also assess current symptoms of neuropathy and vascular disease.
- d. Provide general preventive foot self-care education including, footwear selection/behaviors, and home care.

H. Older Adults: Generally, older adults (≥ 65 years) who are functional, cognitively intact, and with a long life expectancy have the same treatment goals as younger adults. Older adults have a higher risk of premature death, coexisting illnesses, depression and geriatric syndromes, including neurocognitive impairment. The ADA consensus report “Diabetes in Older Adults” contains further details.

1. Consider the assessment of medical, functional, mental, and social geriatric domains for diabetes management in older adults to provide a framework to determine targets and therapeutic approaches. Also, consider the cost of the treatment plan and risk of non-compliance due to cost.
2. Screening for geriatric syndromes may be appropriate in older adults experiencing limitations in their basic and instrumental activities of daily living as they may affect diabetes self-management and be related to health-related quality of life.
3. Screening for diabetes complications should be individualized in older adults. Pay close attention to complications that lead to functional impairment.
4. Glycemic levels may be relaxed in older adults based on individual criteria.
5. Annual screening for early detection of mild cognitive impairment or dementia for those 65 years and older.
6. High priority population for depression screening and treatment.
7. Hypoglycemia should be avoided. Assess and manage by adjusting targets as necessary.
8. Persons who use continuous glucose monitoring and insulin pumps should continue with access as applicable after age 65.

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RELEVANT LINKS:

1. Standards of Medical Care in Diabetes-2020 Abridged for Primary Care Providers:
<https://diabetesjournals.org/clinical/article/38/1/10/32237/Standards-of-Medical-Care-in-Diabetes-2020>
2. 2019 Update to: Management of Hyperglycemia in Type 2 Diabetes, 2018 consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD):
<https://doi.org/10.2337/dc20-er07>
3. DH ACS Clinical Care Guideline: Diabetes Management for Non-Pregnant Adults in the Outpatient Setting: <https://denverhealth.policystat.com/policy/5032184/latest/>

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URGENT Diabetes_Guideline_2022 - Needs Signature

Final Audit Report

2022-12-07

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