IMPLEMENTING THE PLANKS

BUILD AN ACCOUNTABLE DIABETES TEAM

The organization creates a diabetes team that accepts accountability for overall performance and achievement of goals. The team consists of engaged, multi-disciplinary participants who will address all aspects of diabetes care. Team composition is flexible and adapted to each organization and its culture.

STEP 1: ESTABLISH A TEAM

- Assemble a core team that consists of 8-10 members across the organization. Find those with an interest and/or skills who will be committed throughout the campaign. The team may consist of a patient or family member, Primary Care Physician, Advanced Practice Provider, Endocrinologist, Nurse, Certified Medical Assistant, Office Manager, Quality Manager, Information Technologist, Certified Diabetes Educator, and/or Dietitian.
- Identify extended team members (e.g., Pharmacist, Administrator, Podiatrist, Optometrist, Dentist, Health Coach, Specialty Provider, Behavioral Health Practitioner, Community Liaison) to support the core team at different intervals.
- Identify project management support to oversee campaign activities and responsibilities.

STEP 2: SCHEDULE THE FIRST TEAM MEETING

- Prepare or review a charter that identifies performance goals and related measures and an action plan that includes specific measureable objectives and related activities; responsibility for each objective; timeframe to complete each objective; and resources available or needed (e.g., support staff, data reports, financial).
- Appoint a leader who can generate internal support and secure commitment and resources from senior leadership.
- Select a "physician champion" who will gather support from the other physicians.
- Schedule regular team meetings, at least monthly.
- Commit to transparency and sharing of results throughout the organization.

STEP 3: HOLD ONGOING MEETINGS

At each meeting, the team will:

- Evaluate current procedures and guidelines for diabetes management to evaluate if processes are effective.
- Review and discuss data reports to evaluate the team's progress toward improvement.
- Review the action plan and have each member report on their specific objective(s).
- Identify early indicators of success and challenges preventing the team from meeting objectives.
- Determine process changes that need to occur as a result of successful interventions.
- Invite extended team members (as needed) to the meetings to build collaboration.
- Ensure development and implementation of internal communication plan.

STEP 4: CELEBRATE SUCCESS

- Communicate your team's progress and success to the rest of the organization through various channels (e.g., employees, department meetings, board meetings).
- Acknowledge the members of the team and others who contributed to the success of the program.

TOOL: CLINIC TEAM ROLES

INTERMOUNTAIN HEALTHCARE

COLLABORATIVE PHARMACY MANAGEMENT

The collaborative pharmacy model of disease management is an emerging program to help providers achieve clinical goals and improve satisfaction for patients with dyslipidemia, diabetes, and/or hypertension.

This program allows providers to partner with a pharmacist for support in selecting, titrating, and monitoring medications. For more information on this program, contact **jeff.olson@imail.org**.

PROPOSED ORDERS

iCentra will have the following advisories and the MA should propose orders to assist with the following advisories if they fire:

- Creatinine blood test (yearly)
- B-12 blood test
- ACE/ARB
- HbA1c (every 6 months, or every 3 months if HbA1c is greater than 9)
- Urine ACR (yearly)
- See ophthalmology for 2-year exam, or enter date of last eye exam for eye professional

ADDITIONAL SUPPORT FROM THE CARE MANAGEMENT TEAM

The care management team should support the team by:

- Collaborating with physician on patient management and education
- Collaborating with physician to identify and refer patients who need specialty care
- Working the diabetes bundle reports

CLINIC TEAM ROLES

A clinic visit for a patient with diabetes requires the support of the entire team to assure comprehensive care. The following algorithm suggests general responsibilities to help a clinic team share accountability for diabetes management.

ALGORITHM: PATIENT VISIT

Prior to visit

- **PSR** prints worksheet for diabetes appointments and **PATIENT** completes in waiting room
- **CARE MANAGEMENT TEAM** scrubs schedule to identify patient needs

↓

Patient check in

↓

Patient Rooming (Medical Assistant)

Data
- Enter responses from patient worksheet
- Record vital signs, including height, weight, BP, and PAVS
- Download data from glucose meter, if applicable
- Document problems as directed by provider

Medications and allergies
- Reconcile medications
- Verify and document allergies
- Any additional education

Orders and tests
- Propose orders as prompted by iCentra *(see sidebar at left)*
- Perform A1c test as needed
- Administer PHQ-2 to patients who have not had one in the last 12 months
- If PHQ-2 is positive, administer PHQ-9

Patient preparation
- Have patient remove shoes and socks in preparation for foot exam
- Notify care manager of patients requesting any additional education

↓

Patient Visit (Primary Care Provider)

Data
- Review responses to diabetes questionnaire
- Document diabetes in the problem list (if not already done), including date of onset if possible

Orders and tests
- Review and sign all proposed orders
- Consider preordering labs for next visit
- Perform foot exam and record results

Management
- Manage diabetes based on CPM guidelines
- Collaborate with pharmacist as needed *(see sidebar at left)*
- Identify patients whose comorbid conditions or age may be a contraindication to pursing treatment goals
- Determine compliance with diet and exercise recommendations
- Determine need for vaccinations

Follow-up
- Schedule quarterly follow-up appointment for patients who are not at goal per CPM
- Encourage patients to work with care manager or health advocate as needed *(see sidebar at left)*

TOOL: DIABETES CARE STANDING ORDERS

COMMUNITY PHYSICIAN NETWORK

COMMUNITY HEALTH NETWORK
Community Physician Network
Indianapolis, Indiana

Add Protocol #

Page 1 of 3
EFFECTIVE: 1/01/2012

Practice Name: Add practice Name

Protocol Title: Diabetes Care Standing Orders

Purpose: Establish a process by which healthcare team members may perform or order selected tests for care of patients with diabetes that meet specific criteria.

Scope: Applies to all staff members of this practice.

Procedure:

Test	*Criteria*	*Action*
A1c	A1c result is > 6 months old	Perform or order A1c test
Lipid Panel (Patients >12 yrs)	Lipid panel > 12 months old	Order fasting lipid panel
Lipid Panel (Patients 2-12 yrs)	Pts 2-12 yrs with unknown history or positive family history of hypercholesterolemia or premature CVD event	Draw lipid panel at diagnosis
	If none of above, then at age 12 yrs	Draw lipid panel at diagnosis and repeat every 5 yrs. If abnormal results, repeat every 1 yr.
Microalbumin (Omit if dx kidney disease stage IV or V or ESRD)	Microalbumin result > 12 months old If Type 1 – initiate at 10 years old or after 5 yrs diabetes duration. If Type 2, begin at diagnosis.	Perform or order microalbumin test.
Serum Creatinine	Serum creatinine > 12 months old	Perform or order creatinine

COMMUNITY HEALTH NETWORK
Community Physician Network
Indianapolis, Indiana

Add Protocol #

Page 2 of 3
EFFECTIVE: 1/01/2012

Dilated Retinal Eye Exam	No report of dilated retinal eye exam in 12 months Type 1 - begin within 3 - 5 years of diabetes diagnosis; Type 2 – begin at diagnosis).	Refer to eye care provider for DILATED eye exam (explain test must include dilation of the pupils and is not just a visual acuity test.
Foot Exam	Ask about any foot problems. Remove shoes and socks.	Perform a visual foot inspection each visit for abnormalities. If abnormalities exist or comprehensive foot exam not documented in the past year, alert provider.
Influenza Immunization (unless contraindicated or allergic to eggs) *Resource: National immunization hotline 1-800-232-2522 or http://www.vaccines*	If age ≥ 6 months old	Offer "inactivated" (no live virus, no flu mist) vaccine annually beginning each October.
Pneumococcal Pneumonia Immunization (unless contraindicated or allergic to eggs) *Resource: National immunization hotline 1-800-232-2522 or http://www.vaccines*	If age ≥ 2 yrs old OR *At age 65 IF first dose given before age 65 and 5 or more years have passed since that dose	Offer pneumonia vaccine (PPV 23) once in a lifetime*
Self-Management Goals:	Ask the patient if he/she has any self-management goals (self-care practices that the patient completes, or is working toward, to improve their diabetes care).	If the patient has no goals, alert the provider (or Nurse Care Manager) to discuss and assist the patient with setting reasonable goals.

Source: *2006 American Diabetes Association's Clinical Practice Recommendations.*

COMMUNITY HEALTH NETWORK
Community Physician Network
Indianapolis, Indiana

Add Protocol #

Page 3 of 3
EFFECTIVE: 1/01/2012

Practice Name: _____

Protocol Title: Diabetes Care Standing Orders

Protocol Owner: ____Director Nurse Care Managers____

Approved by: Clinical Excellence Committee

Approved by: _____ **Date:** _____

(See ADM 03 for designated approval.)

NOTE: Office Based Protocols/Standing Orders approval must be obtained from local MD leadership.

Next review due: _____

NOTE: Evidence Based policies/protocols must be reviewed annually otherwise review bi-annually.

Approved by: _____ Date: _____

Next review due: 01/01/2013

Approved by: _____ Date: _____

Next review due: 01/01/2014

Approved by: _____ Date: _____

Next review due: 01/01/2015

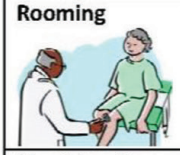
TOOL: TOP TIPS FROM CARE TEAMS AND FAQS

MERITER-UNITYPOINT HEALTH

MERITER Medical Group

Diabetes Update – 2015

Top 10 Tips from Top MMG Care Teams

When	What – consistent/reliable workflows	Testimony from the trenches
Chart Prep 	1. **Clinic staff verifies that upcoming DM patients have had their labs done**, and if not, call them to do so. Be sure that lab orders are in place.	• *"95% of my patients have their labs done ahead of the visit. It is an expectation I set with the patients and staff."* • *"Having lab results makes the visit much more worthwhile for me and the patient."* • *"I can't help manage A1c if I don't have the info in front of me during the visit."* • *"An after-visit call with lab results just isn't the same as a face to face discussion."*
Rooming 	2. **Consistently use the chronic disease navigator** for DM follow up visits. 3. **Take shoes/socks off every visit** and document the full foot exam in the DM navigator at least 1x/year.	• *"The navigator quickly walks me through everything I need to ask…it's easy to use."* • *"My roomer uses the chronic disease navigator about 90% of the time: I count on having that info when I enter the room. It really helps the visit go more quickly and pulls the data automatically into my note."*
Physician Care 	4. **Everyone in care team reinforces appropriate visit and refill frequency based on A1c control:** a. NEW dx: consider 2 week – 1 month visits and a DCT referral for education. b. A1c <7: 6 month visits/refills c. A1c 7 – 8: 3 month visits/refills d. A1c >8: 1 – 3 month visits based on compliance, refer to DCT e. New/medication change – consider 1 month visit/60 day refill. 5. **Use a tool that helps you document quickly** and consistently: conquer your barriers to using the smart set. Alternatively, use a smart phrase/note writer. Don't type everything. 6. **Medications**: Use refill protocol but limit to 1 month for new meds and 3 month for A1c >8. AND, use the Pharmacy referral when needed.	• *"The DM smart set has all the key elements I need. At least consider using it to order supplies and future labs."* • *"New med scripts are limited to 1 month so I can check how they are doing."* • *"I limit scripts to 3 or 6 months to assure patients come in for their DM visits: RNs should check A1c before giving refills."* • *"The smart set assures that all key elements are covered but it's not 100% intuitive until you get used to it. Then, it works great and goes faster." "I set it up ahead of time – it only takes 30 seconds."* • *"The pharmacists are a great resource for patients on insulin, multiple medications or out of control. It saves me time and the patients really appreciate their help."* • *"Try one of the new medications if the old ones aren't working well."* • *"Lipid management IS diabetic management: be liberal with statins."* • *"Use the attached med table (on last page) from the ADA."*
Patient Education 	7. **Every visit is an opportunity to support the patient**. Always document patient instructions/goals in the AVS so you can engage patient and follow this info over time. 8. **Use the "Formula for Good Health"** and exercise 'prescriptions'.	• *"DM is a lifestyle disease – I tell patients they can manage this well by making good food and activity choices".* • *"Keep a laminated copy of Formula for Good Health" handy and refer to it in patient visits."* • *"Actively work with patient to identify barriers to lifestyle changes." "As a physician I need to move past feeling like a 'babysitter' to being more of a 'coach."* • *"Introduce concept of DCT consultation and Healthy Weight program and encourage them if they have acceptance."* • *"My RN does a great job teaching glucometers, injections, etc. Saves me time."* • *If we can't fit the education into a regular visit we sometimes have the patient come back for that plus a glucometer check."*
Reception	9. **Schedule follow up visits** and include 'DM follow up" in reason for visit.	• *"It's really helpful when reception can capture DM as reason for visit for all follow up visits."*
Outreach 	10. **Run DM registry** weekly or at least monthly and contact those who are overdue for labs/visit.	• *"My nurse reviews the DM registry every week or so to reach out to patients who have A1c>9 or those who are missing labs and visits. It only takes a few minutes when we do it regularly."* • *"I give a list of patients who need appointments scheduled to our scheduling staff to reach the patient."*

MERITER Medical Group

Diabetes Update – 2015

Frequently Asked Questions

1. ***I haven't been 'tightly' managing my DM patients. What will they think when I change our visit and refill expectations?***
   Talk to your patients about the new ADA standards. Help them understand that there is good clinical evidence for best practices like regular A1c testing, physician visits and lifestyle changes. Let them know you are committed to providing the best possible care. You and your team can do this at patient visits or via outreach calls or a letter. Just keep your message simple and supportive.
2. ***How do we balance the need for scheduled/regular labs with insurance limitations?***
   The 90-day 'rule' seems to meet most needs for monitoring glyco-hemoglobin. For 'in-between' monitoring, encourage use of home monitors and have patients bring them in to clinic visits.
3. ***I have no time to run the registry report much less do outreach to patients. What do you want me to do?***
   Reaching out to patients who are overdue for labs or visits, or those who are struggling with lifestyle changes is a critical part of the service we provide. Registries are our best tool to identify those top priority patients. Physicians and staff must make it a priority. Just start somewhere: choose a day/time of the week and hold your team accountable to getting it done. EG start with DM patients without visits in the past 6 months, or those with A1c >9.
4. ***We have no time to do patient education during regular visits: the MD and RN are too busy.***
   For patients who are having trouble controlling their DM, or just need more personal attention, schedule an additional office visit with the specific purpose of providing education, discussing individual barriers and goals. Also, seek out the skills of your nursing staff and our pharmacists and DCT to provide the individualized care your patients need.
5. ***I don't find the smart set to be useful – why should I use it at all?***
   Use the MeriterCare tools that work best for you AND be sure that you always incorporate the critical elements. This can be done via the Smart Set, Notewriter or Smart Phrases.
   - DM Control: foot exam, testing, diet, activity
   - DM Symptoms
   - DM Risk Factors/lifestyle/smoking
   - DM Comorbidities
   - DM Labs
   - DM Meds
   - Patient instructions/goals

TOOL: SIMPLE INSULIN DOSE ADJUSTMENTS COMPETENCY VALIDATION

THEDACARE PHYSICIANS

THEDACARE COMPETENCY VALIDATION

Employee Name: _____

Title: Simple Insulin Dose Adjustments	**Dept: Nutrition and Diabetes Education**
Date: 8/5/13	**Owner:**

- Clinicians should demonstrate competent level prior to practicing independently.
- If unable to demonstrate competence, clinician will be re-trained and re-evaluated on competency prior to practicing independently.
- Needs to have passed the Diabetes Medications—Non-Insulin Competency.

OBJECTIVE STATEMENT: following this competency, the participant should be able to:

1. Describe action periods of rapid, fast, intermediate, long acting and premixed insulins.
2. Determine appropriate long acting or premixed insulin dose adjustments per the Insulin Management of Patients in Outpatient Diabetes Program Policy and Procedure.
3. Identify a blood glucose pattern where a patient on long acting insulin would require a change in insulin regimen and describe why.
4. Identify a blood glucose pattern where a patient on a premixed insulin regiment would require a change in insulin regimen and describe why.
5. Document insulin adjustment in a telephone encounter including documentation of blood sugars, dose adjustment, and means of communication or with whom message was left.
6. Adjust insulin orders in EPIC to reflect insulin change documentation in telephone encounter.
7. Recognize the brand and generic names of insulin.
8. Identify at least two other classes of medications that could increase the risk of hypoglycemia when taken concurrently with insulin.
9. Describe definition of hypoglycemia, four symptoms of hypoglycemia and four ways to treat low blood sugar.
10. Describe two situations where RD/RN CDE would advise patient to call MD office with blood glucose levels.
11. Describe when to give insulin in relation to meal and type of insulin.
12. Describe acceptable locations to inject insulin.
13. Describe appropriate storage of insulin.

KNOWLEDGE OR TECHNICAL RESOURCES:

- Insulin Management of Patients in the Outpatient Diabetes Program (Heartbeat>Webs>Nutrition and Diabetes>Team Site>Dept Resources>Outpatient>Nursing Privileges).
- Prevention, Detection, and Treatment of Diabetes in Adults 5th Edition, International Diabetes Center, 2009, 3-26-34.
- Life with Diabetes, 4th Edition, American Diabetes Association, 2009, pages 165-209.
- Drug Monographs for Lantus, Levemir, Novolin 70/30, Humulin 70/30, Novolog Mix 70/30, Humalog Mix 75/25 insulins.
- A Core Curriculum for Diabetes Education Ed: Diabetes Management Therapies, 4th Edition, American Association of Diabetes Educators, pages 91-150, 231-253.
- The Art and Science of Diabetes Self-Management Education, 2006, pages 337-370.

VALIDATION OF COMPETENCY:

A. **Knowledge (Cognitive) Criteria**

1. Match the appropriate action time to the appropriate insulin. (Draw lines between corresponding insulin and action time.)

Insulin	Action Times		
Rapid-Acting	Onset 1-2 hours	Peak Flat	Duration 24 hours
Short-Acting	Onset 5-15 minutes	Peak Dual	Duration 14-18 hours
Long-Acting	Onset ½-1 hour	Peak 2-4 hours	Duration 6-10 hours
Premixed Human Insulins	Onset ½-1 hour	Peak Dual	Duration 14-18 hours
Premixed Analog Insulins	Onset 5-15 minutes	Peak 1-2 hours	Duration 4-6 hours

2. 75 year old female was started on Lantus insulin 10 units at bedtime three days ago. She has Type 2 diabetes, takes Metformin 1000mg BID, Glipizide was discontinued with initiation of insulin therapy. Patient walks 30 minutes daily after breakfast. Patient is following a carb counting meal plan of 45 grams per meal and 15 grams at bedtime. Reported blood sugars are:

FBS	Supper
180	195
201	239
182	183

What blood glucose pattern do you see?

Based on the policy and procedure, what insulin dose change would you recommend and why?

Blood sugars at next report five days later are:

FBS	Supper
173	199
180	169
172	165
182	177
176	172

What blood glucose pattern do you see?

Based on the policy and procedure, what insulin dose change would you recommend and why?

Blood sugars at next report three days later are:

FBS	Supper
143	162
152	157
156	154

What blood glucose pattern do you see?

Based on the policy and procedure, what insulin dose change would you recommend and why?

Blood sugars at next report four days later are:

FBS	Supper
132	125
128	130
125	122
127	118

What blood glucose pattern do you see?

Based on the policy and procedure, what insulin dose change would you recommend and why?

3. 48 year old male with Type 2 diabetes has been taking Lantus insulin 50 units daily. He also takes Metformin 1000mg BID. He eats about 60-75 grams of carb/meal. He does no exercise but is active working as a farmer. He started Byetta 5mg one week ago. Lantus insulin was reduced at that time from 60 to 50 units daily. Blood sugar test results are as follows:

FBS	Lunch	Supper	Bedtime
76	100	64	110
82	92	85	104
69	110	78	113
88	74	65	92
75	83	98	98
109	97	102	103
71	78	69	99

What blood glucose pattern do you see?

Based on the policy and procedures, what insulin dose change would you recommend and why?

4. 57 year old male with Type 2 diabetes is taking Levemir insulin 40 units BID. He also takes Metformin 1000mg BID. A1C was 8.4. Recent test results are:

FBS	Lunch	Supper	Bedtime
136	162	154	194
150	158	161	187
144	170	180	213
180	188	174	200
128	156	163	181
139	167	177	198
141	171	180	250

What blood glucose pattern do you see?

What insulin dose change is needed and why?

5. 72 year old female with Type 2 diabetes eats 45 grams of carb/meal and 15 grams at bedtime. Rides a stationary bike after breakfast for 30 minutes daily. Babysits grandchildren in afternoon. Medicines are: Metformin 1000mg BID daily and Hunalog mix 75/25 insulin 30 units at breakfast and 22 units at dinner. Recent blood glucose tests results:

FBS	Lunch	Supper	Bedtime
122	101	86	140
130	110	77	125
108	78	146	111
101	68	102	133
114	72	76	104
121	111	65	98
99	70	138	116

What blood glucose pattern do you see?

Based on the policy and procedures, what insulin dose change would you recommend and why?

6. 62 year old male with Type 2 diabetes. He lost his insurance and cannot afford his Lantus and Humalog insulins. He was changed to Novolin (Relion) 70/30 insulin 24 units at breakfast and 12 units at supper. He continues on Metformin 1000mg BID. Blood glucose test results are:

FBS	Lunch	Supper	Bedtime
78	101	105	201
65	98	138	186
72	125	122	168
85	136	103	194
75	122	114	155

Based on the policy procedure, what would you recommend and why?

7. 52 year old male with Type 2 diabetes had an A1C of 9.4. He was started on Lantus insulin and doses have been titrated up gradually from 24 units to 36 units daily in the morning. He also is taking Metformin 1000mg BID. He eats 3 meals daily. Carb amounts are 60 grams for breakfast and lunch and 75-90 grams for dinner. He has been advised to decrease carbs at dinner to 60 grams; he is unwilling to do so. He is also unwilling to add exercise in the later part of the day. Recent blood glucose test results:

FBS	Lunch	Supper	Bedtime
113		132	186
130	86	101	178
82		99	235
125	82	86	165
88		110	160
80	90		

What blood glucose pattern do you see?

Based on the policy and procedure, what would you recommend and why?

8. 48 year old female with Type 2 diabetes is taking Humalog Mix 75/25 insulin 15 units at breakfast and 10 units at supper. She is on no other diabetes medication. She eats about 45 grams of carbohydrates at breakfast, skips lunch most days because she forgets to eat/isn't hungry and eats 45-60 grams of carbohydrates at dinner and 0-15 grams of carbohydrates at bedtime. Blood sugars are as follows:

FBS	Lunch	Supper	Bedtime
128		68	143
133		80	132
132		76	127
105	110 (ate this day)	92	101

What blood glucose pattern do you see?

What are your recommendations and why?

9. Based on your actions in question in #3, please complete a telephone encounter including dose changes for zztest, Julie, and print of your telephone encounter and attach to this competency.

10. Based on your actions in question #7, please complete a telephone encounter for zztest, Julie, and print off your telephone encounter and attach to this competency.

11. Match the generic and brand name of the insulins. (Draw lines between the corresponding generic and brand name.) More than one line may go to the same generic.

Generic Name	Brand Name
Lispro	Humulin 70/30
Glargine	Novolin N
Regular, Human	Humalog
Glulisine	Novolin R
Insulin Lispro Protamine Suspension/Lispro	Apidra
Aspart	Levemir
Detemir	Novolog Mix 70/30
NPH, Human (Human Insulin Isophane Suspension)	Novolog Humulin R
Insulin Aspart Protamine Suspension/Insulin Aspart	Novolin 70/30 Lantus
Insulin Isophane/Insulin Regular	Humulin N Humalog Mix 75/25

12. Name at least two other classes of diabetes medications that could increase the risk of hypog when taken with insulin.

13. Hypoglycemia is defined as a blood sugar less than _____ mg/dl.

14. List four symptoms of hypoglycemia.

15. List four ways to treat a low blood sugar.

16. At what point should a patient call their MD with blood sugar levels (list two)?

17. List four areas where a person can inject insulin.

18. At what temperature range should the insulin vial/pen that is being used be stored?

19. Where should extra insulin vials/pens be stored?

20. How soon should a person eat after taking the following insulins?

_____Rapid insulin
_____ Short acting insulin
_____ Long acting insulin
_____ Premixed Human Insulin
_____ Premixed Analog insulin
_____ Intermediate acting insulin

a. Within 15 minutes
b. Within 30 minutes
c. Does not need to be taken in relationship to food

21. If using premixed insulins twice daily, when should the patient take the two doses of insulin?

a. Before breakfast and bedtime
b. Before breakfast and supper
c. 12 hours apart, e.g. 6 AM and 6 PM
d. Before their two largest meals

B. **Standard Work/Process Steps**

Step Number	Work Steps
1	Collect blood sugars and assess for patterns. (See protocol.)
2	Collect information from patient and evaluate need for change in meal plan or exercise patterns to bring blood sugars to target.
3	Evaluate need for insulin dose changes to bring blood sugars to target.
4	Instruct patient on diet, exercise and/or insulin change recommendations.
5	Document blood sugars and recommendations in telephone encounter. (See standard work.)
6	Change insulin doses in medication list in telephone encounter. (See standard work.)
7	Route telephone encounter to referring provider if dosing changes were made. (See job aide.)
8	Route telephone encounter to referring provider if adjustments are needed that are outside the accepted protocol adjustments. (See protocol.)

C. **Competency Level Definitions**

1. Beginner	Received training. Performs simulation. Performs 10 dose adjustment encounters with supervision. Completes knowledge test with 100% accuracy.
2. Competent	Performs 15 dose adjustment encounters independently without defect per policy and procedure. Completes Validation of Competency.
3. Proficient	Strong use of reasoning and judgment in problem solving with more complex patient situations. Shows greater speed and flexibility in assessment, determining dose changes and documentation. Trains others.
4. Expert	High degree of skill & knowledge with depth/breadth of experience Works through complex decision-making. Leads/mentors others.

Validated Beginner by: _____ **Date:** _____

Validated Competent by: _____ **Date:** _____

Validated Proficient by: _____ **Date:** _____

Validated Expert by: _____ **Date:** _____

INTEGRATE EMOTIONAL AND BEHAVIORAL SUPPORT

A critical component of managing and treating patients with Type 2 diabetes is emotional and behavioral support, addressing patient motivation as well as diabetes-related distress (i.e., emotional responses related to the disease). This support includes intervention strategies to promote patient engagement and self-management. Patients are offered resources and/or referrals for behavioral health support.

With good care, people with diabetes can live long, healthy lives. Yet, many struggle with managing their diabetes and can become overwhelmed by the often burdensome self-care demands, potentially leading to anger, guilt, depression, fear, or feelings of hopelessness. This reality highlights the importance of integrating psychosocial support with clinical care.

Behavioral health conditions are more common in patients with chronic conditions. Those with untreated depression and diabetes or heart disease have poorer self-care, greater functional impairment, lower quality of life, and an increased risk of developing complications and premature death. Patients with these diagnoses use more medical resources, are more likely to be hospitalized for medical conditions, and are readmitted to the hospital more frequently.

Evidence indicates that having two, mostly independent systems of care leads to worse health and higher total spending. The main goal of most integrated care programs is to improve communication between behavioral health and primary care providers, thereby improving care coordination.

INTERVENTIONS TO INCREASE EMOTIONAL AND BEHAVIORAL HEALTH SUPPORT

- Provide communication skills training to providers that promotes listening to the patients, expressing empathy, allowing patients to share their frustrations openly, and validating feelings.
- Emphasize the importance of careful use of language. Messaging should avoid judgmental tone, motivate patients, and emphasize that patients can lead long, healthy lives.
- Create the role of care managers to monitor the patient's condition, provide self-management support, coordinate care, refer to community resources, and proactively work closely with physicians and behavioral providers.
- Refer to resources such as support groups, patient advocacy groups, online forums, social media, patient blogs, and web-based tools.
- Focus on a manageable number of mutually agreed-upon goals for each patient. A scorecard with key diabetes numbers can avoid overwhelming patients.
- Use validated tools to screen for depression and anxiety, and understand the difference between depression and diabetes distress.
- Develop a collaborative plan with behavioral health practitioners to address depression, anxiety, and other conditions.
- Select people with diabetes to serve as advocates on decision-making committees.

Healthy Coping

Learning You Have Diabetes

Learning you have diabetes changes your life forever. You may feel scared, shocked, angry or overwhelmed. You may not want to believe it. These are normal reactions. Always remember that diabetes is a manageable disease. Learning how to manage your disease will ease your fear and anxiety. Many people diagnosed with type 2 diabetes become very motivated to improve their overall health and lifestyle, so they can enjoy life to its fullest. Learning coping skills and getting the support you need is very important.

Stress

Stress is a natural part of life. Sometimes it can affect us in a good way—such as teaching us new skills, motivating and strengthening us. But other times, stress can harm our health, especially if it persists day after day. Chronic stress can raise blood pressure, heart rate, cholesterol and blood glucose.

Type of Stress

Psychological Stress	Physical Stress
• Family issues or concerns	• Illness
• Work challenges	• Infection
• Financial worries	• Chronic pain
• Relationship issues	• Poor sleep
• Personal problems	• Health complications
• Caregiver responsibilities	• Dental problems
• Worry and fatigue	

Sutter Health
We Plus You

October 2014

Coping Skills to Manage Stress

It is important to learn healthy ways to reduce and manage stress. Doing this can help improve your blood glucose levels and your overall health.

Tips for Stress Management

- Take a break: relax, take a walk, slow down, have some fun.
- Take care of your body. Eat healthy, sleep well, exercise, manage pain.
- Get support through friends, family members or professional counseling.
- Calm down and let go. Try deep-breathing exercises, meditation, or yoga.
- Make priorities. Decide what is most important in your life and stay focused on that.
- Take care of yourself. Do not put everyone else's needs ahead of your own.
- Set realistic goals. Try to change only those things that you can.
- Nurture yourself spiritually, emotionally and mentally. Treat yourself like your own best friend.
- Take time to do things you love.
- Stay positive.
- Your ideas: _____

_____

_____

_____

_____

Recognizing Depression

When you first learn that you have diabetes—or at other times in your life when your stress level remains high week after week—it is normal to feel sad and anxious. When stress worsens enough to affect your motivation, energy level and daily happiness, you could be experiencing symptoms of depression. Depression can make managing your diabetes, health and lifestyle more challenging.

Depression is treatable, but it often takes expert help and guidance, including counseling and medicine. If you have some of the symptoms below, talk to your health care provider. You deserve to enjoy life without depression.

Symptoms of Depression

- Sadness or irritability
- Withdrawing or isolating yourself
- Fatigue and trouble sleeping
- Poor concentration, forgetting things
- Poor eating habits
- Feeling overwhelmed
- Lack of motivation
- Feeling hopeless and helpless

October 2014

Diabetes Burnout

Taking care of your diabetes is an ongoing, daily routine. This routine gets easier when it becomes a habit. On the other hand, sometimes you may get tired of doing what it takes to manage your diabetes.

Signs of Diabetes Burnout

- Anger or resentment about having to manage your diabetes
- Feelings of being overwhelmed when thinking about the daily management routine
- Neglecting diabetes care: forgetting medicine, not checking blood glucose, not paying attention to eating and exercise
- No motivation or energy to manage your diabetes and take care of yourself
- Denying, forgetting or ignoring your diabetes

If you feel you have diabetes burnout, speak to your health care provider.

Taking Action

To manage your diabetes, your health care provider may recommend many lifestyle changes. Remember, no one expects you to immediately change all your daily habits. Most people do best when they can work on one lifestyle change at a time. Keep in mind these important steps for success:

- Make a clear plan
- Keep it realistic
- Do it consistently
- Document your success

It is normal to make mistakes and fall back on old habits, but sticking to your plan will help you achieve successful results. With success comes a feeling of well being.

Choose one of the AADE7™ Self-Care Behaviors to create a behavior-change goal. Then work with your health care provider to develop an action plan that will help you reach your goal.

- Healthy eating
- Being active
- Monitoring
- Taking medications
- Problem solving
- Reducing risks
- Healthy coping

You can use the Take Action form on the next page.

Take Action Plan

SMART goals help people with diabetes and their healthcare team track the progress of reaching your goal. When you are in a diabetes education program, you will set short term goals that can be met during the program.

If you answer these questions and complete this sentence you will have a SMART goal to follow.

By (date) _____ I will **WHAT** _____,

WHEN _____, **WHERE** _____,

HOW OFTEN (daily, weekly etc.)_____, **HOW LONG** _____

in order to **WHY** (i.e. lower blood glucose, lose weight)_____.

How will you **TRACK** your goal? _____

_____

Confidence Level

1 2 3 4 5 6 7 8 9 10

We ask people to "Rate your confidence level" after you set a goal. Confidence means how likely you think you can finish your goal.

- A rating of 1 means you are not sure at all and a rating of 10 means you are very sure. If you choose a 6 or below, ask yourself, how you can change your goal to make it easier to reach?
- Start with something you think is doable and then add on to the goal over time.
- Small changes now help you to meet bigger goals later.

Action Plan

An Action Plan helps you to meet your goal and to make changes to your goal when you are not able to finish what you set out to do. Ask yourself these questions:

- Who do you need support from?
- What might get in the way or make it hard for you to reach your goal?
- What is a reasonable time frame for your goal?
- What are some things you can do differently?
- Is your home or work planned to help you reach your goal?

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Keeping track of your goals

- Use a paper log or a mobile application (app) to track progress.
- Use reminders in your calendar, on your phone or with a mobile app.
- Social media and online support groups may help you find people to support you.
- A list of commonly used mobile apps and online diabetes support communities are listed in the back of the book.

Tracking your Progress

- How successful were you in reaching your goal?
- Rate your goal on a scale of 1-10 with 1 meaning not at all, 5 meaning half of the time, 7 meaning most of the time, and 10 meaning all of the time.
- If you met your goal, that is great! Now think about a new goal to help you keep your new skill or habit for the long term.
- If you did not meet your goal, think about how you might do things differently and change activities to reach your goal.
- Maybe your goal was too hard? You may need to start over with a new goal?

Your diabetes educator can help you set SMART goals and Action Plans.

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TOOL: HEALTHY COPING PATIENT HANDOUT (SPANISH)

SUTTER HEALTH

Adaptación saludable

Enterarse de que tiene diabetes

Enterarse de que tiene diabetes cambia su vida para siempre. Puede sentir miedo, impacto, enojo o sentirse abrumado. Probablemente no quiera creerlo. Estas son las reacciones normales. Recuerde siempre que la diabetes es una enfermedad que se puede controlar. Aprender a controlar su enfermedad le ayudará a aliviar su ansiedad y temor. Muchas personas diagnosticadas con diabetes tipo 2 se ven muy motivadas a mejorar su salud en general y estilo de vida, de manera que pueden disfrutar de la vida a plenitud. Aprender las habilidades de adaptación y obtener el apoyo que necesita es muy importante.

Estrés

El estrés es una parte natural de la vida. Algunas veces puede afectarnos de buena forma, como enseñarnos nuevas habilidades, motivación y fortalecernos. Pero otras veces, el estrés puede dañar nuestra salud, especialmente si persiste día tras día. El estrés crónico puede elevar la tensión arterial, la frecuencia cardíaca, el colesterol y la glucosa en la sangre.

Tipo de estrés

Estrés psicológico	Estrés físico
• Problemas familiares o inquietudes	• Infección
• Desafíos laborales	• Dolor crónico
• Preocupaciones financieras	• No dormir bien
• Problemas de relaciones	• Complicaciones de salud
• Problemas personales	• Problemas dentales
• Responsabilidades de los cuidadores	

Destrezas para afrontar el estrés

Es importante aprender maneras saludables para reducir y manejar el estrés. Hacerlo puede ayudar a mejorar sus niveles de glucosa en sangre y su salud en general.

Consejos para el manejo del estrés

- Tómese un tiempo libre: Relájese, realice una caminata, tranquilícese, diviértase.
- Cuide su cuerpo. Duerma bien, coma de manera saludable, haga ejercicio, maneje el dolor.
- Obtenga el apoyo de amigos, familiares u orientación profesional.
- Calmarse y dejarse llevar. Intente ejercicios de respiración profunda, meditación o yoga.
- Establezca prioridades. Decidir qué es lo más importante en su vida y mantenerse centrado en ello.
- Cuidede sí mismo. No anteponga las necesidades de los demás a las suyas.
- Establezca objetivos realistas. Trate de cambiar únicamente aquellas cosas que puede controlar.
- Cultívese a sí mismo espiritual, emocional y mentalmente. Trátese a sí mismo como su mejor amigo.
- Tómese el tiempo necesario para hacer las cosas que ama.
- Sea positivo.
- Sus ideas: _____

_____

_____

_____

_____

Ser consciente de la depresión

Al enterarse que tiene diabetes, o en otras ocasiones en su vida cuando su nivel de estrés permanece alto semana tras semana, es normal sentir tristeza y ansiedad. Cuando el estrés empeora lo suficiente como para afectar su motivación, nivel de energía y felicidad diaria, puede estar experimentando síntomas de depresión. La depresión puede hacer que el manejo de su diabetes, salud y estilo de vida sea más difícil.

La depresión es curable, pero con frecuencia requiere la ayuda y orientación de un experto, incluyendo asesoramiento profesional y medicamentos de venta con receta receta. Si usted experimenta algunos de los siguientes síntomas, hable con su proveedor de atención médica. Usted merece disfrutar de la vida sin depresión.

Síntomas de depresión

- Tristeza o irritabilidad
- Apartarse o aislarse
- Fatiga y dificultad para dormir
- Pérdida de la concentración, olvidarse cosas
- Hábitos alimenticios pobres
- Sentirse abrumado
- Falta de motivación
- Sentirse desesperanzado y desvalido

Agotamiento por la diabetes

El cuidado de su diabetes es una rutina diaria y continua. Esta rutina se vuelve más fácil cuando se convierte en un hábito. Por otro lado, algunas veces usted puede cansarse de hacer lo que tenga que hacer para manejar su diabetes.

Signos del agotamiento por la diabetes

- Ira o resentimiento acerca de tener que controlar su diabetes
- Sentirse abrumado cuando piensa en el manejo de la rutina diaria
- Descuidar la atención de la diabetes: olvidarse los medicamentos, no revisar su nivel de glucosa en sangre, no prestar atención a la dieta y al ejercicio
- Sin motivación o energía para manejar su diabetes y cuidarse a sí mismo
- Negar, olvidarse o ignorar su diabetes

Si siente que sufre agotamiento por la diabetes, hable con su proveedor de atención médica.

Tome acciones

Para manejar su diabetes, su proveedor de atención médica puede recomendar muchos cambios en su estilo de vida. Recuerde, nadie espera que usted cambie de inmediato todos sus hábitos cotidianos. La mayoría de las personas lo hacen mejor cuando pueden trabajar sobre un cambio de estilo de vida por vez. Tenga en cuenta estas medidas importantes para el éxito:

- Haga un plan claro
- Manténgalo realista
- Hágalo de forma invariable
- Documente su éxito

Es normal cometer errores y caer en los viejos hábitos, pero adherirse a su plan le ayudará a lograr resultados exitosos. Con el éxito viene una sensación de bienestar.

Elija uno de los comportamientos de autocuidado AADE7™ para crear un objetivo de cambio de comportamiento. Luego trabaje con su proveedor de atención médica para desarrollar un plan de acción que le ayude a alcanzar su objetivo.

- Una alimentación saludable
- Permanecer activo
- Control
- Tomar los medicamentos
- Resolución de problemas
- Reducir los riesgos
- Adaptación saludable

Puede utilizar el formulario Tomar acciones en la página siguiente.

Adopte un plan de acción

Los objetivos **inteligentes** ayudan a las personas con diabetes y a su equipo de atención médica a hacer seguimiento al progreso para alcanzar su objetivo. Cuando se encuentra en un programa de Educación de la diabetes, usted establecerá objetivos de corto plazo que se pueden cumplir durante el programa.

Los objetivos **inteligentes** son:
Específicos
Medibles
Alcanzables
Realistas
Limitados en el tiempo

Si usted responde estas preguntas y completa esta frase tendrá una meta SMART (Inteligente) a seguir.

Por (fecha) _____ Yo **QUÉ** _____,

CUÁNDO _____, **DÓNDE** _____,

¿Con qué frecuencia (semanal diaria, etc..)_____, **Por cuánto tiempo** _____

con el fin de **por qué** (es decir, reducir el nivel de glucosa en sangre, perder peso) _____

_____.

¿Cómo hará **seguimiento** de su objetivo? _____

Nivel de confianza

1 2 3 4 5 6 7 8 9 10

Le pedimos a las personas que "Califiquen su nivel de confianza" después de que usted establezca un objetivo. Confianza significa la probabilidad que usted considera en que puede lograr su objetivo.

- Una clasificación de 1 significa que usted no está seguro en absoluto y una clasificación de 10 significa que está muy seguro. Si usted elige un 6 o menos, pregúntese lo siguiente, ¿cómo puede cambiar su objetivo para que sea más fácil de lograrlo?
- Empiece con algo que crea que es posible y luego añada a la meta con el tiempo.
- Los cambios pequeños ahora lo ayudan a cumplir las metas más grandes más adelante.

Plan de acción

Un Plan de acción le ayuda a usted a cumplir su objetivo y a hacer cambios en el mismo cuando usted no es capaz de terminar lo que se ha propuesto. Hágase estas preguntas:

- ¿De quién necesita usted apoyo?
- ¿Qué puede interferer o hacer más difícil que usted logre su objetivo?
- ¿Cuál sería un marco de tiempo razonable para su objetivo?
- ¿Cuáles son algunas cosas que usted puede hacer de manera diferente?
- ¿Está su casa o trabajo planificado para ayudarlo a alcanzar su objetivo?

Lleve un control de sus metas

- Utilice un registro de papel o una aplicación móvil (app) para realizar un seguimiento del progreso.
- Utilice recordatorios en su calendario, en su teléfono o con una aplicación móvil.
- Los medios sociales y grupos de apoyo en línea pueden ayudarlo a encontrar personas que le apoyen.
- Una lista de aplicaciones móviles comúnmente utilizadas y las comunidades de apoyo en línea de la diabetes se enumeran en la parte posterior del libro.

Seguimiento de su progreso

- ¿Qué tan exitoso fue usted en alcanzar su objetivo?
- Califique su objetivo en una escala de 1 a 10, donde 1 significa nada, 5 significa la mitad de las veces, 7 significa casi todo el tiempo y 10 significa todo el tiempo.
- Si usted cumple con su objetivo, ¡eso es excelente! Ahora piense en una nueva meta que le ayude a mantenga mantener su nueva habilidad o hábito a largo plazo.
- Si usted no cumplió con su objetivo, piense en cómo se podrían hacer las cosas de manera diferente y cambie sus actividades para lograr su meta.
- ¿Tal vez su objetivo era demasiado difícil? ¿Debe comenzar con un nuevo objetivo?

Su educador de la diabetes puede ayudarlo a establecer objetivos SMART y planes de acción.

REFER TO DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT PROGRAMS

Patients are referred to an American Diabetes Association (ADA) Education Recognition Program or an American Association of Diabetes Educators (AADE) Diabetes Education Accreditation Program. The program emphasizes collaboration with patients to develop their own educational plan to promote self-management skills that facilitate behavior change. The program also offers resources and/or referrals for community services.

More than any other chronic condition, effective diabetes treatment is dependent on patient self-awareness, self-management, self-motivation, and ultimately self-care. Research shows the positive impact DSME can have on people with Type 2 diabetes, including improved HbA1c, enhanced self-efficacy, decreased presence of diabetes-related distress and depression, and reduced onset and/or advancement of diabetes complications.

Diabetes self-management education (DSME) is the process of facilitating the knowledge, skill, and ability necessary for diabetes self-care. Such programs offer quality education that meet the National Standards for Diabetes Self-Management Education and Support, and are eligible for third-party insurance reimbursement (including Medicare and many Medicaid). Currently, two organizations, ADA and AADE, are CMS-designated national accreditation organizations.

TIPS FOR REFERRING PATIENTS

- Create and implement a communications plan to educate providers about the availability and effectiveness of DSME programs and how to effectively refer patients.
- Determine if your organization currently offers or refers to a DSME program.

If your organization does not offer a DSME program:

- Identify DSME programs in your area using search tools offered by ADA and AADE (refer to Appendix E: Suggested Readings for links). If programs exist, collaborate to create a referral process that includes a formal feedback loop to track attendance.
- Consider creating a recognized program.

If your organization offers or refers to a DSME program:

- Focus initial DSME referrals on four critical time points:
  1. New diagnosis of Type 2 diabetes
  2. Annual health maintenance and prevention of complications
  3. New complicating factors that influence self-management (e.g., prescribing a new medication)
  4. Transitions in care occur (e.g., transitioning into adulthood, hospitalization, and moving into an assisted living facility, skilled nursing facility, correctional facility, or rehabilitation center)
- Develop a streamlined, systematic referral process to DSME programs. For reimbursement, referrals must be generated by the physician or qualified non-physician practitioner managing the individual's diabetes condition.

My Self-Care Success

Northeast Georgia PHYSICIANS GROUP

Name: _____ **DOB:** _____ **Date:** _____

Instructions: By setting self-care goals you can take an active role in helping yourself feel better more quickly. Choose **one** of the areas below and **set a goal**. Make sure the goal is clear and reasonable.

Eat a Healthy Diet

Be Physically Active

Take My Medicine

Spend time with people that support you

Monitor My Blood Sugar and Blood Pressure

Cope with Stress

Limit Alcohol

Stop Smoking

One way I want to improve my health is (e.g., be more active):

_____

My goal for this week is (e.g., walk 4 times):

_____

When I will do it (e.g., mornings before breakfast): _____

Where I will do it (e.g., at the park): _____

How often I will do it (e.g., Monday through Thursday): _____

How likely are you to follow through with these activities prior to your next visit? *circle one*

Not Likely 1 2 3 4 5 6 7 8 9 10 **Very Likely**

What might get in the way of your completing these activities prior to your next visit?

_____

Solutions to the above barriers: _____

_____

TOOL: DIABETES REPORT CARD

BILLINGS CLINIC

Your Diabetes Report Card

Name: _____
Date: _____

"A-B-Cs"	Risk Factor	Your Goals
A Is for "A1c"	**Diabetes Control** ***My Hemoglobin A1c is _____= average glucose of _____.*** *This measures how your sugars (glucose) have been running in the past 3 months.*	❑ Hemoglobin A1c goal is _____. ❑ Pre-meal blood sugar target is 80 to 130 mg/dl ❑ Peak blood sugar target (2 hrs after a meal) is less than 180 mg/dl ❑ Have your A1c checked every 3-6 months
B Is for "Blood Pressure"	**Blood Pressure** ***My blood pressure is _____*** *This blood pressure control is very important in preventing the complications of diabetes.*	❑ Blood pressure goal is less than **140/90** ❑ Have your blood pressure checked at every office visit or as directed by your health care provider
C Is for "Cholesterol"	**Cholesterol** • ***Total Cholesterol level is*** _____ • ***Triglyceride level is*** _____ • ***HDL (good) level is*** _____ • ***LDL (bad) level is*** _____	❑ Total Cholesterol less than 200 ❑ Triglycerides less than 150 ❑ HDL greater than 50 ❑ LDL less than 100 (if high risk heart disease <70) ❑ Diabetics aged 40-75 should be on a statin
D Is for "Diet"	**Diet and Weight** *Eat a healthy diet moderate in calories to help you maintain a healthy weight* ***My weight today is _____*** ***My BMI today is _____***	❑ If you are overweight, losing 5-10 % of your current weight can improve your blood sugar , blood pressure, cholesterol and overall well-being **5 – 10 % = _____ pounds**
E Is for "Eyes"	**Unrecognized Diabetic Eye Disease** *Diabetes is the leading cause of blindness in the U.S.* ***Date of Last eye exam_____***	❑ Get a dilated eye exam by an eye care provider **ONCE A YEAR** or as directed.
F Is for "Feet"	**Unrecognized Diabetic Foot Disease** *Diabetes causes loss of sensation in the feet and poor circulation.* ***Date of last foot exam: _____***	❑ Get a foot exam in your doctor's office **ONCE A YEAR** or as directed. ❑ Check your feet daily.
G Is for "Get Active"	**Lack of Physical Activity** *Increased activity is a natural way of improving your diabetes control and overall health.*	❑ 30 to 60 minutes of moderate activity per day can improve your blood sugar and weight. ❑ Reduce the amount of time you are sitting.
H Is for "Heart & Stroke"	**Risk of Heart Disease and Stroke** *People with diabetes have an increased risk of heart attack and stroke.*	❑ Daily aspirin therapy may be of benefit and is recommended for men > 50 and women > 60. Check with your provider.
I Is for "Immunizations"	**Influenza Immunization** **Pneumococcal Vaccination** **Hepatitis B Vaccination** (ages 19-59) *Getting these vaccines can prevent serious illness or even death*	❑ Influenza Immunization annually ***Last influenza immunization _____*** ❑ Pneumococcal Vaccination ***Last Pneumo-13 vaccination _____*** ***Last Pneumo 23 vaccination _____*** ***Last Pneumo-unknown vaccination_____*** ❑ Hepatitis B Vaccinations 1) _____ 2) _____ 3) _____
J, K Is for "Kidneys"	**Unrecognized Kidney Disease** *My microalbumin to creatinine ratio is: _____* (Normal is less than 30) *Diabetes is the most common cause of kidney failure in the U.S.*	❑ Get a yearly urine test to check if diabetes may be affecting the kidneys. ❑ Your provider may prescribe a blood pressure medication called an ACE Inhibitor or ARB to help keep your kidneys healthy.

TOOL: DSME PROGRAM REFERRAL LIST

INTERMOUNTAIN HEALTHCARE

We recommend AMGA members implementing this plank create a similar program referral list for your area. The program list included below is intended to serve as an example.

Diabetes educators and diabetes education programs

Diabetes education and medical nutrition therapy are covered by most commercial insurance providers and by Medicare. For help locating diabetes educators in the area of your practice, call Intermountain's Primary Care Program at 801-442-2990.

Salt Lake Valley Area

Salt Lake City, UT

Salt Lake Clinic
389 South 900 East — 385-282-2600 *option 2*

Murray, UT

Intermountain Medical Center
5121 Cottonwood Street — 801-507-3366

Intermountain Medical Group Comprehensive Care Clinic
5171 Cottonwood Street — 801-507-9369

Cottonwood Endocrine and Diabetes Center
5770 South 250 East, Suite 310 — 801-314-4500

Internal Medicine Associates
9844 South 1300 East, #200
(Alta View Hospital Campus) — 801-572-1472

Bountiful, UT

Bountiful Health Center
390 North Main Street — 801-294-1000

Taylorsville, UT

Taylorsville Health Center
3845 West 4700 South — 801-840-2000

Central Utah

Heber, UT

Heber Valley Medical Center
1485 South Highway 40 — 435-657-4311

American Fork, UT

American Fork Hospital
98 North 1100 East, Suite 302 — 801-492-2200

Provo, UT

Utah Valley Regional Medical Center
1034 North 500 West — 801-357-7546

Mt. Pleasant, UT

Sanpete Valley Hospital
1100 South Medical Drive — 435-462-2441

Fillmore, UT

Fillmore Community Hospital
674 South Highway 99 — 435-743-5591

Richfield, UT

Sevier Valley Medical Center
1000 North Main — 435-893-0371

Southern Utah

Panguitch, UT

Garfield Memorial Hospital
200 North 400 East — 435-676-8811

Cedar City, UT

Valley View Medical Center
110 West 1325 North, Suite 100 — 435-868-5576

St. George, UT

Dixie Regional Diabetes Clinic
348 East 600 South — 435-251-2888

Southern Idaho & Northern Utah

Burley, ID

Cassia Regional Medical Center
1501 Hiland Avenue — 208-677-6035

Tremonton, UT

Bear River Valley Diabetes Education
440 West 600 North — 435-716-5310

Logan, UT

Logan Regional Hospital
500 East 1400 North — 435-716-5310

Budge Diabetes Clinic
1350 North 500 East — 435-792-1710

Ogden, UT

McKay-Dee Hospital
4401 Harrison Blvd — 801-387-7520

McKay-Dee Endocrine and Diabetes Clinic
4403 Harrison Blvd, #3630 — 801-387-7900

North Ogden Clinic
2400 North 400 East (Washington Blvd) — 801-786-7500

This CPM presents a model of best care based on the best evidence available at the time of publication. It is not a prescription for every patient, and it is not meant to replace clinical judgment. Although physicians are encouraged to follow the CPM to help focus on and measure quality, deviations are a means for discovering improvements in patient care and expanding the knowledge base. Send feedback to Wayne Cannon, MD, Intermountain Healthcare, Primary Care Medical Director (Wayne.Cannon@imail.org).

Intermountain® Healthcare

CONDUCT PRACTICE-BASED SCREENING

A process is in place to identify patients seen in the practice who are at high risk for Type 2 diabetes, according to American Diabetes Association (ADA) recommendations for testing for diabetes or pre-diabetes in asymptomatic adults. Screening occurs at primary care, endocrinology, cardiology, nephrology, and other specialty visits (as determined by the group), and appropriate follow-up is provided. The EHR is used to identify patients who already meet the clinical criteria for type 2 diabetes but lack a diagnosis or problem list entry.

One-fourth of Americans who have Type 2 diabetes—and nearly twice that proportion among Asian and Hispanic Americans—are unaware they have it. Screening asymptomatic adults (practice-based case detection) is therefore an essential population health strategy.

According to the American Diabetes Association's Standards of Care:

- All patients 45 years of age or older should be tested, with repeat testing every 3 years if the results are normal, every year for people who have prediabetes; and
- Testing should be considered in adults younger than 45 who are overweight (BMI ≥ 25, or ≥ 23 in Asian Americans) and have additional risk factors.

TIPS FOR EFFECTIVE SCREENING

- Conduct screening in a practice-based setting, where patients can receive individualized treatment and support.
- Use hemoglobin A1c (HbA1c), fasting plasma glucose, or a two-hour oral glucose tolerance test for screening. Equivocal results should be confirmed through repeat testing or a different test.
- Identify people with diabetes who are "hiding in plain sight." These are patients who already have lab results that are diagnostic for diabetes or who are being treated for glycemic control but do not have the diagnosis on their problem list.
- Address "clinical inertia" to improve the effectiveness of identifying, documenting, and treating patients with diabetes or at risk to develop the condition.
- Organizations should consider addressing policy, system, and environmental factors through community interventions to promote healthy lifestyles.
- Create care pathways for those newly diagnosed with Type 2 diabetes or pre-diabetes:
  - For people found to have Type 2 diabetes, therapy should be individualized.
  - For people who have "pre-diabetes" (HbA1c 5.7–6.4%, impaired fasting glucose, or impaired glucose tolerance), retesting should occur at least once a year.
    - Clinicians should provide full diagnostic disclosure that promotes shared decision-making. This may include creation of a "roadmap" for aggressive lifestyle interventions to prevent or delay the onset of overt Type 2 diabetes.
    - Consider referral to programs that meet the guidelines of the Centers for Disease Control and Prevention's National Diabetes Prevention Program.
    - Other modifiable risk factors should be addressed, including smoking cessation and treatment of hypertension.
    - Clinicians should discuss the benefits and risks of medications for glycemic control for people at the upper end of the range for pre-diabetes who are obese or have additional risk factors. Shared decision-making is recommended for these patients.

TOOL: SCREENING AND DIAGNOSIS ALGORITHM

INTERMOUNTAIN HEALTHCARE

SCREENING AND DIAGNOSIS

Timely, accurate screening and diagnosis is important because it can:

- **Identify those at risk for diabetes.** Therapeutic lifestyle changes may delay or prevent development of diabetes in people with prediabetes.
- **Prevent or delay diabetes complications.** The length of time between the onset of hyperglycemia and appropriate treatment for the condition can be a significant factor in the development and severity of complications. Type 2 diabetes is often asymptomatic, and at the time of diagnosis a significant number of type 2 patients already have complications such as neuropathy, nephropathy, or retinopathy.
- **Identify those at risk for other causes of hyperglycemia.** Hyperglycemia can be chronic, pathogenic, asymptomatic, and can be caused by conditions other than diabetes. Screening for hyperglycemia can also detect patients at risk for complications from vascular, neurological, and renal conditions.

Screening

This CPM recommends:

- **Routine screening for type 2 diabetes.** Note that in addition to testing the patients specified in the algorithm on page 4, physicians should consider testing adults older than age 30 every 3 to 5 years. This is a cost-effective strategy; the benefits of early detection of type 2 diabetes include a reduced incidence of myocardial infarction and microvascular complications.[KAH]
- **No routine screening for type 1 diabetes.** People with type 1 typically present with acute symptoms and markedly elevated blood glucose, and most cases are diagnosed soon after the onset of hyperglycemia.

For pregnant patients, routine screening for gestational diabetes is recommended per the Intermountain care process model *Management of Gestational Diabetes*.

Diagnosis

Recommended diagnostic tools for type 2 diabetes include:

- **Hemoglobin A1c (HbA1c).**[ADA] HbA1c measurement does not require the patient to fast or undergo a glucose tolerance test, and the required specimens are stable at room temperature. Further, the results are not affected by intercurrent illness or stress and correlate with the development of subsequent retinopathy. Limitations of this test are that HbA1c's normal range is modestly higher in certain ethnic groups (e.g., African-Americans, Asian Indians) and it increases with age. HbA1c is elevated in patients with untreated hypothyroidism, and among U.S. adults with diabetes it tends to be slightly higher in winter.[TSE] False negative values can occur in patients with rapid red cell turnover, some anemias, and recent onset of diabetes.
- **Fasting plasma glucose (FPG).** The FPG is more convenient for patients, more reproducible, less costly, and easier to administer than the 2-hour OGTT.
- **Other acceptable diagnostic tests include a two-hour, 75-gram oral glucose tolerance test (OGTT).** This test may be required when evaluating patients with impaired fasting glucose (IFG) or if diabetes is still suspected despite a normal FPG or HbA1c result.

Diagnostic criteria for diabetes are listed in note (d) on the algorithm on the following page. Note that in the absence of unequivocal hyperglycemia, repeat testing is required to make a diagnosis of diabetes.[ADA] In an outpatient with new onset of hyperglycemia, causes of hyperglycemia other than diabetes should be considered. The differential diagnosis of hyperglycemia includes type 1 and type 2 diabetes, Cushing's syndrome, electrolyte abnormalities, acromegaly, pheochromocytoma, and pancreatic cancer.

PROFILES: TYPE 2, TYPE 1, LADA

Most new diabetes patients over the age of 30 will have type 2. Nevertheless, when the type of diabetes is uncertain by clinical presentation, we recommend antibody testing. Key considerations:

Type 2:

- Onset is usually slow.
- Occurs mainly in older adults, but can occur in children.
- Common features at diagnosis are obesity, insulin resistance, and neuropathy.
- Family history usually includes a first-degree relative with type 2 diabetes.
- Condition usually responds to oral medications for years.

Type 1:

- Onset is usually rapid (over the course of days or weeks).
- Occurs primarily in children and younger adults.
- Common features at diagnosis are DKA, recent weight loss,and insulin deficiency.
- Family history including a first-degree relative with diabetes is less common.
- Condition requires insulin from onset.

LADA

(latent autoimmune diabetes in adults):

- Onset is slow.
- Occurs in adults age 30 and older (does not occur in children).
- Prevalence among patients with adult-onset diabetes is about 10%.[HAW]
- In LADA patients, glutamic acid decarboxylase (GAD) antibodies are present close to 90% of the time, with only a small additional fraction of patients having other autoantibodies.[HAW]
- In comparison to diabetic patients without autoantibodies, LADA patients are more often female, younger at diagnosis, have a smaller waist circumference (are overweight but not obese), and do not exhibit DKA.
- Family or personal history often includes autoimmune disorder.
- Condition may initially respond to oral medications and other therapies, but will eventually require insulin.

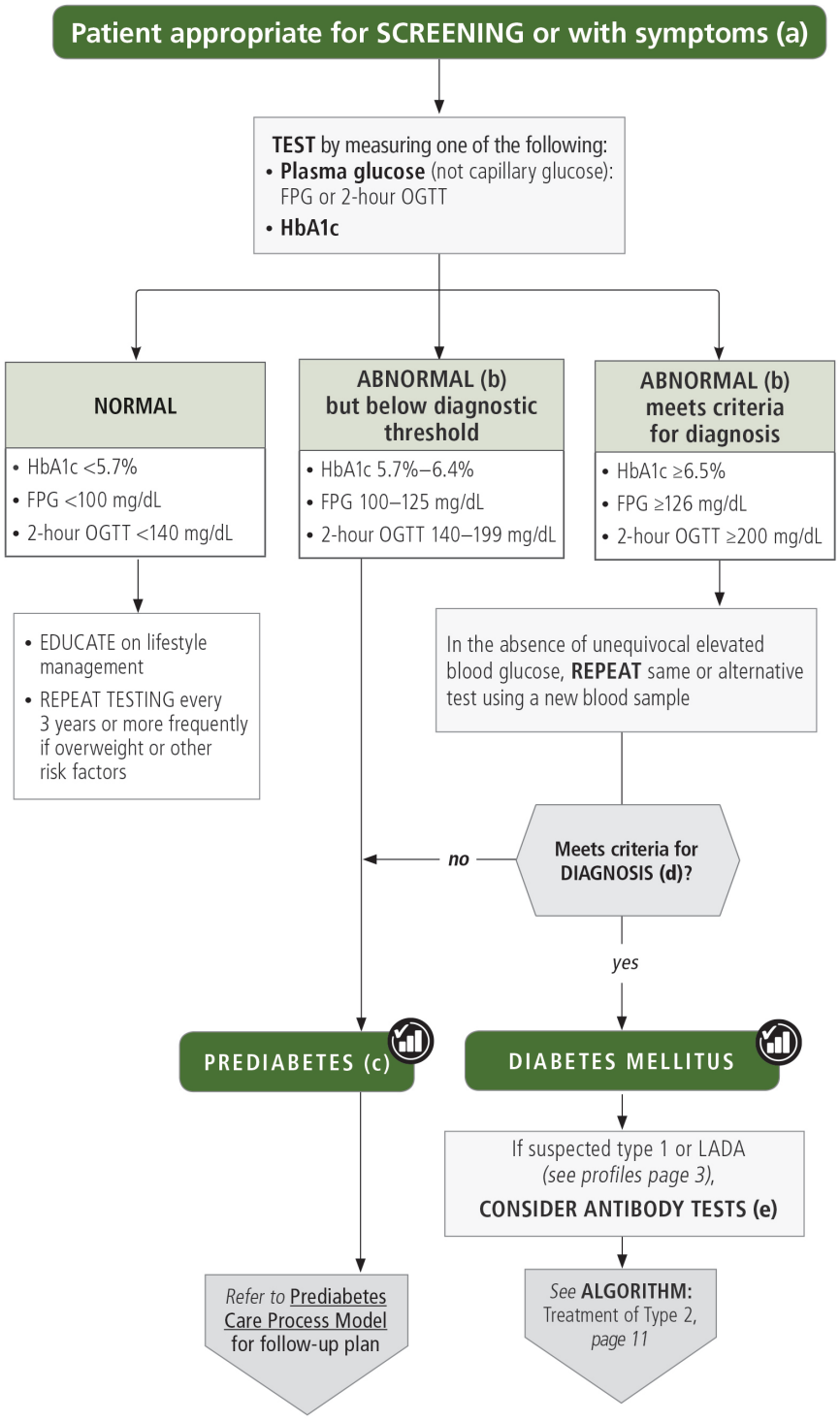
To order antibody testing:

- GAD antibody: ARUP # 0070211, Sunquest code **GADAB**, CPT 83519
- If GAD is negative, then order insulinoma associated-2 antibodies and/or Zinc transporter 8 antibodies

TOOL: SCREENING AND DIAGNOSIS ALGORITHM (CONTINUED)

INTERMOUNTAIN HEALTHCARE

ALGORITHM: SCREENING AND DIAGNOSIS



Indicates an Intermountain measure

ALGORITHM NOTES

(a) Diabetes Screening

Screen these patients at least every 3 years

or more frequently depending on initial results and risk status:

- **Adults ≥45 years**
- **Adults of any age who are overweight or obese** (BMI ≥25 kg/m2 or ≥23 kg/m2 in Asian Americans) **and have any of these additional risk factors:**
  - Hypertension >140/90 mm Hg or on therapy for hypertension
  - Family history: first-degree relative with diabetes
  - Habitual physical inactivity
  - High-risk ethnicity (African American, Latino, Native American, Asian American, Pacific Islander)
  - Previous GDM or delivery of baby >9 pounds
  - Dyslipidemia (HDL-cholesterol <35 mg/dL and/or triglycerides >250 mg/dL)
  - Polycystic ovary syndrome (PCOS)
  - History of vascular disease
  - Other clinical conditions associated with insulin resistance, e.g., acanthosis nigricans, sleep apnea, multiple skin tags, peripheral neuropathy, and gout.
  - Use of second-generation antipsychotic medication (SGAs); *see page 17*

Screen these patients annually

- History of elevated HbA1c ≥5.7%, impaired fasting glucose (≥100 mg/dL), or impaired glucose tolerance (≥140 mg/dL)

(b) Investigating Abnormal Values

- **Ensure the integrity of plasma glucose values:** must be obtained from a correctly collected/stored specimen, NOT from finger stick.
- **If repeat testing is indicated by an abnormal value, use ICD-9 code** 790.6 Abnormal Chemistry to order follow-up test. DO NOT use ICD-9 code 250.xx or your patient will be labeled a diabetic regardless of the test result.
- **Hemoglobinopathy.** If patient has hemoglobinopathy and diabetes is suspected based on blood glucose or symptoms, measure two FPG values for confirmation.

(c) Prediabetes

Prediabetes is not a clinical entity of itself. It is the term used for individuals with impaired fasting glucose (IFG) and/or impaired glucose tolerance (IGT), which are risk factors for developing diabetes and cardiovascular disease in the future. The Prediabetes Care Process Model provides system-wide support for helping patients prevent these conditions. Criteria for prediabetes include:

- HbA1c <5.7%–6.4% *OR*
- FPG <100–125 mg/dL *OR*
- 2-hour OGTT <140–199 mg/dL

(d) Criteria for Diabetes Diagnosis

Criteria for diabetes diagnosis:

- TWO HbA1c values ≥6.5% *OR*
- TWO FPG values ≥126 mg/dL *OR*
- TWO 2-hour OGTT values >200 mg/dL

Remember: Plasma glucose values must NOT come from a finger stick.

(e) Antibody Testing

- Glutamic acid decarboxylase (GAD) antibodies account for 90% of diabetes-associated autoantibodies.
- Insulinoma associated-2 antibodies and zinc transporter 8 antibodies account for only the remaining 10%.
- *See sidebar on page 4* for more further discussion of LADA and information on ordering tests.

TOOL: SCREENING FOR TYPE 2 DIABETES

COMMUNITY PHYSICIAN NETWORK

Community Physician Network

Screening for type 2 diabetes

The United States Preventative Services Task Force (USPSTF) recommends only adults with blood pressure readings > 135/80 mm Hg be screened for diabetes. Relying on this as a sole criterion for screening, however, may identify only half of those who have diabetes. We recommend following guidelines from the American Diabetes Association (ADA) for screening. **The ADA recommends adults who are overweight (BMI > 25) and possess at least one additional risk factor (listed below) be screened for DM. The ADA also recommends screening be performed in all adults age > 45 years even in the absence of other risk factors**. Appropriate tests used for screening include the hemoglobin A1c (A1c), fasting blood glucose (FBG), or the 75-gram oral glucose tolerance test (OGTT). If normal, screening should be repeated every 3 years or more frequently depending on results.

Physical inactivity
First-degree relative with diabetes
High-risk race/ethnicity (African-American, Latino, Native American, Asian American, Pacific Islanders)
Women with history of GDM or having delivered an infant weighing > 9 lbs
HTN (BP ≥ 140/90 mm Hg or treatment)
HDL <35 or triglycerides > 250 mg/dl
Women with history of polycystic ovarian syndrome
History of A1c ≥ 5.7%, impaired fasting glucose, or impaired glucose tolerance (ie, "pre-diabetes")
Clinical signs of insulin resistance, such as severe obesity or acanthosis nigricans
History of cardiovascular disease

The ICD codes for diabetes screening are V77.1 (ICD-9) and Z13.1 (ICD-10). Medicare allows annual screening with a single FBG in those with HTN, obesity (BMI >30), or dyslipidemia. Medicare also allows annual screening in those with two of the following: overweight (BMI 25-30), age >65, history of GDM, history of delivering baby weighing > 9 lbs. In addition, Medicare allows screening twice in a calendar year for those previously found to have "pre-diabetes".

Diagnostic criteria

The diagnosis of DM is based on assessment of the A1c, FBG, or the 2-hour post OGTT blood glucose level. Because of ease of testing, A1c via blood draw is the preferred method. Point of care A1c testing is generally not recommended for use in establishing the diagnosis of DM due to variability in quality control. The diagnostic "cut-offs" are based on levels associated with increased risks of microvascular complications, such as retinopathy and nephropathy.

	Normal	"Pre-diabetes"	Diabetes Mellitus
Fasting Blood Glucose	<100 mg/dl	100 - 125 mg/dl	≥ 126 mg/dl
2-hr Post Challenge	<140 mg/dl	140 - 199 mg/dl	≥ 200 mg/dl
A1c	<5.7%	5.7 – 6.4%	≥ 6.5%

The diagnosis of DM is established when **two criteria** are met (ie, FBG > 126 mg/dl, 2-hr post challenge BG > 200 mg/dl, or A1c > 6.5%). If FBG and A1c are done simultaneously, and both are consistent with DM, the diagnosis is established. If two tests are performed and only one is consistent with DM, the abnormal test should be confirmed 1-3 months later. If only one test is performed (FBG or A1c) and the results are "marginal", a confirmatory test should be done 1-3 months later.

Management of "Pre-diabetes"

"Pre-diabetes" (Pre-DM) refers to a condition recognized as abnormal glucose homeostasis, but not to the degree to be considered consistent with diabetes or its associated risks of retinopathy or nephropathy. This entity consists of those with "impaired fasting glucose" (FBG 100 - 125 mg/dl), "impaired glucose tolerance" (2-hr post challenge BG 140 - 199 mg/dl), or an A1c of 5.7 – 6.4%. Individuals with Pre-DM have a marked increased risk of developing overt DM in the future. Studies have suggested that the **5-year risk of developing DM** approaches 25% for those with A1c values of 5.5 – 6.0%, and as high as **50% for those in A1c values of 6.0 – 6.5%.**

It should be emphasized that lifestyle modification with diet, exercise and weight loss is paramount to improving insulin sensitivity and preventing or delaying the development of DM. Results from the Diabetes Prevention Program (DPP) suggest that such behavioral modifications with resultant **weight loss of 7% may decrease the risk of developing overt diabetes by as much as 58% after 3 years**.

Various oral agents have been studied as possible therapy to prevent or delay the development of DM, and each studied agent demonstrated some measurable benefit. However, studied agents did not seem to out-perform lifestyle modification. One of the most widely prescribed medications for Pre-DM, metformin, resulted in a 35% risk reduction in the DPP. Metformin was no more effective than placebo in those age > 60 years, but was equally effective as lifestyle modification in women with a history of GDM.

We recommend that all patients with Pre-DM begin moderate daily activity. We also recommend patients be counseled or **referred for a diet** that limits the caloric intake to a level that promotes weight loss. We also suggest the diet limit carbohydrates to 40% of daily calories, and consist of increased vegetables and fruits. We suggest **metformin, if used, be reserved for patients < age 60 who have advancing BG or A1c levels despite the above maneuvers**. Even so, the patient should receive ongoing counseling for weight loss.

It appears that the risks for CVD in Pre-DM may equal those in overt DM. The Honolulu Heart Study found the risks for CAD began at any level of FBG that exceeded 90 mg/dl. Further, those with Pre-DM tend to have added risk factors of hyperlipidemia and hypertension (HTN). Therefore, we recommend patients with Pre-DM be treated with an angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) if there is concomitant HTN. Reasonably, statin therapy may be suitable in attempt to lower the LDL <130 mg/dl, and possibly <100 mg/dl.

ADOPT TREATMENT ALGORITHM

The organization develops and consistently uses a treatment algorithm for patients with Type 2 diabetes that is consistent with evidence-based guidelines. Care teams and patients determine mutually agreed-upon treatment plans and goals that are individualized to each patient's needs and circumstances. Adherence to the treatment algorithm is monitored.

As defined by the Institute of Medicine (a division of the National Academies of Sciences, Engineering, and Medicine), clinical guidelines are "systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances." Guidelines and algorithms contain recommendations that are based on evidence from rigorous systematic review and synthesis of the published medical literature. Such algorithms support decision making by:

- Describing a range of generally accepted approaches for the diagnosis, management, and/or prevention of Type 2 diabetes.
- Defining practices to help most patients achieve optimal outcomes.

It is critical that clinicians and patients develop individualized treatment plans together, tailored to the specific needs and circumstances of the patient and their mutually agreed-upon goals.

STEPS TO DEVELOP AND CONSISTENTLY USE A TREATMENT ALGORITHM FOR YOUR DIABETES POPULATION

- Create a Guidelines Committee to review your organization's existing diabetes treatment approach or to develop/adopt an algorithm if one does not exist. Most organizations start with nationally endorsed guidelines, such as those noted in Appendix E: Suggested Readings. The Committee should be multidisciplinary, adequately represent your organization, and include primary care, specialists, leadership, and support staff.
- Engage clinicians in algorithm development and review. Those who are involved in the process and feel ownership will be more likely to implement and endorse the tool.
- Create a practical summary that is brief, actionable, and written in plain language.
- Train physicians and other practitioners on the guideline and integrate clinical decision support (e.g., EHR alerts) into the workflow.
- Monitor utilization of the guideline and identify reasons for lack of adoption. Creating a feedback loop will help the organization understand the effectiveness of guideline training and need to revise the guidelines.
- Develop a systematic process for a periodic review of the guidelines as new evidence emerges.
- Leverage transparent data reports (refer to Publish Transparent Internal Reports plank) to promote the effectiveness of algorithm adherence.

TOOL: DIABETES MANAGEMENT ALGORITHM

INTERMOUNTAIN HEALTHCARE

HbA1c: INDIVIDUALIZED GOALS

Current ADA Standards stress individualizing management goals for specific circumstances, including duration of diabetes, life expectancy, comorbid conditions, CVD, hypoglycemia, and patient self-care capacity.[INZ,ADA]

- **For most nonpregnant adults, aim for HbA1c less than 7.0%.**
- **Consider more stringent goals** (e.g., 6.0% to 6.5%) for selected individual patients such as those with short duration of diabetes, long life expectancy, and no significant CVD. **For pregnant patients aim for less than 6.0%.**
- **Consider less stringent goals** (e.g., 7.5% to 8.0%) for patients with a history of severe hypoglycemia, long disease duration, limited life expectancy, advanced complications, or extensive comorbid conditions.

Results of the ACCORD,[ACCO] ADVANCE,[ADVA] and VADT[DUC] studies did not show increased cardiovascular benefits from tight control of diabetes. However, tight control has consistently been shown to reduce the risk of microvascular and neuropathic complications.

Approximate comparison of HbA1c and plasma glucose values[ADA]

HbA1c	Plasma Glucose
6%	126 mg/dL
7%	154 mg/dL
8%	183 mg/dL
9%	212 mg/dL
10%	240 mg/dL
11%	269 mg/dL
12%	298 mg/dL

MANAGEMENT OVERVIEW

Diabetes care is complex, requiring regular medical care and follow-up. Patients with well controlled diabetes should be seen at least every 6 months; those who are not meeting treatment goals should be seen even more frequently.

Good diabetes care focuses on comprehensive management of blood glucose, blood pressure, and lipids and includes regular screening for eye, nerve, and kidney complications. This section of the CPM focuses on some important elements of diabetes care and self-management, namely blood glucose monitoring, medical nutrition therapy (MNT), physical activity, and medication. **It emphasizes individualization of treatment to address the patient's needs, preferences, and values.**

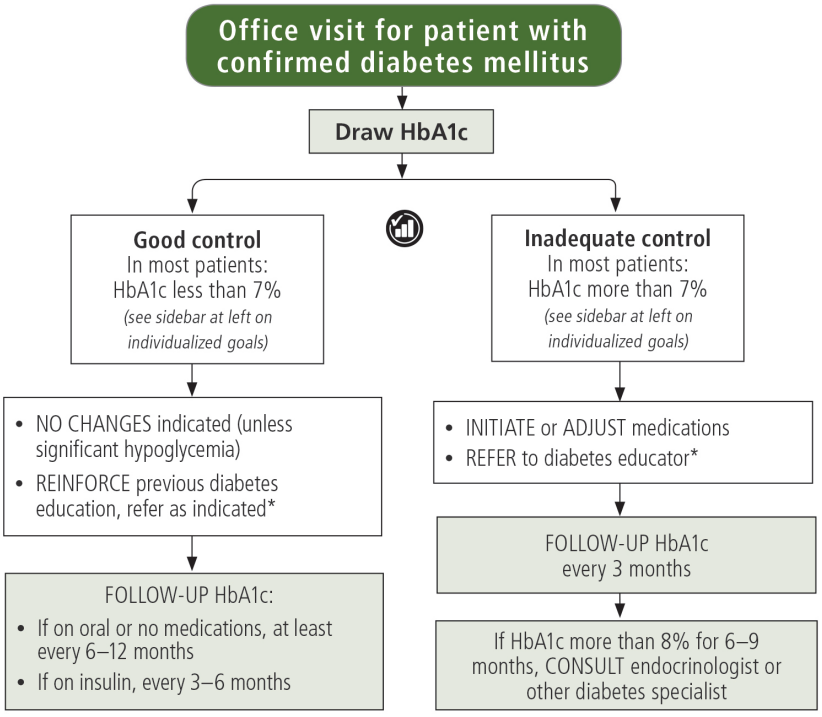
Monitoring blood glucose

The role of HbA1c

HbA1c testing is an indication of the overall trend of blood glucose levels for the previous 2 to 3 months and usually reflects overall diabetes control during that period.

HbA1c measurement can validate or call into question a patient's home record of glucose testing or glucose testing performed in the office. In situations where higher home glucose readings do not match in-office HbA1c, consider conditions causing rapid RBC turnover.

ALGORITHM: MONITORING HbA1c



*** At least annually, reinforce/update patients' diabetes knowledge and skills.** Consider using diabetes educators who are registered dietitians and can provide individualized medical nutrition therapy (MNT).

Indicates an Intermountain measure

The role of self-monitoring blood glucose systems (SMBG)

SMBG helps patients evaluate their individual response to therapy, avoid hypoglycemia, and make necessary adjustments to insulin therapy, medication, medical nutrition therapy (MNT), and physical activity. However, the accuracy of SMBG is dependent on the user and the instrument. Physicians or diabetes educators should teach patients how to do SMBG accurately, and routinely evaluate patients' technique and ability to use the data to adjust their therapy.[ADA]

Providers who manage insulin-treated patients — especially patients using multiple daily injection therapy or insulin pumps — must be able to appropriately analyze patients' SMBG data, including control over specific time intervals, control by time of day (modal day), testing frequency, and glucose variability. Software for this purpose is provided by device manufacturers at no cost. *See sidebar at right for testing guidelines.*

The role of continuous glucose monitoring systems (CGM)

Continuous glucose monitoring (CGM) devices provide continuous feedback to the patients about their glycemic control. When used consistently and in combination with an intensive insulin regimen, they can help lower HbA1c in adults age 25 and older. (Though there is less evidence supporting benefit in children, teens, and young adults, success correlates with consistent use.) In addition, CGM devices can be a valuable supplemental tools for patients with frequent hypoglycemic episodes and/or hypoglycemic unawareness — and significantly reduce the burden of diabetes by reducing fear of hypoglycemia and the pain of frequent testing.

A CGM device consists of a sensor electrode that is inserted into the subcutaneous tissue, a small radiofrequency transmitter, and a monitoring device that stores and displays the data. There are two types of CGM devices:

- **Personal CGM** devices belong to the patient and display subcutaneous glucose values to the patient in real time. An alarm feature alerts the patient when his or her subcutaneous glucose value crosses a prespecified threshold. In addition, these monitors have alarms that will warn the patient when glucose values are changing rapidly, potentially averting hypoglycemia. Several short-term studies have demonstrated their efficacy in lowering HbA1c levels and reducing frequency of hypoglycemia.[BEC,TAM] Most commercial insurance carriers cover CGM; however, the majority of Medicaid plans do not cover it.
- **Professional CGM** devices belong to the clinic or hospital and are used for short periods to give providers detailed information on a patient's glucose control. These devices can help identify patterns leading to hypoglycemia, hyperglycemia, and significant glucose variability. In addition, it can provide quick information on glucose patterns during pregnancy.

The role of continuous subcutaneous insulin infusion (CSII)

CSII (also called insulin pump therapy) is recommended for selected patients with type 1 diabetes and for some patients with insulin-treated type 2 diabetes. These should only be prescribed by experienced clinicians who have the knowledge, skills, and resources to monitor for failure. Adequate pump programs should involve a multidisciplinary team of providers — not just the services of industry-employed trainers and salespersons. Most insurance carriers, including SelectHealth, have liberal criteria for approval of CSII and rely on physician discretion to identify patients who are likely to benefit. Identifying patients appropriate for this technology is complex and beyond the scope of this discussion.

SMBG GUIDELINES

Although we recommend tailoring the frequency and timing of SMBG to individual patients and circumstances, some general guidelines appear below.

Test once a day, or less often:

- Patients who are controlling their diabetes with oral agents or with diet and exercise alone

Test 3 or fewer times a day:

- Patients using less-frequent insulin injections

Test 3 to 4 times a day:

- Patients using multiple insulin doses

Test 4 or more times a day:

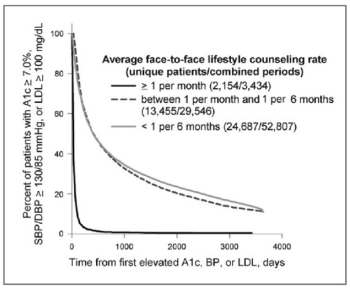
- Pregnant women or patients with hypoglycemic unawareness (4 to 8 times per day)
- Patients having sick days
- Patients modifying therapy
- Patients having hypoglycemia
- Any patient motivated to test this often to achieve best control possible

Coverage for SMBG test strips

- **For all patients:** Sometimes a durable medical equipment benefit is a better alternative than a pharmacy benefit to obtain test strips. Patients should compare both options.
- **For Medicare patients:** Medicare allows 3 test strips daily for patients with type 1 or type 2 diabetes on any form of insulin therapy. To obtain approval for 4 or more tests per day, Medicare requires proof of higher testing frequency (download from glucose monitor), a statement attesting to the need for added tests, and often a record from office notes demonstrating the provider's recommendation for high-frequency testing.
- **For patients without insurance coverage:** Simple meters (usually with no memory or download capability) with names like ReliOn and Truetrack can be significantly less expensive for patients lacking insurance coverage for superior products.

FREQUENT LIFESTYLE COUNSELING HELPS PATIENTS ACHIEVE TARGETS FASTER

Lifestyle counseling in the primary care setting is strongly associated with faster achievement of HbA1c, blood pressure, and LDL cholesterol control. A large retrospective study found that with a face-to-face counseling rate of **at least one time per month,** patients reached goals much faster than with less-frequent rates.[MOR]



NEW SUPPORT FOR LIFESTYLE MANAGEMENT

The 2013 care process model *Lifestyle and Weight Management* provides detailed strategies and tools to help you build a team process around evidence-based guidelines for behavior change, physical activity, nutrition, weight management and other lifestyle factors.

Click the image to open the document, or see page 31 for ordering information.

Lifestyle management

All patients with diabetes and prediabetes should be counseled on lifestyle measures. Lifestyle counseling is associated with better control of HbA1c, blood pressure, LDL cholesterol, and weight, as well as improved overall well-being.[MOR]

The two principal goals of lifestyle intervention are to **achieve a mean loss of ≥7% of initial body weight in overweight patients** and to **increase patient physical activity to ≥175 minutes of moderate intensity a week.** Key components of lifestyle management are medical nutrition therapy, physical activity, behavior modification and accountability, and intensive lifestyle interventions.

Medical nutrition therapy (MNT)

Medical nutrition therapy is an integral component of diabetes management and is covered by most commercial insurance providers and by Medicare.

All patients with prediabetes or diabetes should be referred to a registered dietitian — preferably one specializing in diabetes education — for individualized MNT. MNT includes an individualized meal plan that accommodates the patient's medications and metabolic needs, as well as their eating habits, lifestyle, and readiness to change. Meal plans are adjusted as needed to help patients comply with needed changes and meet goals.

A meal plan includes the following, at a minimum:

- **Amount and type of carbohydrates consumed.** Both quality and quantity of carbohydrate in foods influence blood glucose levels and glycemic response. However, there is no standard regarding the ideal amount of carbohydrate intake for people with diabetes.[ADA] Individualized recommendations should address the total amount of carbohydrate that should be distributed through the day. Consistency in method of carbohydrate monitoring should be encouraged. For good health, dietary patterns should include carbs from fruits, vegetables, whole grains, legumes, and low-fat milk. Promote fiber intake of 25 g to 35 g per day.[BAN] The patient fact sheet *High-Fiber Eating Plan* provides ideas.
- **Timing of meals and snacks.** Monitoring and maintaining a consistent pattern of carbohydrate use is key to achieving glycemic control. Meals should include a mix of macronutrients (carbohydrate, protein, and fat) individualized to meet the patient's metabolic goals and personal preferences.
- **Caloric restriction combined with physical activity to support any needed weight loss.** Weight loss should be gradual and slow. Aim for a rate of 1 to 2 pounds per week. Mediterranean, low-fat, calorie-restricted, or low-carbohydrate diets may all be effective for weight loss.[ADA]

Until a dietitian can provide an individualized meal plan, counsel overweight patients to reduce calories.

- As a temporary guideline, an initial goal is 1200 to 1500 total calories per day for patients <250 pounds, and 1500 to 1800 calories per day for patients >250 pounds.
- Additional recommendations could include limiting fat to <30% of calories (with <7% from saturated fat), and limiting carbohydrates per meal (or split between meal and snack) to 45 to 60 grams for women, and 60 to 75 grams for men.
- Resources such as CalorieCount.com can provide nutrition content of foods. Assistance with healthy food choices is available at ChooseMyPlate.gov. Smart phone apps such as MyFitnessPal can also help patients track nutrients.

Physical activity

Regular physical activity improves blood glucose control and can prevent or delay type 2 diabetes.[COLB] Regular activity also positively affects cholesterol, blood pressure, cardiovascular risk, mortality rates, and quality of life.

Preexercise evaluation. Sedentary patients should be evaluated by a physician before beginning a moderate- to vigorous-intensity exercise program. *See the Exercise is Medicine Physical Activity Questionnaire* for a sample screening tool. Refer to appropriate specialists or provide suggestions for adapting exercise based on individual needs. ***Note:* even patients with known coronary artery disease and stable angina benefit from regular physical activity.**[BOD]

Recommendations. Counsel patients to:

- **Increase activity to ≥175 minutes per week** of moderate- to vigorous-intensity aerobic activity — heart beating faster than normal and breathing harder than normal, such as a brisk walk. Spread activity over at least 3 days per week, with no more than 2 consecutive days between bouts of aerobic activity. While the ADA guidelines recommend ≥150 minutes per week, Intermountain endorses the target of ≥175 minutes used in the Look AHEAD trial based on findings that higher levels of physical activity significantly improve weight loss maintenance and other health outcomes.[DEL] Record patient activity in the *Physical Activity Vital Sign* in the electronic medical record. Casual walking that does not meet at least moderate intensity does not count toward the weekly goal.
- **Increase activity gradually.** Patients who are currently sedentary should start with 10 minutes of walking at moderate intensity 3 days per week, gradually increasing to 5 days per week. Once they are walking on most days, patients should add minutes to achieve 20 minutes on most days, and build toward the goal of 30 to 60 minutes on most days of the week.
- Unless contraindicated, **undertake resistance training 2 days per week**, focusing on major muscle groups and core body conditioning.
- **Decrease time sitting and increase daily movement.** All individuals should be encouraged to break up extended amounts of time sitting (>90 minutes).[ADA] Taking a two- to three-minute walk every 20 minutes has been demonstrated to reduce postprandial glucose and insulin levels in overweight and obese adults.[DUN] Individuals can increase daily movement through activities such as taking the stairs, walking rather than riding in a car, etc.
- **At first, monitor blood glucose before, during, and after physical activity.** Once patients have a sense of how exercise works with their medication, food choices, and other factors that affect blood glucose, they won't need to check levels as often.

Behavior modification and accountability

Diabetes self-care requires modification to daily behaviors that most patients find challenging. For detailed, evidence-based support in this process, *see the Behavior Change Techniques and Tools section of the Lifestyle and Weight Management CPM.*

Patients experiencing difficulty adhering to diet and exercise recommendations, or who lose <1% of weight per month, may require additional assistance. Referral to an intensive lifestyle intervention program (such as *The Weigh to Health*®) or additional contact with a clinician may help. *See sidebar on page 10 for more information.*

DIABETES IN REMISSION

In patients who have had gastric bypass surgery or banding or who have implemented lifestyle and weight management changes, glycemia measures may fall below diagnostic thresholds. Because chronic conditions such as diabetes are never considered to be completely cured, these patients are considered to be in remission. An ADA consensus statement defines remission as the following[BUS]:

- **Partial remission**
  - Hyperglycemia below diagnostic thresholds for at least 1 year, with no active pharmacologic intervention
- **Complete remission**
  - Normal glycemia measures for at least 1 year, with no active pharmacologic therapy
- **Prolonged remission**
  - Complete remission for at least 5 years

Follow-up for patients in remission

The science is limited regarding risk for macro and microvascular complications for patients in remission. The ADA currently recommends the following care:

- Until the patient is in prolonged remission, continue the same follow-up practices as a patient with diabetes.
- Once the patient is in prolonged remission, make a shared decision with the patient on how to monitor based on personal risk factors. At a minimum, this should include HbA1c monitoring every 3 years, which matches the preventive care guidelines.

This shared decision-making tool will help you and your patients to decide on a follow-up plan together.

Diabetes in Remission Fact Sheet. For ordering information see page 31.

THE LOOK AHEAD TRIAL

The Look AHEAD[DEL] trial was a large clinical trial designed to examine the long-term effects of an intensive lifestyle intervention (ILI) in overweight volunteers with type 2 diabetes. Although the trial showed no difference in CVD endpoints compared to the control group, study participants who received ILI experienced:

- Average weight loss of 8.6%
- Significant reduction of HbA1c
- Reduction in several CVD risk factors

The Look AHEAD findings suggest that ILI is associated with partial diabetes remission in patients with type 2 diabetes, particularly in those whose diabetes is of short duration, who have lower HbA1c levels, and who do not yet require insulin therapy.

Consider referring patients to Intermountain's *The Weigh to Health*® program

Intermountain Healthcare's revised *The Weigh to Health*® program is an example of an intensive lifestyle intervention. The program consists of:

- 2 individual sessions with a registered dietitian
- Regular group sessions (an orientation and at least 9 more over 6 months) covering nutrition, exercise, behavior change, and other topics
- At many facilities, a collaborative exercise program (for a small fee)

There is no cost for SelectHealth members who have a BMI over 30 OR have a comorbidity for a diet-related chronic condition (such as diabetes), and who complete the program. Patients who *do not* complete the program pay for the sessions they attended.

Click the image to open the brochure, or refer to page 31 for ordering information.

Intensive lifestyle intervention (ILI)

An intensive lifestyle intervention (also referred to as behavioral intervention) **can provide the support and follow-up necessary for behavior modification.** With passage of the Affordable Care Act (ACA), commercial payers are required to cover an intensive lifestyle intervention *at no cost* to patients with BMI ≥30 or with BMI ≥25 and one or more cardiovascular disease risk factors. Intermountain's *The Weigh to Health*® program *(see sidebar)* is an example of an intensive lifestyle intervention that may be covered by a plan. Medicare and Medicare Advantage do not cover The *Weigh to Health*®, but may have coverage for medical nutrition therapy for select patients.

Bariatric surgery for people with type 2 diabetes

Studies show that bariatric surgery can produce a remission in type 2 diabetes (normal or near-normal glycemia in approximately 55% to 95% of patients with type 2, depending on the surgery).[ADA1] Rates of remission tend to be greater with malabsorptive (bypass) procedures versus restrictive procedures. Additionally, patients with type 2 diabetes of less than two years duration tend to have the best response to bariatric surgery, while those who have had type 2 diabetes for more than 10 years or require insulin therapy may be less response.[VET] For further discussion of diabetes in remission, *see the sidebar on page 9.*

Clinical efficacy. A 2012 study by LDS Hospital researchers published in JAMA[ADAM] showed:

- **Diabetes benefits are enduring.** Among diabetes patients who had diabetes before surgery, 62% were in remission after six years. That compares to 8% and 6% for the nonsurgical groups. Gastric bypass patients who did not have diabetes before the surgery were 5 to 9 times less likely to develop the disease than nonsurgical participants.
- **Weight loss benefits are enduring.** Surgical patients lost an average of 34.9% of their initial weight after surgery, and kept off 27.7% 6 years after surgery. Nearly all the surgical patients, 96%, had maintained more than 10% weight loss from baseline, and 76% had maintained more than a 20% weight loss. By contrast, patients who did not have bariatric surgery either lost no weight or gained weight over the next 6 years.

For primary care providers, we recommend the following:

- **Consider bariatric surgery for patients with type 2 diabetes who have BMI ≥35,** particularly when diabetes or its comorbidities haven't been controlled with medication or lifestyle modifications. This recommendation follows national guidelines.[ADA]
- **Refer patient candidates to a bariatric surgery center** with **(a)** a Board-certified physician with a practice devoted to bariatric medicine; **(b)** the ability to provide presurgical consultation with dietitians, social workers, and other staff who can help patients with nutritional, psychological, and logistical (insurance) issues; and **(c)** follow-up processes and consults to manage postoperative complications and dietary regimens. For more information visit the ASMBS website or the LDS Hospital Bariatric Surgery website.
- **Postsurgery, ongoing lifestyle support is critical.**

Medication

Medication therapy includes oral and injectable antidiabetic agents as well as several classes of insulin.

- **For type 2 diabetes,** oral medication is required for glycemic control if lifestyle modifications don't achieve glycemic control within 2 to 3 months *(see page 11).* Prescribing considerations include the patient's age, weight, any renal or hepatic impairment, and cardiopulmonary comorbidities. Insulin may be used initially (often temporarily) for significant hyperglycemia and is a long-term option for patients on oral agents who still have HbA1c values more than 1% above goal.
- **For type 1 diabetes,** insulin therapy is essential. A regimen that combines long-acting, peakless insulin (basal) and rapid-acting insulin (bolus) most closely mimics normal physiologic insulin production *(see page 15).*
- **For LADA**, insulin therapy will be required eventually, if not immediately. Frequent follow-up is required to assess the patient's blood glucose control and the timing of insulin initiation.

TOOL: DIABETES MANAGEMENT ALGORITHM (CONTINUED)

INTERMOUNTAIN HEALTHCARE

ALGORITHM: TREATMENT OF TYPE 2 DIABETES—A PATIENT-CENTERED APPROACH[INZ]

CONFIRMED TYPE 2 DIABETES

- **EDUCATE** on lifestyle modifications *(see page 8)* and diabetes self-management skills and **CONSIDER REFERRAL** to a qualified **diabetes educator** and a **registered dietitian.**
- **SCREEN** for and treat diabetes related conditions (such as dyslipidemia). *See pages 18 to 28.*
- **ADDRESS** psychological and social issues.

Healthy eating, weight control, increased physical activity, and diabetes education

(a) Monotherapy

	Metformin
Efficacy*	high
Hypo risk	low risk
Weight	neutral / loss
Side effects	GI / lactic acidosis
Costs*	low

If HbA1c target not achieved after ~3 months of monotherapy, proceed to 2-drug combination (order not meant to denote any specific preference — choice dependent on a variety of patient- and disease-specific factors):

(b) Dual therapy†

	Metformin + Sulfonylurea	Metformin + Thiazolidinedione	Metformin + DPP-4 Inhibitor	Metformin + SGLT2 Inhibitor	Metformin + GLP-1 receptor agonist	Metformin + Insulin (basal)
(c) Efficacy*	high	high	intermediate	intermediate	high	highest
Hypo risk	moderate risk	low risk	low risk	low risk	low risk	high risk
(d) Weight	gain	gain	neutral	loss	loss	gain
Side effect(s)	hypoglycemia	edema, HF, fxs	rare	GU, dehydration	GI	hypoglycemia
Costs*	low	low	high	high	high	variable

If HbA1c target not achieved after ~3 months of dual therapy, proceed to 3-drug combination (order not meant to denote any specific preference — choice dependent on a variety of patient- and disease-specific factors):

(e) Triple therapy

Metformin +	Metformin +	Metformin +	Metformin +	Metformin +	Metformin +
Sulfonylurea +	Thiazolidinedione +	DPP-4 Inhibitor +	SGLT2 Inhibitor +	GLP-1 receptor agonist +	Insulin (basal) +
TZD	SU	SU	SU	SU	TZD
or DPP-4-I	or DPP-4-I	or TZD	or TZD	or TZD	or DPP-4-I
or SLGT2-I	or SLGT2-I	or SLGT2-I	or DPP-4-I	or Insulin	or SLGT2-I
or GLP-1-RA	or GLP-1-RA	or Insulin	or Insulin		or GLP-1-RA
or Insulin	or Insulin				

If HbA1c target not achieved after ~3 months of triple therapy and patient (1) on oral combination, move to injections, (2) on GLP-1-RA, add basal insulin; or (3) on optimally titrated basal Insulin, add GLP-1-RA or mealtime insulin. In refractory patients consider adding TZD or SGLTS-1:

(f) Combination injectable therapy†

Metformin +

Basal insulin + **Mealtime Insulin** or **GLP-1-RA**

(a) Initial drug monotherapy

- Begin metformin monotherapy at or soon after diagnosis (unless explicitly contraindicated).
- In patients intolerant of or with contraindications for metformin, select initial drug from other classes depicted and proceed accordingly.
- Metformin use has been associated with a 3-fold increase in vitamin B12 deficiency, which is associated with peripheral neuropathy. Periodic B12 testing is prudent to consider. Clinicians should be aware, however, that the B12 assay has highly variable results. We recommend repeat testing and methylmalonic acid or homocysteine levels to confirm diagnosis, especially in patients with low normal B12 levels. Treatment options include cyanocobalamin 1000 mcg pill taken daily, or 1000 mcg solution injected weekly for a month, then monthly indefinitely.[STA]

(b) Two-drug combinations

- If HbA1c target is not achieved after ~3 months, consider one of the six treatment options combined with metformin.
- Drug choice is based on patient and drug characteristics, with the overriding goal of improving glycemic control while minimizing side effects. Shared decision-making with the patient may help in the selection of therapeutic options.
- Consider beginning therapy with a two-drug combination in patients with HbA1c ≥9%.

(c) Medication Alternatives

- Other drugs not shown (α–glucosidase inhibitors, colesevelam, dopamine agonists, pramlintide) may be used where available in selected patients but have modest efficacy and/or limiting side effects.

(d) Insulin

- Usually basal insulin (NPH, glargine, detemir) in combination with noninsulin agents.
- **Insulin is likely to be more effective than most other agents as a third-line therapy, especially when HbA1c is very high** (e.g., ≥9%.) The therapeutic regimen should include some basal insulin before moving to more complex insulin strategies.

(e) An effective triple therapy

An especially effective option is the combination of metformin + GLP1 receptor agonist + basal insulin. This therapy is associated with less weight gain and greater reduction in HbA1c.

(f) Progression to multiple daily doses of insulin

Consider a more rapid progression from a two-drug combination directly to multiple daily insulin doses — or consider beginning at this stage — in patients with severe hyperglycemia (e.g., HbA1c ≥10% to 12%).

MEDICATION DETAILS

This section gives detailed information on medication — oral agents, non-insulin injectables, and insulin — for the treatment of adult diabetes. **If the patient has chronic kidney disease beyond Stage G2, refer to the Chronic Kidney Disease CPM for necessary dose adjustments.**

TABLE 2. Oral Agents and Non-insulin Injectable Medications

Class	Generic name (SelectHealth commercial formulary status)	Brand name	Usual dosing	2015 AWP cost for 30-day supply* (MAC Cost for generics)	Pros	Cons
biguanides	**metformin** (Tier 1)	Glucophage (Tier 3)	500 mg twice a day (once a day to start) to 1000 mg twice a day (max) Most benefit obtained between 1500–1700 mg/day	**Generic**: 500 mg twice a day: $3 850 mg twice a day: $4 1000 mg twice a day: $4 **Brand name:** 500 mg twice a day: $68 850 mg twice a day: $115 1000 mg twice a day: $139	• Extensive experience • No hypoglycemia • ↓ Weight (preferred for obese patients — most type 2 diabetics) • Favorable lipid effects • Maximum PG effect at 3–4 weeks. • ↓ insulin resistance • Consensus first-line agent	• GI distress (nausea/diarrhea) • B12 deficiency — suggest periodic testing • CHF patients should be stable • Risk of acidosis; STOP with acute illness, dehydration, or IV contrast dyes • Multiple contraindications. Do not use for patients with chronic liver disease, alcoholism, or chronic kidney disease (eGFR <30)
	metformin ER (Tier 1)	Glucophage XR (Tier 3)	500 mg to 1500 mg once a day at dinner	**Generic**: 500 mg once a day: $2 750 mg once a day: $4 1000 mg (2 × 500 mg): $4 1500 mg (2 × 750 mg): $8 **Brand name**: 500 mg once a day: $35 750 mg once a day: $52		
sulfonylureas	**glipizide XL** (Tier 1)	Glucotrol XL (Tier 3)	5 mg to 20 mg once a day (max) [may give dose twice a day]	**Generic**: 5 mg once a day: $5 10 mg once a day: $8	• Extensive experience • Well tolerated • Maximum PG effect at 5 to 7 days	• ↑ Hypoglycemia, especially with reduced GFR • ↑ Weight • Do not use with Prandin, Starlix, or other sulfonylureas • Limited duration of effect
	glimepiride (Tier 1)	Amaryl (Tier 3)	1 mg to 8 mg (max) once a day [may give dose twice a day]	**Generic**: 1 mg once a day: $2 4 mg once a day: $3		
thiazolidinediones	**pioglitazone**	Actos (Tier 3)	15 mg to 45 mg once a day (dosing at bedtime may decrease edema)	**Generic**: 15 mg once a day: $11 30 mg once a day: $13 45 mg once a day: $14	• Option for patients intolerant of metformin • No hypoglycemia • ↓ Serum insulin • Durability • ↓ Triglycerides • Possible ↓ CVD events	• Edema, especially if given with insulin; Adding spironolactone can help • Fluid retention may lead to or exacerbate heart failure or macular edema (If so, discontinue) • Bone fractures • May change metabolism of birth control pills • Slow onset: max effect in 6–12 weeks
DPP-4 inhibitors	**sitagliptin phosphate**	Januvia (Tier 3, step edit)	100 mg once a day [as monotherapy or as combination therapy with metformin or glitazones]	25 mg, 50 mg, or 100 mg once a day: $397	• Can be taken with or without food • No hypoglycemia • No weight gain • Most PG effect within 1–2 weeks of initiation	• Increased cost • Can be used only for type 2 diabetes • Reduce dose with decreasing creatinine clearance <50 — except linagliptin • Possible acute pancreatitis • Possible ↑ Heart failure hospitalizations
	saxagliptin	Onglyza (Tier 3, step edit)	2.5 mg or 5 mg once a day	2.5 mg or 5 mg once a day: $390		
	linagliptin	Tradjenta (Tier 2)	5 mg once a day	5 mg once a day: $397		
	alogliptin	Nesina (Tier 2)	6.25 mg to 25 mg orally once a day	All strengths: $374		

*AWP = Average Wholesale Pricing; MAC = Maximum Allowable Cost. Many patients may benefit from manufacturers' discounts or patient assistance programs.

TABLE 2. Oral Agents and Non-insulin Injectable Medications (continued)

Class	Generic name (SelectHealth commercial formulary status)	Brand name	Usual dosing	2015 AWP cost for 30-day supply* (MAC Cost for generics)	Pros	Cons
SGLT2 inhibitors	**canagliflozin**	Invokana (Tier 2, step edit)	100 mg or 300 mg once a day	All strengths: $411	• Non-insulin dependent — novel MOA • Low incidence of hypoglycemia • ↓ Weight	• ↑ Female genital mycotic infections, UTIs, and increased urination • Volume depletion; Use cautiously in elderly and patients already on diuretic • Possible ↑ risk of bladder cancer (dapagliflozin) • Requires normal renal function (>45 ml/min for empagliflozin and canagliflozin and >60 ml/min for dapagliflozin)
	dapagliflozin	Farxiga (Tier 3, step edit)	5 mg or 10 mg once a day	All strengths: $412		
	empagliflozin	Jardiance (Tier 2, step edit)	10 mg or 25 mg once a day	All strengths: $411		
GLP-1 receptor agonists	**exenatide**	Byetta (Tier 3, step edit)	5 mcg twice a day [within 60 minutes before breakfast and dinner; may be increased to 10 mcg twice a day after 1 month]	5 mcg twice a day: $574	• No hypoglycemia • ↓ Weight • ↓ Postprandial glycemia • Exhibits many of the same glucoregulatory actions of naturally occurring hormones	• Exenatide: Use caution when initiating or when increasing dose from 5 mcg to 10 mcg in CKD Stage G3 • All in this class: – Gastrointestinal side effects (nausea, vomiting, diarrhea) – Training requirements – ↑ Heart rate – Possible acute pancreatitis
	exenatide ER	Bydureon (Tier 3, step edit)	2 mg once every 7 days	2 mg once a week: $570		
	liraglutide	Victoza (Tier 2, step edit)	1.2 mg or 1.8 mg once a day	1.2 mg once a day: (18 mg/3mL pen): $513 1.8 mg once a day: (18 mg/3mL pen): $769		
	albiglutide	Tanzeum (Tier 3, step edit)	30 mg or 50 mg once every 7 days	30 mg or 50 mg once every 7 days: $391		
	dulaglutide	Trulicity (Tier 2, step edit)	0.75 mg or 1.5 mg once every 7 days	0.75 mg or 1.5 mg once every 7 days: $586		
amylin mimetic	**pramlintide acetate**	Symlin (Tier 2, step edit)	**See below	60 injection pen (1.5 mL): $708	Very positive effect on weight loss	Symlin should only be used by providers with significant knowledge of its properties. 3 injections per day brings significant risk of severe nausea and hypoglycemia
	**Dosing instructions for Symlin: • Type 1: 15 mcg immediately prior to major meals; increase at 15 mcg increments to a maintenance dose of 60 mcg or as tolerated. • Type 2: 60 mcg immediately prior to major meals; increase to 120 mcg as tolerated. • When initiating Symlin, reduce insulin dosages, including premixed insulins (70/30).					
combinations (examples only)	**sitagliptin + metformin XR**	Janumet XR (Tier 3, step edit)	Once a day: 100 mg/1000 mg 50 mg/500 mg two 50 mg/1000 mg	All strengths: $397	See notes for individual components *(page 12)*	
	saxagliptin + metformin XR	Kombiglyze XR (Tier 3, step edit)	Once a day: 5 mg/500 mg 5 mg/1000 mg 2.5 mg/1000 mg	All strengths: $390		
	linagliptin + metformin	Jentadueto (Tier 3)	Twice a day: 2.5 mg/500 mg 2.5 mg/1000 mg	All strengths: $397		

*AWP = Average Wholesale Pricing; MAC = Maximum Allowable Cost. Many patients may benefit from manufacturers' discounts or patient assistance programs.

METFORMIN WITH INSULIN FOR PEOPLE WITH TYPE 2 DIABETES[KOO]

A metformin and insulin combination may:

- Prevent weight gain
- Improve glycemic control
- Reduce insulin requirements

Insulin therapy

Patients with type 1 diabetes will require an insulin regimen that combines different insulins to meet basal and meal-time bolus needs. Most patients with type 1 diabetes will be on physiologic regimens. *See the notes and algorithm on the following pages for more information on a physiologic insulin regimen.* To treat patients with type 2 diabetes, keep these general principles in mind when using oral agents with insulin:

- **A basal insulin regimen (bedtime dose of peakless insulin) is our recommended first choice when adding insulin to treatment with oral agents.**
- **Consider the timing of the patient's hyperglycemia when adding or adjusting insulin.**
  - Use glargine or detemir at bedtime to control morning FPG.
  - When morning FPG is controlled with peakless insulin, daytime PPG readings frequently come under control with an oral agent and dietary modification. To control daytime PPG, sulfonylureas, DPP-4 inhibitors, and GLP-1 agonists are most effective.
  - If 2-hour postprandial PG is still above goal with FBG >100 mg/dL, consider physiologic insulin regimen with or without metformin.

TABLE 3. Insulin Profiles

Insulin type	Generic (Brand) name	Description	Onset	Peak	Usual effective duration	2015 30-Day AWP	SelectHealth commercial formulary status
Rapid-acting	aspart (NovoLog)	Clear	10 to 20 minutes	1 to 2 hours	3 to 5 hours	10 mL: $244 FlexPen 15 mL: $471	Tier 2
	glulisine (Apidra)	Clear	10 to 20 minutes	1 to 2 hours	3 to 5 hours	10 mL: $243 SoloSTAR pen 15 mL: $471	Tier 3
	lispro (Humalog)	Clear	10 to 20 minutes	1 to 2 hours	3 to 5 hours	10 mL: $243 KwikPen 15 mL: $470	Not covered
	human (Afrezza)*	Inhalation powder	10 to 15 minutes	1 hour	2 to 3 hours	equivalent to 1000 units: $630	Not covered
Regular (short-acting)	Novolin R Humulin R ReliOn R	Clear	30 to 60 minutes	2 to 4 hours	4 to 8 hours	10 mL: $132 ReliOn R 10 mL: $28	Novolin R: Tier 2 Humulin R: not covered ReliOn R: Not covered†
Intermediate-acting	NPH (Novolin N) NPH (Humulin N) ReliOn N	Cloudy	1 to 3 hours	4 to 10 hours	10 to 18 hours	10 mL: $132 ReliOn N 10 mL: $28	Novolin N: Tier 2 Humulin N: not covered ReliOn N: Not covered†
Peakless	detemir (Levemir)‡	Clear	1 hour	peakless	18 to 24 hours	10 mL: $298 FlexPen 15 mL: $447	Tier 2
	glargine (Lantus)‡	Clear	2 to 3 hours	peakless	24 + hours	10 mL: $298 SoloSTAR pen 15 mL: $447	Tier 2
	glargine U-300 (Toujeo)	Clear	develops over 6 hours	peakless	24 + hours	SoloSTAR pen 14.5 mL: $403	Not covered
Mixes	70/30 (NovoLog Mix) 75/25 (Humalog Mix) 50/50 (Humalog Mix) 70/30 (ReliOn Mix)					10 mL: $253; pen: $471 10 mL: $252; pen: $470 10 mL: $252; pen: $470 10 mL: $28	70/30 NovoLog Mix: Tier 2 Humalog Mixes: not covered ReliOn Mix: not covered†

* **Afrezza contraindications:** asthma, COPD, smokers. Requires PFT monitoring at baseline, 6 months, then yearly. Supplied in 4-unit and 8-unit single-dose cartridges. Dose adjustments are made in 4-unit increments.

† **ReliOn** is available at Walmart and is a possible option for cash-paying patients. Cash price is about $25–$30 per vial.

‡ **Peakless insulin (detemir and glargine):**

- Administer detemir insulin twice a day for type 1 diabetes and at bedtime for type 2 diabetes. Administer glargine insulin once a day for type 1 and type 2 diabetics who require long-acting insulin for control of hyperglycemia.
- Peakless insulin cannot be diluted or mixed with other types of insulin or solutions.
- Administer peakless insulin subcutaneously only — DO NOT give it intravenously.

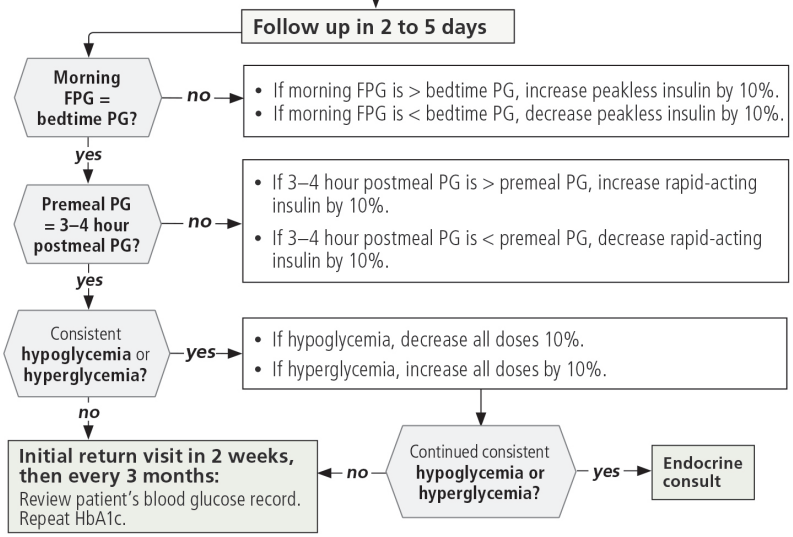
Physiologic insulin regimen: peakless + rapid-acting insulins

Using multiple daily injections (MDI), a physiologic insulin regimen most closely mimics normal insulin physiology. This intensive regimen uses peakless insulin as the basal dose and rapid-acting insulin for control with meals. Almost all type 1 patients require this physiologic (basal/bolus) regimen. Most type 2 patients who require insulin will attain good control with this regimen. For this regimen, we recommend the following:

- **Use peakless insulin to control blood glucose when not eating.** The period between bedtime and breakfast is the best reflection of how this method is working — prebreakfast blood glucose should approximate bedtime blood glucose. A bedtime snack is not required; if desirable, match its carb content with a rapid-acting insulin dose.
- **Add rapid-acting insulin prior to each meal and planned snack.**
  - Adjust this insulin to prevent post-meal hyperglycemia or hypoglycemia. Blood glucose levels 4 hours after a meal should approximate premeal levels.
  - Determine premeal rapid-insulin doses by counting carbohydrates and using an insulin-carbohydrate ratio. Alternatively, base premeal insulin dose on a fixed meal plan (budgeted carbohydrates).
  - Train patients in MNT and insulin use; support with referral to diabetes educator/registered dietitian.
  - Train patients in use of correction dose to treat hyperglycemia. (At bedtime, the correction dose may be reduced to as much as 50% of the usual correction dose.)
- **Teach patients how to modify insulin doses** when exercising, on sick days, to combat significant premeal hypoglycemia, or to prevent delayed postmeal hyperglycemia due to higher fat meals *(see sidebar on page 17)*. Support with referral to diabetes educator/registered dietitian.

ALGORITHM: INITIAL PHYSIOLOGIC INSULIN REGIMEN

- **Use recommended starting doses:** for patients with type 1, the total daily dose (TDD) of insulin is approximately 0.5 U/kg; for those with type 2, TDD is approximately 0.5 to 0.7 U/kg.
- **Teach injection technique.**
- **Divide dose as follows:** One-half of total daily dose as peakless basal insulin dose (glargine once a day or detemir twice a day regimen). Use carbohydrate ratio and correction factor to calculate premeal and bedtime rapid-acting insulin doses.
- **Instruct patient to carefully record SMBG** (before meals, at bedtime).



Insulin requirements vary considerably from patient to patient depending on the degree of insulin deficiency and resistance. These formulas are guidelines for estimating insulin doses. You will likely need to make adjustments to these estimates.

USING THE 1700 RULE

The 1700 Rule can be used to calculate:

- A correction dose of rapid-acting insulin for a high PG reading.
- An insulin-to-carb ratio to approximate the rapid-acting insulin needed to cover the carbohydrate content of a meal.

To calculate either of these doses:

- **Determine the current total daily dose (TDD):** Add up ALL the insulin (rapid and long-acting) the patient takes in a 24-hour period.
- **Divide 1700 by the TDD.** This is the predicted amount (mg/dL) the PG will decrease for each unit of rapid-acting insulin added (correction factor).

To calculate a correction dose:

- **Increase rapid-acting insulin** by the number of units needed to reduce the PG to the desired goal. Encourage patient to keep careful records of resulting PG readings, especially morning FPG, premeal 2-hour PPG, and bedtime PG.

Correction dose example:

- Patient takes 50 units of insulin per day: TDD = 50
- 1700 ÷ 50 = 34 (round to 35, which means that 1 unit of insulin will lower PG by 35 points — correction factor 35)
- If goal is 130 and PG is 165, use 1 extra unit of insulin to drop PG to about 130. If PG is 200, use 2 extra units, and so on.

To calculate an insulin-to-carb ratio:

- **Multiply predicted PG lowering (mg/dL) by 0.33.** This is the number of grams of carbohydrate covered by 1 unit of insulin. For most people, a starting dose would be 1 unit of rapid-acting insulin for every 10 to 15 grams of carbohydrate to be eaten.

Insulin-to-carb ratio example:

- Patient takes 50 units of insulin per day: TDD = 50
- 1700 ÷ 50 = 34 (round to 35, which means that 1 unit of insulin will lower PG by 35 points)
- 35 × 0.33 = 12, which means that you'll need 1 unit of insulin for every 12 grams of carbohydrate anticipated in a meal.

EXAMPLE OF WEEKLY TITRATION SCHEDULE

(Treat-to-Target Trial)[RID]

A large, randomized controlled trial showed that systematically titrating **bedtime basal insulin added to oral therapy** can safely achieve 7% HbA1c in overweight patients with type 2 diabetes as compared to 7.5% to 10% HbA1c in those patients on oral agents alone.

- **Start with 10 IU at bedtime.**
- **Titrate weekly based on FBG values over 3 days**, as shown in the table below.

Forced weekly insulin titration schedule
(for treat-to-target FBG of <120 mg/dL)

Mean of FBG values over 3 days	Increase of insulin dosage (IU/day)
>180 mg/dL	+8
160–180 mg/dL	+6
140–159 mg/dL	+4
120–139 mg/dL	+2

Use glargine or detemir with this titration schedule to significantly reduce nocturnal hypoglycemia. Using insulin can help achieve recommended standards of diabetes care more quickly.

HIGHER DIETARY FAT AND POSTMEAL HYPERGLYCEMIA

Higher dietary fat intake can cause late postprandial hyperglycemia. This can be addressed either by reducing fat intake (especially for type 2 patients on nonphysiologic regimens) and/or by adjusting premeal insulin doses (for type 1 patients on rapid-acting insulin). Practical ways to compensate for a high-fat meal include splitting premeal insulin into 2 injections from 1 to 3 hours apart, or using an extended bolus. The total amount of insulin provided may need to be increased from the usual dose as well. The response to dietary fat will vary according to the individual and the specific foods, so defining insulin adjustments may require multiple attempts.

Basic (nonphysiologic) regimen: NPH + rapid-acting insulin

Basic insulin therapy is not designed to mimic normal insulin physiology. Although a basic regimen is not recommended for type 1 patients, it may provide adequate control for type 2 patients who have not been successful with oral medication combinations or with patients who are not able to manage a multiple daily dose regimen as required in physiologic insulin therapy.

For a basic insulin therapy regimen to be successful, a patient must be consistent with meals and adhere to a medical nutrition therapy plan.

Sample basic insulin regimens

Following are some sample basic insulin regimens.

- **Premixed insulins:** These insulins are all given twice a day (before breakfast and before the evening meal)
  - 70% aspart protamine suspension / 30% aspart injection (NovoLog Mix 70/30)
  - 70% NPH / 30% regular (Novolin 70/30)
- **Split-mixed insulins:** NPH is given twice a day (either morning and before the evening meal, or morning and bedtime) with:
  - Regular insulin before breakfast and before the evening meal

    OR
  - Rapid-acting insulin before breakfast and before the evening meal

Glucose management in special circumstances

Some circumstances — such as when a patient is preparing for a test or procedure, has had a cortisone injection, etc. — may require temporary adjustment to diabetes treatment. We advise the following:

- **Before surgery:** Optimize glycemic control and temporarily stop metformin if appropriate.
- **When patient receives a steroid (injection or oral):** Advise more frequent SMBG and adjust medications as needed. Patients often experience a worsening of glycemic control after an injection.
- **When patient is fasting prior to a test or procedure:** Adjust glucose-lowering medications as needed.
- **Illness:** Consider increasing frequency of blood glucose monitoring. Metformin may need to be held if the patient is at risk for dehydration.

SGAs and metabolic abnormalities

Although the second-generation antipsychotic medications (SGAs) have many notable benefits compared with their earlier counterparts, their use has been associated with reports of significant weight gain, diabetes (even DKA), and a worsened lipid profile (increased LDL and triglyceride levels and decreased HDL cholesterol).[ADAP,NEW] This has led to growing concern about a possible link between these metabolic effects and therapy with SGAs. There are also data that suggest these agents elevate the risk for sudden cardiac death.

The table below shows the metabolic abnormalities associated with various SGAs. Given these findings and the increased use of SGAs, we recommend the following:

TABLE 4. SGAs and Metabolic Abnormalities[NEW]

Generic (brand) name	Weight gain	Risk for diabetes	Worsening lipid profile
clozapine (Clozaril)	+++	+	+
olanzapine (Zyprexa)	+++	+	+
risperidone (Risperdal)	++	+	+
quetiapine (Seroquel)	++	+	+
aripiprazole (Abilify)*	+/–	–	–
ziprasidone (Geodon)*	+/–	–	–

+ = increased effect – = no effect

* newer drugs with limited long-term data

- **Monitor patients regularly (perhaps monthly) after SGA therapy is initiated.** Measure weight, glucose, blood pressure, and lipids.
- **Consider switching the SGA if a patient gains ≥5% of his or her initial weight at any time during therapy.** Note that abruptly discontinuing clozapine has the potential for serious psychiatric sequelae.

IMMUNIZATIONS

Influenza and pneumonia are common and preventable infectious diseases. These diseases are associated with high mortality and morbidity in people with chronic diseases such as diabetes. This CPM recommends the following vaccinations for patients with diabetes:

- **Annual influenza vaccination for all patients over 6 months of age.** Patients with diabetes show an increased rate of hospitalization for influenza. The influenza vaccine can reduce hospital admissions for these patients by as much at 79% during flu epidemics.[COLQ]
- **Pneumococcal vaccine for all adult patients with diabetes.** Patients with diabetes may be at increased risk of bacterial pneumonia and have a high reported risk of nosocomial bacteremia, which has a mortality rate as high as 50%.[SMI] Patients with diabetes need the following pneumococcal vaccines:
  - Age 19 to 64: one dose PPSV23.
  - Age 65 or older: one dose PPSV23. If patient has not previously received PCV13 as an adult, give also one dose PCV13 (preferably before PPSV23). Doses need to be separated by one year.

    Note: CMS-Medicare Part B now covers both PCV13 and PPSV23, given at least one year apart.
- **Hepatitis B vaccination for unvaccinated adults with diabetes under age 60.** In 2013, the Advisory Committee on Immunization Practices of the CDC recommended that all previously unvaccinated adults with diabetes aged 19 through 59 years be vaccinated with 3 doses of hepatitis B vaccine, and that vaccination be considered for those aged ≥60 years, after assessing risk and likelihood of an adequate immune response.[ADA] This acknowledges increased risk of Hepatitis B in institutionalized (e.g., nursing home, prison) patients.

TOOL: DIABETES DECISION GUIDE

SUTTER HEALTH

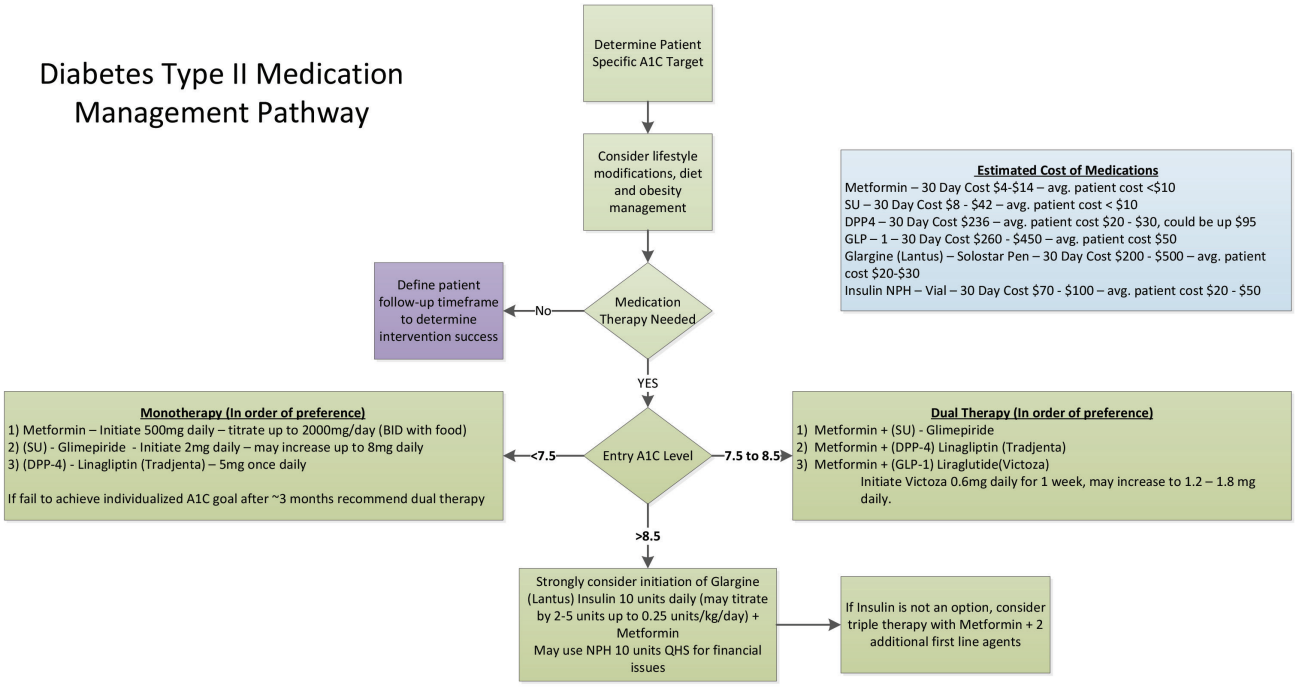
Sutter Health Diabetes Decision Guide - 2015

	Treatment Type	Common Name of Medication	How Works	How Taken	Risks/ Side Effects	A1C Lowering (average)	Risk of Low Sugars	Potential Weight Change (average)	Cost
Lifestyle	Diet, Exercise, Weight Loss, Stress Mgmt.		Liver, Pancreas, Stomach, Brain	Lifestyle change		Variable	Variable	Variable	Variable
Pills	Biguanide	Glucophage Metformin	Liver	Pill Once daily	• Stomach upset • Not if kidney issues	1.0-2.0	No	None	Generic $
	Sulfonylurea	Glipizide, Glimepiride Glyburide	Pancreas	Pill Twice daily	• Low blood sugar	1.0-2.0	Yes	2 lbs gain	Generic $
	Glinide	Starlix Prandin	Pancreas	Pill With meals	• Low blood sugar	0.5-1.0	Yes	2 lbs gain	Generic $
	TZD	Pioglitazone (Actos)	Cells	Pill Once daily	• Swelling • Bladder cancer • Broken bones • Heart problems • Eye problems	0.5-1.5	No	4-6 lbs gain	Generic $
	DPP-4 Inhibitor	Januvia Onglyza Tradjenta, Nesina	Liver, Pancreas, Stomach, Brain	Pill Once daily	• Possible pancreas effects • Unknown long term effects	0.5	No	None	Brand $$$$
	SGLT-2 Inhibitor	Invokana Farxiga Jardiance	Kidney	Pill Once daily	• Dehydration/dizziness • Yeast and urinary tract infections • Kidney issues/high potassium • Unknown long term effects • Possible diabetic ketoacidosis	0.5-1.0	No	4-6 lbs loss	Brand $$$$
Injections	GLP-1 Therapy	Byetta (2x/day) Victoza (1x/day) Bydureon (1x/wk) Trulicity (1x/wk) Tanzeum (1x/wk)	Liver, Pancreas, Stomach, Brain	Injection Once daily or Once weekly	• Stomach upset • Not if thyroid cancer • Possible /pancreas effects • Affected by kidney issues • Unknown long term effects	1.0-2.0	No	4-6 lbs loss	Brand $$$$
	Basal Insulin	Lantus, Levemir Toujeo (U-300) NPH	Slow release	Injection Once daily		Unlimited	Yes	2-4 lbs gain	Brand $$$$
	Mealtime Insulin	Humalog, Novolog Apidra, Regular Afrezza (inhaled)	Rapid release	Injection With meals					
	Premix Insulin	70/30 Novolog 75/25 Humalog	Mixed slow and rapid	Injection Twice daily					

TOOL: DIABETES PATHWAYS

CORNERSTONE HEALTH CARE, P.A.

Diabetes Type II Medication Management Pathway



Condition Specific / Contraindication Recommendations				
**	USE	OK to USE	Less Preferable	Contraindicated
Weight Loss Desired	Metformin,GLP-1	Tradjenta	SU, Insulin	
Renal Failure	DPP-4, GLP-1	Other DPP-4(dose adjusted), TZD	Insulin	Metformin, SU
CHF / CVD	Metformin, Insulin	DPP-4, GLP-1	SU	SU, TZD
Hypoglycemia Concern	Metformin	DPP4, GLP1, TZD	SU, Insulin	

**1) Adopted from AACE Comprehensvie Diabetes management Algorithim, Endo Prac, 2013: 19. Pg 328-336

**2) ADA Position Statement: Standards of Medical Care in Diabetes-2012. Diabetes Care, Volume 35, Supplement 1, P S11-S63: Jan 2012

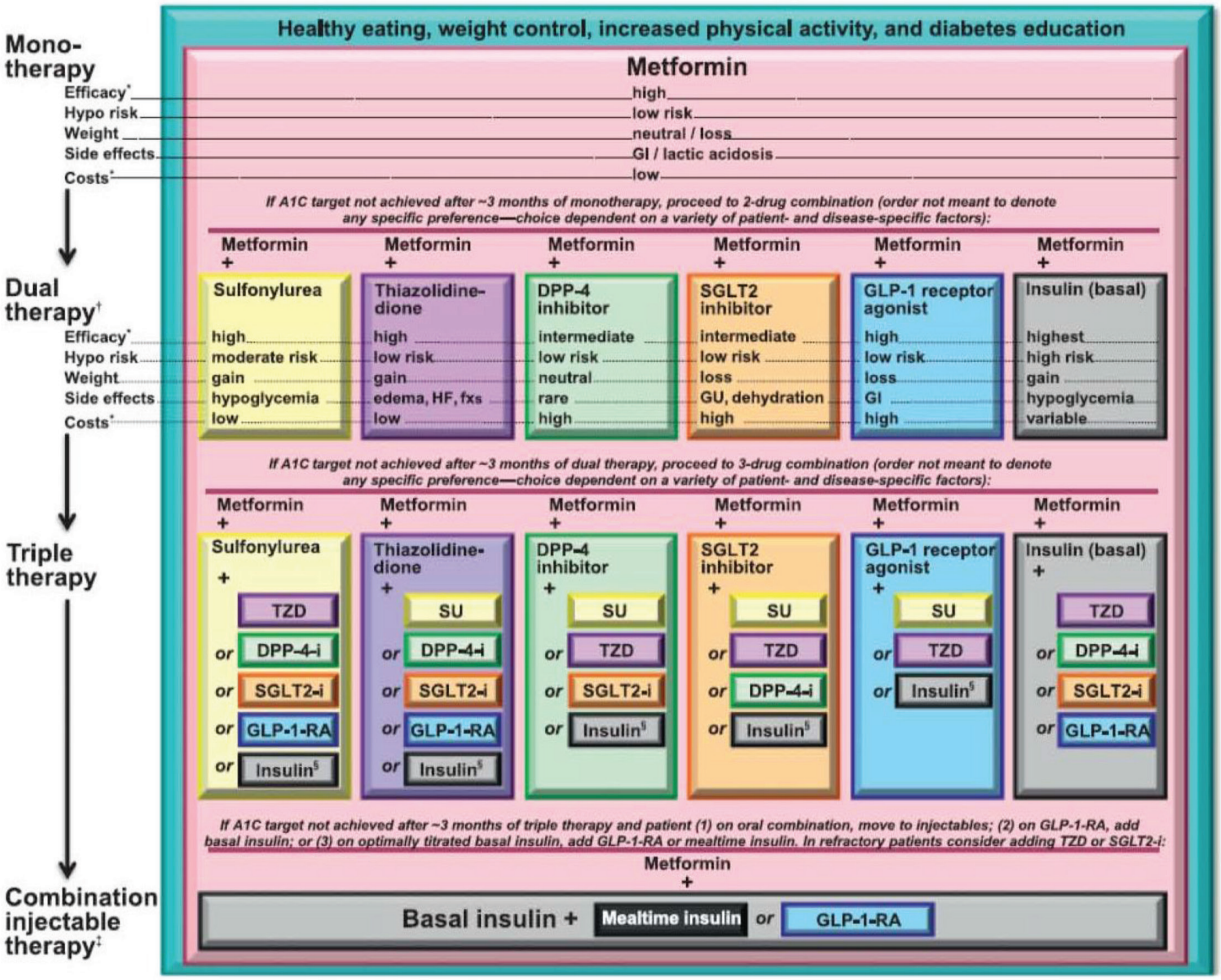
TOOL: TREATMENT ALGORITHM

MERITER-UNITYPOINT HEALTH

MERITER Medical Group

Diabetes Update – 2015

Citation:
Diabetes Care, Standards of Medical Care in Diabetes
January 2015, Volume 38, Supplement 1, Page S43



Antihyperglycemic therapy in type 2 diabetes: general recommendations. The order in the chart was determined by historical availability and the route of administration, with injectables to the right; it is not meant to denote any specific preference. Potential sequences of antihyperglycemic therapy for patients with type 2 diabetes are displayed, with the usual transition moving vertically from top to bottom (although horizontal movement within therapy stages is also possible, depending on the circumstances). DPP-4-i, DPP-4 inhibitor; fxs, fractures; GI, gastrointestinal; GLP-1-RA, GLP-1 receptor agonist; GU, genitourinary; HF, heart failure; Hypo, hypoglycemia; SGLT2-i, SGLT2 inhibitor; SU, sulfonylurea; TZD, thiazolidinedione.

†Consider starting at this stage when A1C is $9%.

‡Consider starting at this stage when blood glucose is $300–350 mg/dL (16.7–19.4 mmol/L) and/or A1C is $10–12%, especially if symptomatic or catabolic features are present, in which case basal insulin 1 mealtime insulin is the preferred initial regimen. §Usually a basal insulin (NPH, glargine, detemir, degludec). Adapted with permission from Inzucchi et al.

MEASURE HbA1c EVERY 3-6 MONTHS

HbA1c is measured every three to six months for patients with Type 2 diabetes, according to American Diabetes Association (ADA) guidelines. This will occur without exception and processes are in place to monitor system adherence and conduct outreach to patients overdue for testing.

HbA1c is the most important surveillance tool to monitor glycemic control and provides an accurate reflection of how well the treatment plan is working. HbA1c levels are predictive of risk for diabetic microvascular complications. The ADA's Standards of Medical Care recommend that HbA1c testing be done for patients with Type 2 diabetes at least two times per year for those meeting treatment goals, and quarterly for those whose therapy has changed or are not at target.

Successful diabetes improvement interventions assure that patients are aware of the need for testing, create monitoring systems to assure testing is completed, perform routine outreach to those who are overdue, and embed patient education to convey the importance and meaning of the results. Equally critical is the need for care providers to respond timely to the HbA1c result by intensifying treatment for all those not at target.

STEPS TO ASSURE HbA1c TESTING IS BEING PERFORMED EFFECTIVELY FOR YOUR DIABETES POPULATION

- Incorporate HbA1c testing frequency recommendations into your guidelines (refer to Adopt Treatment Algorithm plank).
- Include specific HbA1c frequency in each individual patient's care plan.
- Make HbA1c awareness a key component in your patient education efforts. Use simple language, pictures, and patient stories that communicate the critical importance of this test.
- Add language to the after-visit summary, your patient portal, and other individualized patient materials that explains the meaning of the HbA1c test, indicates whether the patient is at target range, and displays when the patient is due for his or her next test.
- Create a list from your diabetes registry at a specified interval (e.g., monthly, quarterly) of patients overdue for HbA1c testing. Consider starting by identifying patients who have not had an HbA1c test in over a year. For more information, refer to Use a Patient Registry plank.
- Contact those overdue for testing using letters, phone calls, or automated tools such as text messaging.
- Use point-of-care alerts within the EHR that indicate if a patient is overdue. Consider implementing these prompts for all providers, not just primary care, and developing standardized processes to alert patients at the time of their visit to obtain necessary testing.
- Implement standard order sets for patients with diabetes that can be deployed by non-physicians to facilitate HbA1c testing.
- Monitor your organization's HbA1c testing performance on and report back to the Accountable Diabetes Team (refer to Build an Accountable Diabetes Team plank).
- Include data comparing A1c ordered versus completed as part of your internal reports (refer to Publish Transparent Internal Reports plank) to illustrate potential gaps in care.
- Incorporate simple, low-cost strategies, such as room signage with a clear call-to-action, to foster discussion regarding needed testing.

TOOL: DIABETES MEDICATION REFILL AND VISIT FREQUENCY GUIDELINES

MERITER-UNITYPOINT HEALTH

MERITER Medical Group

Diabetes Update – 2015

MMG Diabetes Medication Refill and Visit Frequency Guidelines

Care Team actions: During most patient contacts and for chart prep, review the following

- ✓ Review most recent A1c
- ✓ Verify that meds are filled and check medication response/tolerance
- ✓ Check standing/future lab orders and create standing orders as needed (A1c, LDL, serum creatinine, urine micro-albumin) if needed
- ✓ Reinforce home glucose monitoring if patient is monitoring
- ✓ Assure next visit is scheduled

Last A1c	Refills	Visit frequency	Additional Care Team Actions
1. New medication regardless of A1c	60 days max	Office visit within 30 days	• Contact every 2 weeks via phone or MyChart
2. Last A1c >6 months ago	30 day refill	Office visit within 30 days	
3. A1c typically less than 7 (A1c Control Goal)	6 month refill	Every 6 months	• Screen for hypoglycemia
4. A1c 7.0 to 7.9	3 month refill	Every 3 months	
5. A1c 8 - 9	3 month refill	Every 3 months	• If A1c ≥ 8 for 6 months pend order to DCT and/or pharmacists
6. A1c >9	1-3 month refill based on compliance, comorbidities, home blood glucose monitoring	Visits every 6 weeks	• Contact every 2 weeks via phone or MyChart • Monitor blood glucose checks via MyChart or phone outreach • Pend order to DCT

List of useful DM related smart phrases (type "Diabetes" to view full list)

• *Lastdiabetes3ref* (last 3 diabetes lab results) • *Medrfdm* (last office visit DM labs/refill info)	• *Diabeticteach* (review DM teaching book/ glucometer) • *DM foot exam*

ASSESS AND ADDRESS RISK OF CARDIOVASCULAR DISEASE

Care teams systematically evaluate each patient's risk for cardiovascular disease, using a trusted risk assessment tool. For patients at risk, treatment plans include primary and secondary prevention in accordance with American Diabetes Association (ADA) recommendations for lifestyle, lipid-lowering and antihypertensive medications, and aspirin.

Heart diseases and stroke are the top causes of death and disability among people with Type 2 diabetes. In fact, at least 65 percent of people with diabetes die from some form of heart disease or stroke. To reverse these trends, care teams must assess risk of cardiovascular disease for people with Type 2 diabetes and intervene in order to prevent these major health events.

TIPS TO INCORPORATE CARDIOVASCULAR RISK ASSESSMENT

- Use the ACC/AHA ASCVD Risk Calculator (refer to Appendix E: Suggested Readings for a link) for all patients with Type 2 diabetes over 40 years old annually, but including those who are newly diagnosed with the condition.
- Develop a workflow to facilitate ease of adoption. This workflow may incorporate:
  - Inclusion of point-of-care alerts,
  - Delegation of this responsibility (e.g., to a medical assistant or care coordinator),
  - Development of automated tools built into the EHR, and
  - Utilization monitoring of these tools (e.g., Did a point-of-care alert appear and was statin ordered, if appropriate? Did medication reconciliation include statin adherence over 80%?).
- Ensure the results are entered into the EHR and/or your diabetes registry in a discrete, searchable field.
- Educate clinicians and care team members about the importance of cardiovascular risk assessment for patients with Type 2 diabetes, the approved workflow, and appropriate management per your organization's treatment algorithms (refer to Adopt Treatment Algorithm plank).
- Develop or adopt treatment guidelines that include use of moderate- or high-intensity statins, lifestyle changes, antihypertensive medications, and aspirin for at-risk patients.
- Establish a process to assess medication adherence such as patient questionnaires, self-reports, pill counts, and pharmacy refills.
- Offer patient education materials and self-management tools that are culturally appropriate and accessible to audiences with low literacy.
- Monitor use of the risk calculator and adherence to the workflow and report back to the Accountable Diabetes Team at your organization (refer to Build an Accountable Diabetes Team plank).
- Leverage the work previously completed in your organization with Measure Up/Pressure Down® or other related efforts.

TOOL: CARDIOVASCULAR DISEASE ALGORITHM

INTERMOUNTAIN HEALTHCARE

PREVENTION AND MANAGEMENT OF RELATED CONDITIONS

Patients with diabetes are likely to have related conditions such as:

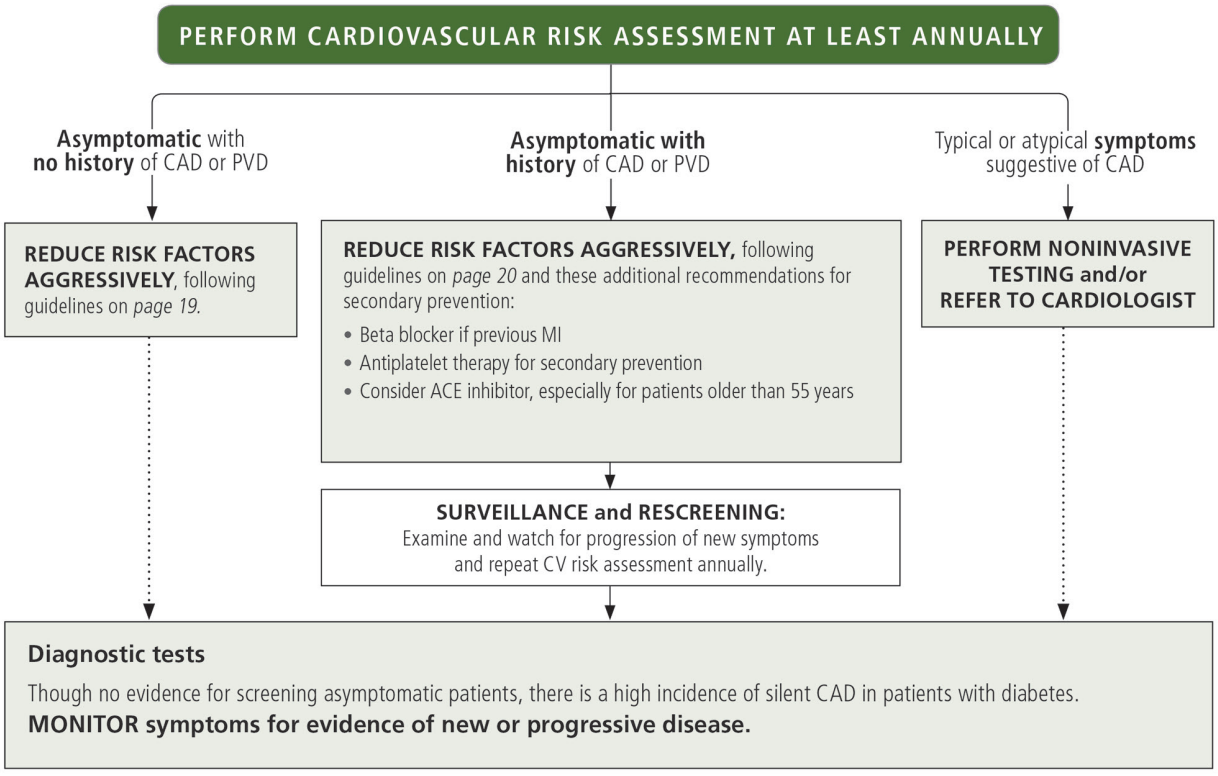
- Cardiovascular disease *(p. 18)*
- High cholesterol *(p. 20)*
- High blood pressure *(p. 22)*
- Kidney disease *(p. 24)*
- Retinopathy *(p. 25)*
- Low testosterone in men *(p. 25)*
- Foot problems *(p. 26)*
- Obstructive sleep apnea *(p. 28)*
- Conditions associated with type 1 diabetes *(p. 28)*

This section gives an overview of risks, goals, and management options for these conditions that often accompany or result from diabetes.

Cardiovascular disease

Diabetes is considered a cardiovascular disease equivalent, and patients with diabetes have a 2 to 8 times higher prevalence of, incidence of, and mortality from all forms of cardiovascular disease than those without diabetes.[GRU] All patients with diabetes should be assessed annually for cardiovascular risk. Treat all risk factors aggressively, and perform further screening and diagnostic testing as suggested in the algorithm below.

ALGORITHM: RISK ASSESSMENT & SCREENING FOR CARDIOVASCULAR DISEASE



CAD = coronary artery disease; PVD = peripheral vascular disease; ECG = echocardiogram

Multifactorial risk reduction for cardiovascular disease

In patients with diabetes, risk factors for cardiovascular disease and cardiovascular events are similar to those in patients without diabetes. However, the magnitude of risk may be greater. Research suggests that long-term control of blood glucose, blood pressure, and lipids can substantially reduce these risks in all patients, but that patients with diabetes may benefit to an even greater extent.[ADA1,GAE]

We recommend helping patients lower their cardiovascular risk by promoting lifestyle modifications as needed (smoking cessation, weight loss, etc.) and following the guidelines in this CPM for good management of glucose, lipids, and blood pressure. **Also consider using proven medications in appropriate patients; see the discussion below.**

ACE inhibitors

Several studies have shown that ACE inhibitors can reduce cardiovascular complications even more than can be explained by blood pressure reduction alone. For example, the HOPE trial showed a reduction in cardiovascular events in diabetes patients over 55 years of age with normal blood pressure. If not contraindicated, consider an ACE inhibitor in all patients over 55 years of age, with or without hypertension, with any additional risk factor such as history of cardiovascular disease, dyslipidemia, increased urinary albumin, or smoking.[DAG]

Beta blockers

Patients with diabetes and significant coronary artery disease may benefit from beta blockers, especially those who have had a coronary event within the previous 2 years.

Aspirin therapy[UTA]

For secondary prevention in people with atherosclerotic vascular disease, low-dose aspirin provides a substantial 20% relative risk reduction (RRR) and 1.5% per year absolute risk reduction (ARR) in recurrent cardiovascular disease (CVD) events. However, for primary prevention the relative and absolute benefits of aspirin are much lower — just 12% RRR and 0.06% per year ARR in CVD events. For primary prevention in people with diabetes, recent randomized trials and meta-analyses of available trials have found a similar 10% RRR in CVD events. Given the uncertain efficacy of aspirin for primary prevention of CVD in adults with diabetes and its recognized risk for upper gastrointestinal bleeds and hemorrhagic stroke, a **2010 expert consensus document suggested that for primary prevention, aspirin therapy should be guided by a combined assessment of either age, sex, and other CVD risk factors or by an estimate of absolute 10-year CVD risk.** Risk can be calculated via the resources noted at right.

For patients with no history of CVD who are not at increased risk for bleeding (no history of prior gastrointestinal bleeding, no prior peptic ulcer disease, no concurrent warfarin or NSAID therapy), **we recommend aspirin at a dose of 75 to 162 mg/day following the guidelines below.**

Aspirin is ***recommended*** for:	Aspirin may be ***considered*** for:	Aspirin is ***not recommended*** for:
• Adults with >10% 10-year CVD risk* ***or for*** • Most men >50 years and women >60 years with any of these **risk factors:** ❑ Smoking ❑ High cholesterol ❑ High blood pressure ❑ Family history of premature CVD ❑ Albuminuria	• Adults with 5–10% 10-year CVD risk* ***or for*** • Men >50 years or women >60 years with none of the risk factors noted in the first column ***or for*** • Men ≤50 years or women ≤60 years with one or more risk factors noted in the first column	• Adults with < 5% 10-year CVD risk* ***or for*** • Men < 50 years and women < 60 years with none of the risk factors noted in the first column

BEYOND CVD

In addition to heart disease, many complex factors contribute to reduced cardiopulmonary function in patients with diabetes, including:

- Obstructive sleep apnea
- Diastolic dysfunction
- Reduced pulmonary diffusing capacity
- Functional restrictive lung disease

These conditions are commonly underdiagnosed in patients with diabetes. However, they can aggravate hypertension, cause fatigue, and reduce exercise capacity. The cornerstones of therapy are:

- Tight blood pressure control
- Blood glucose control
- Weight loss

Calculate 10-year CVD risk

The American Heart Association and American College of Cardiology[ACC] recommend the new Pooled Cohort Risk Equation to evaluate 10-year and lifetime risk of ASCVD. It is available at:

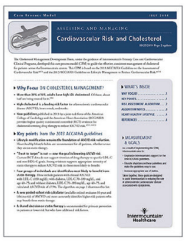
tools.cardiosource.org/ASCVD-Risk-Estimator

TOOL: CHOLESTEROL ALGORITHM

INTERMOUNTAIN HEALTHCARE

CARDIOVASCULAR RISK AND CHOLESTEROL CPM

The 2014 *Cardiovascular Risk and Cholesterol CPM* provides further guidance on treating dyslipidemia.



Click the image to open the document, or see page 31 for ordering information.

DIABETES AND AGE 20–39 OR OVER 75: INTERMOUNTAIN RECOMMENDATIONS

For patients with diabetes who are outside the 40–75 age range, the AHA/ACC did not have enough data to make clear recommendations. Intermountain experts in cardiology and primary care recommend shared decision making with patients in these categories, considering the patient's cumulative risk factors and patient preference in making the final decision:

- For nonpregnant patients age 20–39
  - If lifetime ASCVD risk is 30% to 40%, consider a low-intensity statin.
  - If lifetime ASCVD risk is >40%, consider a moderate-intensity statin.
- For patients older than 75, consider a moderate-intensity statin.

STATIN INTOLERANCE

Statin intolerance may occur in 5% to 15% of patients:

- Symptoms include myalgias, proximal and symmetrical, often in the thighs.
- Symptoms typically occur 1 month after statin start or change, and are often dose-dependent. Confirmation of intolerance may require a 2 to 6 week trial off statin.
- **Treatment options** include lowering statin dose by 50%; reducing frequency to every other day or less often; and trials of other statins, e.g., pravastatin or rosuvastatin.

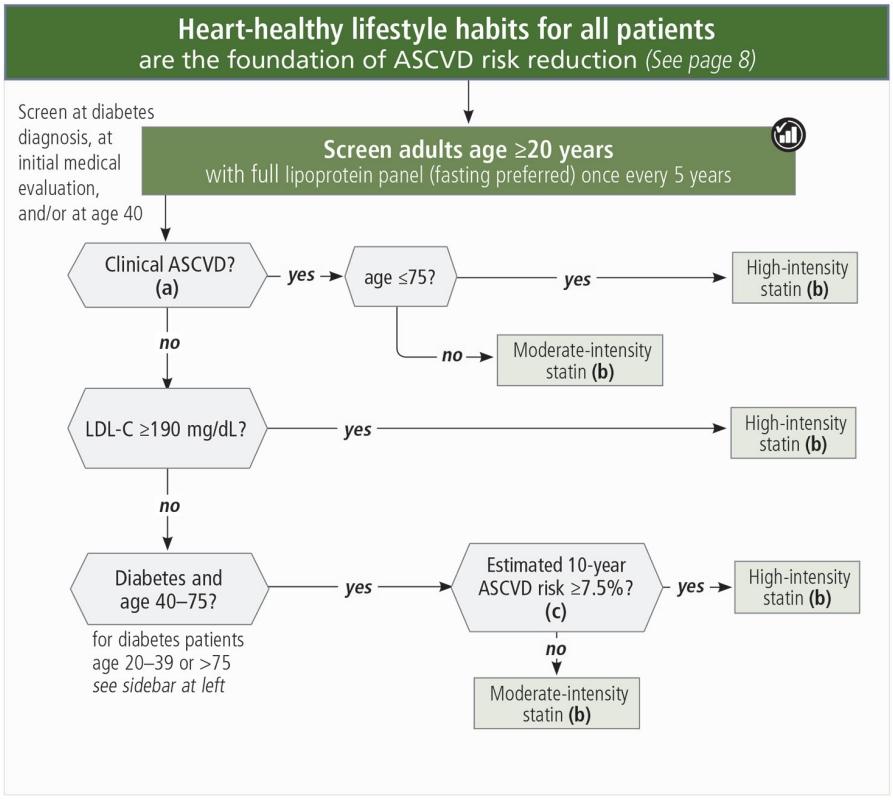
High cholesterol

Diabetes mellitus is associated with multiple lipid abnormalities, most typically hypertriglyceridemia, low HDL cholesterol, and increased numbers of small, dense LDL cholesterol particles. Insulin resistance, insulin deficiency, hyperglycemia, and obesity are common contributing factors for dyslipidemia in people with diabetes. Multiple studies have demonstrated that treating dyslipidemia can improve cardiovascular disease outcomes in people with diabetes.[COLH,HEA,SEV]

Recommendations on cholesterol management have recently changed. In 2013 the American Heart Association and American College of Cardiology revised their cholesterol treatment guidelines to recommend that **treatment initiation and initial statin dose be driven primarily by risk status, not by LDL cholesterol level.** The 2015 ADA Standards recommend following this guideline for diabetes treatment.[ADAA] The algorithm below is taken directly from Intermountain's Cardiovascular Risk and Cholesterol CPM.

Some controversy exists around the new recommendations. The National Lipid Association (NLA) continues to recommend initiation of statin therapy based on lipid targets. For a detailed comparison of AHA and NLA recommendations, visit **www.lipid.org/recommendations**.

▸ ALGORITHM: ASSESSING AND MANAGING CHOLESTEROL LEVELS AND ASCVD RISK



Indicates an Intermountain measure

TOOL: CHOLESTEROL ALGORITHM (CONTINUED)

INTERMOUNTAIN HEALTHCARE

ALGORITHM NOTES

(a) Clinical ASCVD

Clinical ASCVD is defined as one or more of the following:

- Acute coronary syndromes
- History of MI
- Stable or unstable angina
- Coronary or other arterial revascularization
- Atherosclerotic stroke
- Atherosclerotic TIA
- Atherosclerotic peripheral artery disease
- Abdominal aortic aneurysm

Treatment fundamentals for patients with clinical ASCVD:

A — Aspirin/antiplatelet therapy

B — Blood pressure control

C — Cholesterol control and Cigarette smoking cessation

D — Diet and weight management and Diabetes and blood glucose control

E — Exercise

(b) Statin Therapy[ACC] *(Do not prescribe if patient is pregnant or lactating)*

High-intensity statin therapy (For patients with clinical ASCVD and age <75, LDL-C >190, diabetes and age 40 to 75 with other risk factors, or >7.5% 10-year ASCVD risk)	Moderate-intensity statin therapy (For patients with clinical ASCVD and age >75, diabetes and age 40 to 75 without other risk factors, or 5%–7.5% 10-year ASCVD risk)	Low-intensity statin therapy (For patients with < 5% 10-year ASCVD risk and other risk factors)
Daily dose lowers LDL-C on average by approximately 50% or more*	Daily dose lowers LDL-C on average by approximately 30% to 50%*	Daily dose lowers LDL-C on average by up to 30%*
• **Atorvastatin (40†)–80 mg** • Rosuvastatin 20 (40) mg	• **Atorvastatin 10** *(20)* **mg** • **Simvastatin 20 mg–40 mg**‡ • **Pravastatin 40** *(80)* **mg** • **Lovastatin 40 mg** • Fluvastatin XL 80 mg • Fluvastatin 40 mg bid • Pitavastatin 2 mg–4 mg • Rosuvastatin (5) 10 mg	• **Pravastatin 10 mg–20 mg** • **Lovastatin 20 mg** • Simvastatin 10 mg • Fluvastatin 20 mg–40 mg • Pitavastatin 1 mg

Bold text indicates preferred drug.

(c) New Pooled-Cohort Risk Calculator

The American Heart Association and American College of Cardiology[ACC] recommend the new Pooled Cohort Risk Equation to evaluate 10-year and lifetime risk of ASCVD and more accurately identify higher-risk patients who may benefit from statin therapy.

Available at: tools.cardiosource.org/ASCVD-Risk-Estimator

OTHER ISSUES

Triglycerides: If triglycerides are over 500 mg/dL, treat to reduce risk of pancreatitis. There is no evidence of cardiovascular risk reduction from treatment.

Blood glucose: The impact of statins on blood glucose is small and should not influence the decision to prescribe.

Other classes of lipid-lowering medications:

- **Fibrates.** Gemfibrozil should not be initiated in patients on statin therapy because of an increased risk for muscle symptoms and rhabdomyolysis. Fenofibrates may be considered concurrent with low- or moderate-intensity statin only if benefits are judged to outweigh risks.
- **Ezetimibe.** May show some benefit. Make shared decision with patient.
- **Omega-3 fatty acids** (fish oil supplements). Not recommended.
- **Bile acid sequestrants.** Consider using colesevelam for statin-intolerant patients.

TOOL: HYPERTENSION ALGORITHM

INTERMOUNTAIN HEALTHCARE

HIGH BLOOD PRESSURE CPM

The 2014 *High Blood Pressure CPM* provides further guidance on treating high blood pressure. It recommends a standardized medication cascade for most patients.

Click the image to open the document, or see page 31 for ordering information.

High blood pressure

High blood pressure affects most patients with diabetes. Aggressive treatment of high blood pressure has been convincingly shown to reduce cardiovascular risk in these patients **to an extent equal to or greater than the effect of glucose control.**[UKPD,JAM] The 2015 ADA Standards of Medical Care in Diabetes changed the recommended goal for diastolic blood pressure in most patients with diabetes from 80 mm Hg to 90 mm Hg, reflecting the clearest evidence from randomized clinical trials.

The algorithm below is a shortened version of the algorithm in the High Blood Pressure CPM and is consistent with the recommendations in the ADA Standards. Using the same treatment protocol across the system has been shown to facilitate consistent team-based care.

ALGORITHM: MANAGEMENT OF HYPERTENSION

General approach for most patients under 80 years old

Check BP at each office visit (a)

Systolic ≥140 *or* Diastolic ≥90? — *No* → back to Check BP

Yes

RECHECK to confirm high BP (b)
- Follow-up office visit
- Home BP readings

High BP confirmed? — *No* → back to Check BP

Yes

TREAT high BP to management target: <140/<90 (c)
- Consider individualized target as needed based on patient's clinical circumstances.
- Consider secondary causes of high BP **(g)**

INITIATE therapeutic lifestyle changes (TLC) (d)
- Start meds concurrently with TLC.
- Maintain TLC throughout course of treatment.

ACEI *(or ARB)*: **lisinopril** *(or losartan)* **(e)**
Lisinopril titration: 10 mg daily ➔ 20 mg daily

For patients who require additional medications to manage high blood pressure, refer to the High Blood Pressure CPM.

Treatment process:

- **Evaluate BP every 2 weeks** while titrating or switching medications. **(d)**
- **Order BMP 2–3 weeks** after initiation or dose changes of lisinopril or HCTZ.
- **Consider divided dosing** (AM/PM) when patient is on more than one medication.
- **When BP is at target**, maintain current therapy and evaluate BP every 6 months.

Special populations:

See note ***(f)*** for options in treating high blood pressure in the following:
- Prediabetes
- Coronary artery disease
- Heart failure
- Chronic kidney disease
- Black patients (African descent)
- Older patients (≥80 years)
- Pregnancy

Indicates an Intermountain measure

TOOL: HYPERTENSION ALGORITHM (CONTINUED)

INTERMOUNTAIN HEALTHCARE

ALGORITHM NOTES

(a) Check BP at Each Office Visit

Best practices for consistent BP readings:

- Patient should be seated with feet on the floor, back supported, and arm supported at heart level
- Rest for 5 minutes, empty bladder if necessary, and wait at least 30 minutes since last heavy meal, heavy exercise, or intake of caffeine, alcohol, or nicotine
- Use appropriate size cuff (not too small)
- Avoid talking with the patient or asking questions while taking BP

See the High Blood Pressure CPM for more detail.

(b) Confirming High BP

Methods

Follow-up office visit	High BP can be confirmed through 2 office visits total, with 2 BP checks in each visit.
Home BP monitoring	• Train patient on checking BP at home and make sure patient has appropriate home BP monitor. • Patient takes at least 6–10 home BP readings over 2 weeks or more. Make sure patient brings monitor to office visit to verify consistency of readings.

(c) Blood Pressure Targets

Most patients	The 2015 ADA Standards recommend management to **<140/<90** for most patients with diabetes, but allow for individualized targets for patients with chronic kidney disease or other risk factors.
Younger or at risk for stroke	Consider a target of **<130/<80** for some patients, including younger patients, if the burden of more aggressive therapy is not excessive.
Elderly	In elderly patients, avoid reducing diastolic BP below an average of 60. Lower diastolic BP may cause symptoms of hypotension and increase risk of myocardial infarction and stroke.

(d) Therapeutic Lifestyle Changes (TLC)

TLC elements include weight reduction, the DASH eating plan, sodium reduction, regular physical activity, limiting alcohol, and smoking cessation. *For more information on the effects of TLC on blood pressure, see page 10 of the High Blood Pressure CPM.*

(g) Secondary Causes of Uncontrolled BP

If a patient is on multiple medications and still not meeting BP goals, explore these possible secondary causes: Primary aldosteronism, sleep apnea, chronic kidney disease, coarctation of aorta, Cushing's syndrome or steroid therapy, drug-induced hypertension, pheochromocytoma, renovascular disease, thyroid/parathyroid disease, alcohol use.

(e) Medication Notes

- **Consider nonadherence.** Ask how many doses were missed since the last visit.
- **Consider interfering agents,** such as NSAIDs.

Medications in the algorithm

lisinopril/ losartan	• Either drug class is acceptable as a first-line choice. • If dry cough with lisinopril, switch to losartan. • Avoid all ACEI or ARB medications in pregnancy. • Do NOT combine an ACEI or an ARB. • Avoid the direct renin inhibitor aliskiren.

Other preferred blood pressure medications

amlodipine	• Monitor for peripheral edema. • If patient is on simvastatin >20 mg daily, consider alternative statin due to drug interaction. • Consider starting with 2.5 mg daily in elderly patients. Maximum therapeutic effect can take up to 3 weeks.
HCTZ	• Prescribe as single combination with an ACEI/ARB.
carvedilol	• Monitor for bradycardia (keep HR >55 BPM).

(f) Special Populations

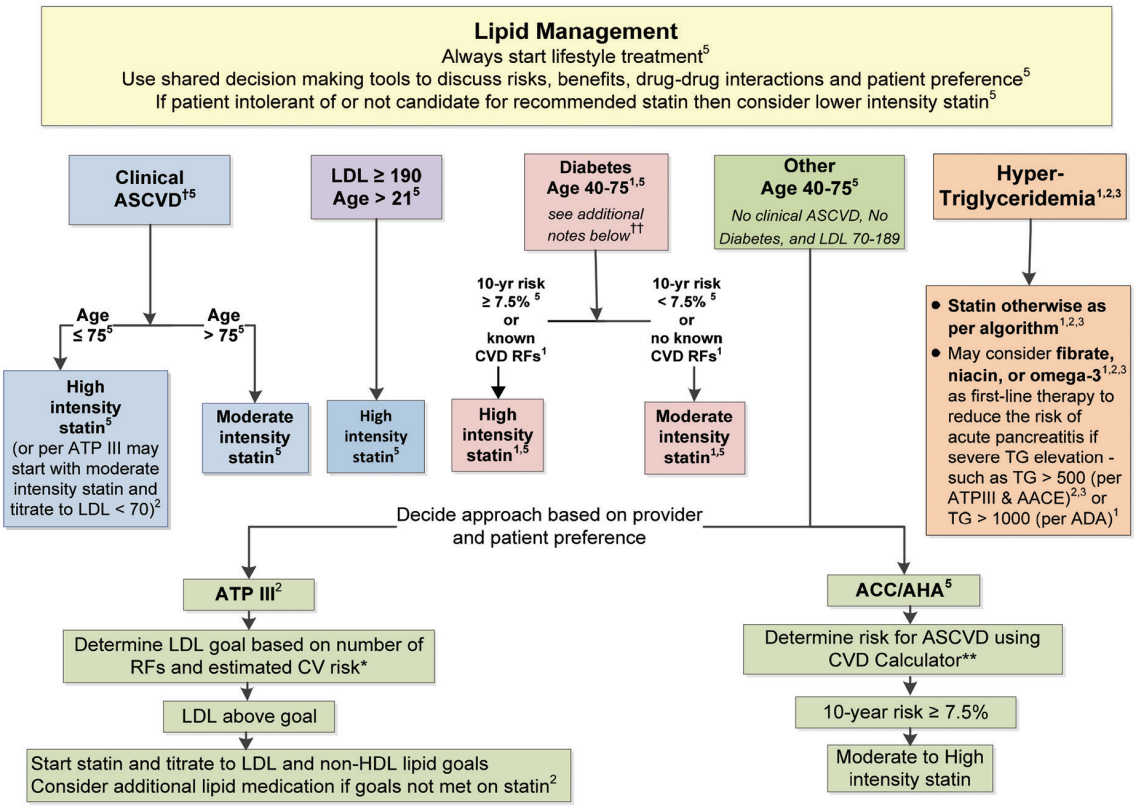
Prediabetes	Consider avoiding thiazides and beta blockers, as they can increase blood glucose. However, if a beta blocker is used, carvedilol is preferred as it may help with insulin resistance.

The recommendations below are for patients with both diabetes and the condition listed

Coronary artery disease	Consider adding carvedilol (preferred) or metoprolol succinate to ACEI/ARB. As needed, add amlodipine and then a diuretic.
Heart failure	If ejection fraction ≤40%, ACEI/ARB, *plus* carvedilol (preferred) or metoprolol succinate, *plus* spironolactone (if not contraindicated). If needed for BP, add amlodipine
Kidney disease	Treat to <140/<90; consider <130/80 if ACR >300. Monitor K+ and creatinine with ACEI/ARBs.
Black (African ancestry)	Consider starting with CCB or thiazide, then add thiazide or CCB as 2nd line.
Age >80 years	Consider target of <150/<90 and individualized approach; consider starting with CCB or thiazide.
Pregnancy	Avoid ACEI/ARB medications. Consider labetalol, CCB (nifedipine preferred), hydralazine, or methyldopa.

TOOL: ADULT LIPID GUIDELINES

SUTTER HEALTH



***ATP III (2002)**
LDL Goal Determination[2]

1. If 0-1 Major Risk Factors (RFs): LDL goal <160[2]
2. If 2+ Major Risk Factors (RFs) then determine LDL goal based on Framingham Risk Assessment tool[2] (http://cvdrisk.nhlbi.nih.gov/calculator.asp) or Reynolds Risk score (http://www.reynoldsriskscore.org)
   a. 10-year risk >20%: LDL goal <100
   b. 10-year risk 10-20%: LDL goal <130
   c. 10-year risk <10%: LDL goal <130
3. Major Risk Factors:
   a. Cigarette Smoking,[2,3]
   b. Hypertension (BP ≥ 140/90 or on anti-hypertension medication), [2,3]
   c. FH of premature CHD2,3 (CHD in male first degree relative < 55 years, CHD in female first degree relative < 65 years),
   d. Advancing Age[2,3] (men ≥ 45 years, women ≥ 55 years),
   e. Low HDL cholesterol, [2,3] (Note High HDL-cholesterol (≥ 60) is a negative risk factor and can be subtracted)
4. Additional risk factors to consider: obesity, truncal obesity, family history of hyperlipidemia, fasting/postprandial hypertriglyceridemia, PCOS, dyslipidemic triad (low HDL, high TG, small dense LDL)[3]

**** ACC/AHA Guideline (2013)**
CVD Risk Calculation[5]

1. Calculate patient's 10-year risk for ASCVD[5] http://my.americanheart.org/professional/StatementsGuidelines/Prevention-Guidelines_UCM_457698_SubHomePage.jsp[5]
2. Additional risk factors (RFs) may consider in selected patients for informed decision making[5]:
   a. Evidence of genetic hyperlipidemias
   b. Family history of premature ASCVD with onset <55 years of age in a first degree male relative or <65 years of age in a first degree female relative
   c. High-sensitivity C-reactive protein >2 mg/L
   d. CAC score ≥300 Agatston units or ≥75 percentile for age, sex, and ethnicity,
   e. Ankle-brachial index <0.9
   f. Elevated lifetime risk of ASCVD (such high risk patients < 40 who have high lifetime ASCVD risk)

[†] **Clinical ASCVD:** acute coronary syndromes, history of MI, stable or unstable angina, coronary or other arterial revascularization, stroke, TIA, or peripheral arterial disease presumed to be of atherosclerotic origin.

[††] **Additional Diabetes Notes**

1. The ACC/AHA guideline emphasizes treatment by above algorithm for patients with diabetes if LDL 70-189.[5]
2. The ADA guideline also recommends moderate or high intensity statin for diabetes patients age < 40 or > 75 with known additional CVD RFs or moderate dose statin if age > 75 even if no known additional CVD RFs.[1] (Additional RFs include: LDL ≥100, HTN, smoking, overweight/obesity.)[1]

I. Determining statin type and dose:

1. Determine statin intensity according to algorithm above. See table below for specific type and dose.
2. Note: used reduced doses of statin if below[5]:
   a. Multiple or serious comorbidities, including impaired renal or hepatic function. [5]
   b. History of previous statin intolerance or muscle disorders. [5]
   c. Unexplained ALT elevations >3 times ULN. [5]
   d. Patient characteristics or concomitant use of drugs affecting statin metabolism.[5]
   e. >75 years of age. [5]
   f. History of hemorrhagic stroke. [5]
   g. Asian ancestry. [5]

Table 1: Statin Intensity

High-Intensity Statin Therapy	Moderate-Intensity Statin Therapy	Low-Intensity Statin Therapy
Daily dose lowers LDL-C on average, by approximately ≥50%	**Daily dose lowers LDL-C on average, by approximately** 30-50%	**Daily dose lowers LDL-C on average, by approximately** <30%
Atorvastatin *(40)*[ii] 80mg[i] PO daily* Rosuvastatin 20mg[i] (40)[ii] PO daily	Atorvastatin 10 mg[i] *(20)*[ii] PO daily* Rosuvastatin *(5*[ii]*)*10 mg[i] PO daily Simvastatin 20-40 mg[i] PO daily* Pravastatin 40[i] *(80)*[ii]mg PO daily* Lovastatin 40 mg[i] PO daily* Fluvastatin 40mg[i] PO BID* *Fluvastatin XL 80 mg*[ii] *Pitavastatin 2-4 mg*[ii]	Pravastatin 10-20 mg[i] PO daily* Lovastatin [i]20 mg[i] PO daily* *Fluvastatin 20-40 mg*[ii] *PO daily** *Pitavastatin 1 mg*[ii] *PO daily* *Simvastatin 10mg*[ii] *PO daily*

(*) indicates generic availability

[i] Based on ASCVD risk reduction demonstrated from randomized controlled trials
[ii] FDA-approved for dyslipidemia, but its effect on ASCVD risk is not studied in randomized controlled trials

II. Laboratory screening and monitoring

1. Who to screen
   i. ATP III and AACE: recommend screen all adults every 5 years if low risk, 1-2 years if high risk[2, 3]
   ii. AHA/ACC: Calculate patients risk score every 4-6 years[5]
   iii. USPSTF recommends screen all adults ≥ 20 at increased risk for CVD and all men ≥ 35 years old[6]
2. Evaluate at baseline, prior to initiating therapy
   i. Fasting lipid panel (if initially non-fasting, repeat as fasting if TG > 500)[1,2,3,5]
   ii. Serum alanine transaminase (ALT)[5,7]
   iii. A1C (diabetes screen) if diabetes status unknown[5]
   iv. Serum creatine kinase (CK) if increased risk for developing adverse muscle effects[5]
3. Evaluate in 4-12 weeks, after initiating therapy and then every 3-12 months as indicated[5]
   i. Lipid panel
      1. Check LDL to monitor for adherence (and possible titration).[5] Note: individual response may be variable based on inherent biologic differences.[5]
      2. Expect therapeutic response below.
         a. ≥ 50% LDL reduction for high intensity statin.[5]
         b. 30-50% LDL reduction for low intensity statin.[5]
      3. If therapeutic response not attained
         a. Reinforce adherence.[5]
         b. Consider titrate statin dose or add non-statin medication to reach therapeutic goal (esp if very high risk such as clinical ASCVD and < 75 yo, baseline LDL > 190, or diabetes). [5]

c. Exclude secondary causes of hyperlipidemia (see section III below) [5]

4. If LDL < 40 twice in a row may consider lower statin dose[5]

ii. Diabetes

1. Screen for diabetes in patients treated with statins.[1,5]
2. Statin use is associated with risk of new onset diabetes. The increased risk appears to be confined to those with risk factors for diabetes.[1,5]
3. If patient develops diabetes while on statin, encourage heart healthy lifestyle and continue statin to reduce ASCVD risk. [1,5]

iii. Muscle symptoms

1. Pain, tenderness, stiffness, cramping, weakness, generalized fatigue[5]
2. Check CK[5] (CK > 10 times the upper limit of normal is indication to stop medication[8])
3. Management - Compare to baseline pre-statin symptoms for comparison[5]
   a. Severe muscle pain or fatigue[5]
      i. Discontinue statin therapy[5]
      ii. Measure creatinine and urinalysis to evaluate for rhabdomyolysis[5]
   b. Mild to moderate symptoms[5]
      i. Evaluate possible etiology of symptoms[5]
      ii. May consider trial discontinue statin therapy[5]
         1. If no alternate etiology and muscle symptoms resolve, re-challenge with same or lower statin dose of therap[5] or try a different class of statin[5]
         2. If alternate etiology of muscle pain discovered, OK to restart statin[5]

iv. Hepatotoxicity

1. Fatigue, weakness, loss of appetite, abdominal pain, dark-colored urine, yellowing of the skin or sclera[5]
2. If present measure ALT[5]
3. LFTs > 3 time the upper limit of normal is indication to change or stop medication[7]

v. Memory Impairment[5]

1. Look for other non-statin cause or consider possibility of adverse effect associated with statin therapy[5]

vi. Pregnancy - Statin use is contraindicated during pregnancy[5]

III. Evaluation for possible secondary dyslipidemia

1. Consider evaluate for secondary causes if LDL > 190 or TG > 500[5]
   i. Familial hyperlipidemia[5]
   ii. Medications[5] (such as progestins, anabolic steroids, and corticosteroids)
   iii. Diseases/conditions: Diabetes, [5] Obesity, [5] Hypothyroidism,[5] Obstructive liver disease,[5] Chronic renal failure,[5] nephrotic syndrome,[5] pregnancy[5]
   iv. Diet[5]

IV. Lifestyle modifications[9]

1. Heart healthy diet (adapt to appropriate calorie requirements, personal and cultural food preferences and nutritional therapy for other conditions)
   i. Consisting of vegetables, fruits, and whole grains, low-fat dairy products, poultry, fish, legumes, non-tropical vegetable oils and nuts
   ii. Limit intake of sweets, sugar-sweetened beverages and red meats
   iii. Limit calories from saturated fats to 5-6% of total caloric intake
   iv. Eliminate trans fat in diet.
   v. Examples of heart healthy diets include: DASH diet, USDA Food Pattern, and AHA diet
2. Regular exercise habits
   i. Physical activity that is moderately to highly vigorous in intensity

ii. Three to four sessions per week, lasting approximately 40 minutes each

3. Tobacco cessation
4. Achieve and maintain healthy weight

Table 2: Statin-Drug Interactions

Drug	Drug/Food Interactions (not all inclusive)[4]
Atorvastatin	Cyp3A4 inducers and inhibitors, Grapefruit Juice, St John's Wort **Dose modification:** Clarithromycin, Colchicine, Daptomycin, Diltiazem, Niacin, Phenytoin, Protease Inhibitors, Rifamycin, Rivaroxaban, Sildenafil, Telithromycin, Verapamil **Avoid:** Cyclosporine, Gemfibrozil, Pimozide
Rosuvastatin (Crestor)	**Dose Modification:** Amiodarone, Colchicine, Cyclosporine, Daptomycin, Niacin, Protease Inhibitors **Avoid:** Gemfibrozil, Ledipasvir
Simvastatin	Cyp3A4 inducers and inhibitors, Grapefruit Juice, St John's Wort **Dose modification:** Amiodarone, Amlodipine, Colchicine, Daptomycin, Diltiazem, Dronedarone, Niacin, Phenytoin, Rifamycin, Sildenafil, Verapamil **Avoid:** Clarithromycin, Cyclosporine, Erythromycin, Gemfibrozil, Protease Inhibitors, Telithromycin
Pravastatin	**Dose modification:** Bile Acid Sequestrants, Clarithromycin, Colchicine, Cyclosporine, Daptomycin, Niacin, Phenytoin, Rifamycin **Avoid:** Gemfibrozil, Pimozide
Lovastatin	Cyp3A4 inducers and inhibitors, Grapefruit Juice, St John's Wort **Dose modification:** Amiodarone, Colchicine, Daptomycin, Diltiazem, Dronedarone, Niacin, Phenytoin, Rifamycin, Sildenafil, Tigrelor, Verapamil **Avoid:** Clarithromycin, Cyclosporine, Erythromycin, Gemfibrozil, Pimozide, Protease Inhibitors, Telithromycin
Fluvastatin	Cyp2C9 substrates **Dose modification:** Amiodarone, Cholestyramine Resin, Colchicine, Cyclosporine, Daptomycin, Fluconazole, Niacin, Phenytoin, Rifamycin **Avoid:** Gemfibrozil, Pimozide
Pitavastatin (Livalo)	**Dose modification:** Colchicine, Daptomycin, Erythromycin, Niacin, Rifamycin, Sildenafil, **Avoid:** Cyclosporine, Gemfibrozil

Table 3: Non-Statin Therapy[4]

Drug Class & Lipid Effects	Agent and Dosage (not all inclusive)	Common Adverse Reactions	Comments & Precautions
Fibric Acid Derivatives LDL↓ 5-30% TG ↓30-60% HDL ↑ 10-20%	**Fenofibrate (TriCor)*** • 48-145 mg daily **Fenofibrate (Trilipix)*** • 45-135 mg daily **Gemfibrozil (Lopid)*** • 600 mg BID	• Dyspepsia • Cholelithiasis • Myopathy/ rhabdomyolysis • Headache • ↑ transaminases • ↑ SCr	• Fenofibrate is contraindicated in active liver disease, severe renal dysfunction, pre-existing gallbladder disease, and nursing mothers. • SCr and eGFR should be evaluated before fenofibrate initiation, within 3 months after initiation, and every 6 months thereafter.
Nicotinic Acid LDL↓ 5-25% TG ↓20-50% HDL ↑15-35 %	**Niacin (Niacor)*** • Initial: 100 mg TID • ↑ gradually as tolerated to 3 g daily divided in 2-3 doses **Niacin, extended release (Niaspan)*** • Initial: 500 mg daily • ↑ gradually (not more frequently than weekly) over 4-8 weeks as tolerated to a maximum dose of 2 g daily	• Flushing/pruritus • GI effects • ↑ prothrombin time • Hepatotoxicity • Hypophosphatemia • ↑ blood sugar • Hyperuricemia • Hypotension • Atrial fibrillation • Edema • Dizziness • Headache	• Different formulations of niacin are not interchangeable. • Niacin should not be used if: ○ Transaminase ↑ >2-3x ULN ○ Persistent severe cutaneous symptoms, persistent hyperglycemia, acute gout, or unexplained abdominal pain or GI symptoms occur ○ New- onset atrial fibrillation or weight loss occurs • Baseline hepatic transaminases, fasting blood glucose or A1c, and uric acid should be obtained before niacin initiation, during up titration, and every 6 months thereafter. • Take with food or premedicate with aspirin 325 mg 30 minutes before niacin dosing to alleviate flushing symptoms.

Cholesterol Absorption Inhibitors LDL↓15-20 % (Additional 25-40% w/ statin) TG ↓5-8% HDL ↑ 1-4%	**Ezetimibe (Zetia)** • 10 mg daily	• Fatigue • Diarrhea • Arthralgia • Upper respiratory tract infection • ↑ transaminases with statins	• When coadministered with a statin, monitor transaminase levels as clinically indicated, and discontinue if persistent ALT ↑ >3x ULN occur.
Bile Acid Sequestrants LDL↓15-30% TG ↑0-20% HDL ↑ 3-5%	**Cholestyramine Resin (Questran, Prevalite)*** • Initial: 4 g 1-2 times/day • ↑ gradually (not more frequently than monthly) • Maintenance: 8-16 g daily divided in 2 doses • Maximum: 24 g daily **Colestipol (Colestid)*** • Granules: ○ Initial: 5 g 1-2 times/day ○ ↑ by 5 g/day at 1-2 month intervals ○ Maintenance: 5-30 g daily or in divided doses • Tablets: ○ Initial: 2 g 1-2 times/day ○ ↑ by 2 g 1-2 times/day at 1-2 month intervals ○ Maintenance: 2-16 g daily or in divided doses **Colesevelam (Welchol)** • 3.75g daily or 1.875g BID	• Bleeding • Constipation • GI effects • Hypothyroidism • Hypertriglyceridemia	• Bile acid sequestrants should not be used in patients with: ○ Baseline fasting triglyceride levels ≥300mg/dL ○ Type III hyperlipoproteinemia • Fasting lipid panel should be obtained before bile acid sequestrant initiation, 3 months after initiation, and every 6-12 months thereafter. • Bile acid sequestrants can decrease the absorption of certain other drugs and vitamins.
Omega-3 fatty acids LDL ↑44% TG ↓26-47% HDL ↑9%	**Lovaza*** • 4 g daily or 2 g BID **Vascepa*** • 2 g BID with meals **Fish Oil Supplement*** (EPA and DHA) daily	• GI effects • ↑ transaminases • ↑LDL • Arthralgia • Fatigue	• If EPA and/or DHA are used for severe hypertriglyceridemia (≥500mg/dL), it is reasonable to evaluate patient for GI disturbances, skin changes, and bleeding. • Omega-3 fatty acids should be used as an adjunct to diet/exercise and only if triglyceride levels ≥500 mg/dl.

(*) indicates generic availability

[1]ADA 2015 Standards of Medical Care in Diabetes Diabetes Care January 2015 38:S5-S93. http://professional.diabetes.org/admin/UserFiles/0%20-%20Sean/Documents/January%20Supplement%20Combined_Final.pdf

[2]Adult Treatment Panel III (ATP III) Guidelines National Cholesterol Education Program National Heart, Lung, and Blood Institute National Institutes of Health NIH Publication No. 01-3670 May 2001 http://www.nhlbi.nih.gov/files/docs/guidelines/atp3xsum.pdf

[3]AACE Lipid and Atherosclerosis Guidelines, *Endocr Pract* 2012;18(Suppl 1)

[4]Lexicomp Online 2012-2013 http://online.lexi.com/crlsql/servlet/crlonline

[5]2013 ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Stone NJ, et al American College of Cardiology/American Heart Association Task Force on Practice Guidelines.J Am Coll Cardiol. 2014 Jul 1;63(25 Pt B):2889-934

[6]U.S. Preventive Services Task Force. Screening for Lipid Disorders in Adults: U.S. Preventive Services Task Force Recommendation Statement. June 2008. http://www.uspreventiveservicestaskforce.org/uspstf08/lipid/lipidrs.htm

[7]FDA Drug Safety Communication: Important safety label changes to cholesterol-lowering statin drugs 07/03/2012 http://www.fda.gov/Drugs/DrugSafety/ucm293101.htm

[8]2013 UpToDate, Inc Statins: Actions, side effects, and administration, Robert S Rosenson, MD. Approach to the patient with hypertriglyceridemia, Robert S Rosenson, MD

[9]Eckel RH, Jakicic JM, Ard JD, et al. 2013 AHA/ACC guideline on lifestyle management to reduce cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. Circulation 2013. Nov 12.

CONTACT PATIENTS NOT AT GOAL AND WITH THERAPY CHANGE WITHIN 30 DAYS

All patients not at goal and with either a new prescription or a change in therapy receive proactive clinical contact within 30 days to assess progress. An appropriate member of the care team initiates clinical interaction(s) in the form of an office or home visit, medication therapeutic management, telephone outreach, contact via the patient portal, virtual visit, or e-messaging. Treatment is intensified as appropriate.

Most adults with diabetes have at least one comorbid chronic disease and as many as 40% have at least three. The complexity of multiple chronic diseases can be challenging for many people with diabetes to manage. Frequent clinical contact for those not at goal or with a new prescription can create opportunities to focus:

- Treatment Intensification: Accelerating care can help patients achieve their treatment goals: those not at target range who saw their care team every 1-2 weeks achieved treatment goals sooner than those who saw their team every 3-6 months.
- Treatment Adherence: Patients who have positive reinforcement from their provider and frequent support of their care team demonstrate better adherence and less risk of poor outcomes.
- Patient Engagement in Self-Management: With frequent contact, patients and care teams can develop a strong therapeutic bond that promotes patient engagement and increases patient confidence and motivation.

TIPS TO CONTACT PATIENTS WITHIN 30 DAYS

- Incorporate contact frequency into treatment guidelines.
- Consider group visits, nurse visits, telephonic follow-up, or e-messaging. Contact may not need to be face-to-face with a physician. Nurse practitioners, pharmacists, or competency-trained and tested nurses, for instance, could use standardized treatment algorithms.
- Create a reminder system via EHR, patient portal, or a simple calendar program to track patients who need follow-up.
- Identify patients who may not be adherent to their current regimen because they are not on appropriate medications.
- Schedule follow-up appointments for patients not at goal before they leave the clinic.
- Offer options for patient home monitoring and reporting through telephone, patient portal, texting, or secure e-messaging.
- Monitor performance of 30-day follow-up for those not at goal or with new prescription and report results to the diabetes team (refer to Build an Accountable Diabetes Team plank).

TOOL: DIABETIC FOLLOW-UP SCRIPTING AND NOTE

CORNERSTONE HEALTH CARE, P.A.

CORNERSTONE
HEALTH CARE

PCA Scripting:

Good morning/afternoon, may I speak with _____? Hi, Mr./Mrs. _____. My name is _____ and I'm a Patient Care Advocate from Cornerstone Health Care calling for Dr. _____ office. Do you have a moment? We noticed that it is time for you to have your six month Diabetic follow up appointment. I would like to go ahead and schedule this for you. What day and time works best for your schedule? Is your address still _____ and would you mind sharing your email address with me? In addition to what we have already discussed, is there anything else I can help you with today? Thank you for your time and choosing Cornerstone Health Care as your Medical Home. Have a great Day!

CORNERSTONE
HEALTH CARE

PCA Note:

Sept. 17, 2015

I had the opportunity to speak with Foot Chctest about ways to improve their healthcare. In an effort to improve Diabetes, I have scheduled an appointment for her to have a Follow-up. She was able to schedule an appointment for this service. I set up an appointment with _____ on _____ at _____. The patient accepted and understood the purpose of my call.

Thank you,

Patient Care Advocate

TOOL: TARGETED PATIENT PORTAL MESSAGING

PREMIER MEDICAL ASSOCIATES, P.C.

Premier Medical Associates would like to inform you that it may be time to have your A1C checked.

One part of managing your diabetes is having your A1C level checked every 3-4 months.

Please reach out to your Premier Medical Associates provider today to see if you are due for an appointment to have this important blood work drawn.

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Your Premier Medical Associates Providers would like to inform you that it may be time for your yearly diabetic eye exam.

Diabetes can damage your eyes and is the leading cause of blindness among adults. An eye exam can be a very useful tool in the reduction of vision issues.

Please reach out to your Ophthalmologist today to schedule your yearly diabetic eye exam.

If you have any vision disturbance such as blurry vision, seeing double, spots or floaters, you should see your eye provider before your yearly diabetic eye exam.

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Your Premier Medical Associates Provider would like to remind you that it is very important to take care of your feet if you have been diagnosed with diabetes. Preventive measures could deter possible loss of a toe, foot or leg in severe cases.

Your provider would like to inform you of steps to protect your toes/feet/ lower leg:

Keep your feet clean. Be sure to wash and dry between your toes. Protect your feet from injury, DO NOT GO BAREFOOT! Inspect the skin on your feet every day. Keep your skin soft and smooth. Have your Premier Medical Associates Podiatry Provider trim any corns, calluses or nails. Avoid having your feet really hot or really cold.

Be sure to remove your shoes and socks and show off your feet to your Premier Medical Associates provider at each visit.

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TOOL: DIABETES MEDICATION REFILL AND VISIT FREQUENCY GUIDELINES

MERITER-UNITYPOINT HEALTH

MERITER Medical Group

Diabetes Update – 2015

MMG Diabetes Medication Refill and Visit Frequency Guidelines

Care Team actions: During most patient contacts and for chart prep, review the following

- ✓ Review most recent A1c
- ✓ Verify that meds are filled and check medication response/tolerance
- ✓ Check standing/future lab orders and create standing orders as needed (A1c, LDL, serum creatinine, urine micro-albumin) if needed
- ✓ Reinforce home glucose monitoring if patient is monitoring
- ✓ Assure next visit is scheduled

Last A1c	Refills	Visit frequency	Additional Care Team Actions
1. New medication regardless of A1c	60 days max	Office visit within 30 days	• Contact every 2 weeks via phone or MyChart
2. Last A1c >6 months ago	30 day refill	Office visit within 30 days	
3. A1c typically less than 7 (A1c Control Goal)	6 month refill	Every 6 months	• Screen for hypoglycemia
4. A1c 7.0 to 7.9	3 month refill	Every 3 months	
5. A1c 8 - 9	3 month refill	Every 3 months	• If A1c ≥ 8 for 6 months pend order to DCT and/or pharmacists
6. A1c >9	1-3 month refill based on compliance, comorbidities, home blood glucose monitoring	Visits every 6 weeks	• Contact every 2 weeks via phone or MyChart • Monitor blood glucose checks via MyChart or phone outreach • Pend order to DCT

List of useful DM related smart phrases (type "Diabetes" to view full list)

• *Lastdiabetes3ref* (last 3 diabetes lab results) • *Medrfdm* (last office visit DM labs/refill info)	• *Diabeticteach* (review DM teaching book/ glucometer) • *DM foot exam*

USE A PATIENT REGISTRY

An up-to-date registry exists and is utilized to identify all patients with Type 2 diabetes. Reviewed prior to a patient visit, the registry will inform the care team if the patient is not meeting care goals. Outreach is performed to patients who missed scheduled appointments, have gaps in care, or are overdue for follow-up.

Just as an electronic health record (EHR) is an essential tool for caring for individual patients, a registry is essential for managing populations. EHRs provide a single-patient view with clinical decision support to apply evidence-based protocols to each patient and workflow tools to support team-based care. Patient registries aggregate EHR data on individual patients to provide a population view.

Conceptually, a registry is layered on top of an EHR, integrating key data on all patients who make up a certain population, such as all patients with Type 2 diabetes. This cross-patient view may be a separate system or simply an additional module from the EHR vendor. Registries can also be used for risk stratification, which can range from simply identifying patients whose HbA1C is above their individual target to using statistical predictive models that use trends in multiple lab values and historical utilization patterns to stratify patients by risk of a hospital admission.

Many times, EHRs and registries overlap in terms of applying care protocols prior to, during, and after a patient visit. The EHR, for instance, ensures that all of a patient's chronic conditions and preventive care needs are addressed at every visit. Meanwhile, a registry applies the same protocols to patients who are not scheduled for a visit, to identify patients for outreach.

For organizations that possess a functioning registry, awareness and training is essential as well as protocols and accountability embedded into workflow for how the care team utilizes the tools. Ensure the data is timely and accurate, and create a feedback process to improve data quality.

PRIOR TO THE VISIT

Registries can facilitate pre-visit planning to assure efficient use of office visits. A list of patients with Type 2 diabetes who require labs and preventative services is reviewed by the team. For example, standing orders can be implemented to facilitate ordering of required tests and services prior to the visit. Ensure care teams have access to registry reports with adequate time for pre-visit planning.

DURING THE VISIT

Notifications or alerts are communicated to the provider during the patient visit about specific recommended tests or services. Sharing reports with the patient during the visit can empower patients to self-manage their disease by promoting discussion about self-management and progress toward goals.

AFTER THE VISIT

Care coordination can be enhanced between practice visits by outreach to patients needing additional services. Many patients identified as being at greatest risk for poor outcomes can be prioritized for case management. The registry can provide population-based results for quality improvement. Feedback about performance on specific measures can direct the team's diabetes improvement efforts.

EMBED POINT-OF-CARE TOOLS

Clinical decision support tools are embedded in workflow to ensure that all members of the care team are aware of the patient's status on diabetes management and preventive measures, even if the current visit is for an unrelated problem. Protocols assist the care team in addressing patient needs.

The main purpose of clinical decision support (CDS) is to provide clinicians and patients timely health information to best inform clinical decisions at the point of care.

Most clinicians aim to practice evidence-based medicine, yet many are challenged in remembering the specific care recommendations that might apply to an individual patient. For this reason, CDS tools can alert clinicians to patient-specific care needs, providing customizable order sets, easy access to disease guidelines, reminders for chronic or preventive care, safety alerts, patient-specific treatment recommendations, or even advanced predictive analytics that assess a patient's risk of high-cost complications.

The best point-of-care tools provide valuable information beyond rules and alerts. First-generation diabetes point-of-care tools in outpatient settings, for instance, focused on prompts and reminders which improved test ordering but did not track intermediate outcomes of care such as glucose, blood pressure, or lipid levels. More sophisticated diabetes point-of-care tools use EMR data to provide patient-specific advice on medication use based on previous treatment, distance from goal, and evidence-based algorithms. These tools also organize clinical data in a thoughtful manner that facilitates decision-making.

TIPS TO IMPROVE THE VALUE AND USE OF POINT-OF-CARE TOOLS

- Convene a core group dedicated to point-of-care tools. This team will review the content of the tools up front, review the guidelines as a group, and then decide together how to implement them.
- Focus practice resources and tools on care processes that will have the greatest population impact to avoid risk of alert fatigue.
- Ensure point-of-care tools align with organizational practice guidelines to avoid confusion.
- Create workflows that allow team members to manage certain alerts by practicing to the "top of their license." (Caution: States have different guidelines on what registered nurses, licensed practical nurses, or medical assistants can do with standing orders versus direct physician orders.)
- Aim to reduce "clicks" by consolidating all information into a single-screen display.
- Consider incorporating these tools in patient-provider communications, such as patient portals, shared decision-making aids, or after-visit summaries.
- Remember that tools must save time for providers and be perceived as valuable in increasing the quality of care.
- Make certain that data is timely and accurate and creates a feedback process to improve data quality. False positives and negatives will undermine provider confidence and therefore reduce the effectiveness of these tools.
- Create a process to assess the usage and effectiveness of the tools.

DIABETES REVIEW LIST

1. **Verify if patient has an active problem of diabetes.**
2. **Verify if patient has co-morbid conditions and transition the diabetes if needed.**
    a. **Renal disease**-add or transition to **E11.29** (diabetes mellitus with chronic kidney disease)
    b. **Retinal disease**-add or transition to **E11.39** (diabetes mellitus with ophthalmic manifestations)
    c. **Neuropathy**- add or transition to **E11.40** (diabetes mellitus with neurologic manifestations)
    d. **PVD**-add or transition to **E11.59** (diabetes mellitus with peripheral circulatory disorder)
    e. **HTN**-add or transition to **E11.69** (diabetes mellitus associated with complication)
    f. **Is patient on insulin?**- add **Z79.4** (current use of insulin)
3. **Verify when patient was last seen and if future appointment is scheduled.**
    a. If overdue for appt (DM appt every 3 months), call patient to schedule.
4. **Verify if retinal eye exam done in past year.**
    a. If done, verify result was data pointed. (attach eye report if the results needs data pointed)
    b. If positive for retinopathy, add E11.39 to problem list if not already done.
    c. Order retinal eye exam if not already done
    d. Add eye doctor/facility to the patient care team
    e. If retinal eye exam not done, call patient to set up
5. **Verify HgbA1c done within past 3 months.**
    a. If not done, verify if order placed. Place order if not already done.
    b. Call patient to set up
6. **Verify micro albumin done within past 12 months.**
    a. If not done, verify order placed. Place order if not already done.
    b. Call patient to set up
7. **Any patient refusals send a task to the site's nurse navigator.**

TOOL: DIABETES MEDICATION REFILL AND VISIT FREQUENCY GUIDELINES

MERITER-UNITYPOINT HEALTH

MERITER Medical Group

Diabetes Update – 2015

MMG Diabetes Medication Refill and Visit Frequency Guidelines

Care Team actions: During most patient contacts and for chart prep, review the following

- ✓ Review most recent A1c
- ✓ Verify that meds are filled and check medication response/tolerance
- ✓ Check standing/future lab orders and create standing orders as needed (A1c, LDL, serum creatinine, urine micro-albumin) if needed
- ✓ Reinforce home glucose monitoring if patient is monitoring
- ✓ Assure next visit is scheduled

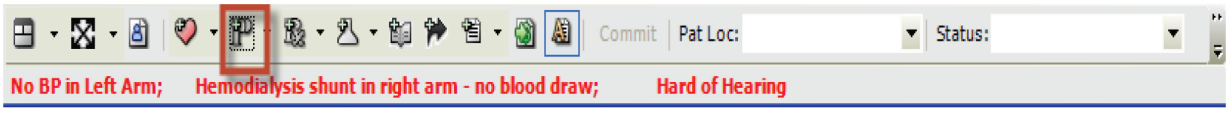
Last A1c	Refills	Visit frequency	Additional Care Team Actions
1. New medication regardless of A1c	60 days max	Office visit within 30 days	• Contact every 2 weeks via phone or MyChart
2. Last A1c >6 months ago	30 day refill	Office visit within 30 days	
3. A1c typically less than 7 (A1c Control Goal)	6 month refill	Every 6 months	• Screen for hypoglycemia
4. A1c 7.0 to 7.9	3 month refill	Every 3 months	
5. A1c 8 - 9	3 month refill	Every 3 months	• If A1c ≥ 8 for 6 months pend order to DCT and/or pharmacists
6. A1c >9	1-3 month refill based on compliance, comorbidities, home blood glucose monitoring	Visits every 6 weeks	• Contact every 2 weeks via phone or MyChart • Monitor blood glucose checks via MyChart or phone outreach • Pend order to DCT

List of useful DM related smart phrases (type "Diabetes" to view full list)

• *Lastdiabetes3ref* (last 3 diabetes lab results) • *Medrfdm* (last office visit DM labs/refill info)	• *Diabeticteach* (review DM teaching book/ glucometer) • *DM foot exam*

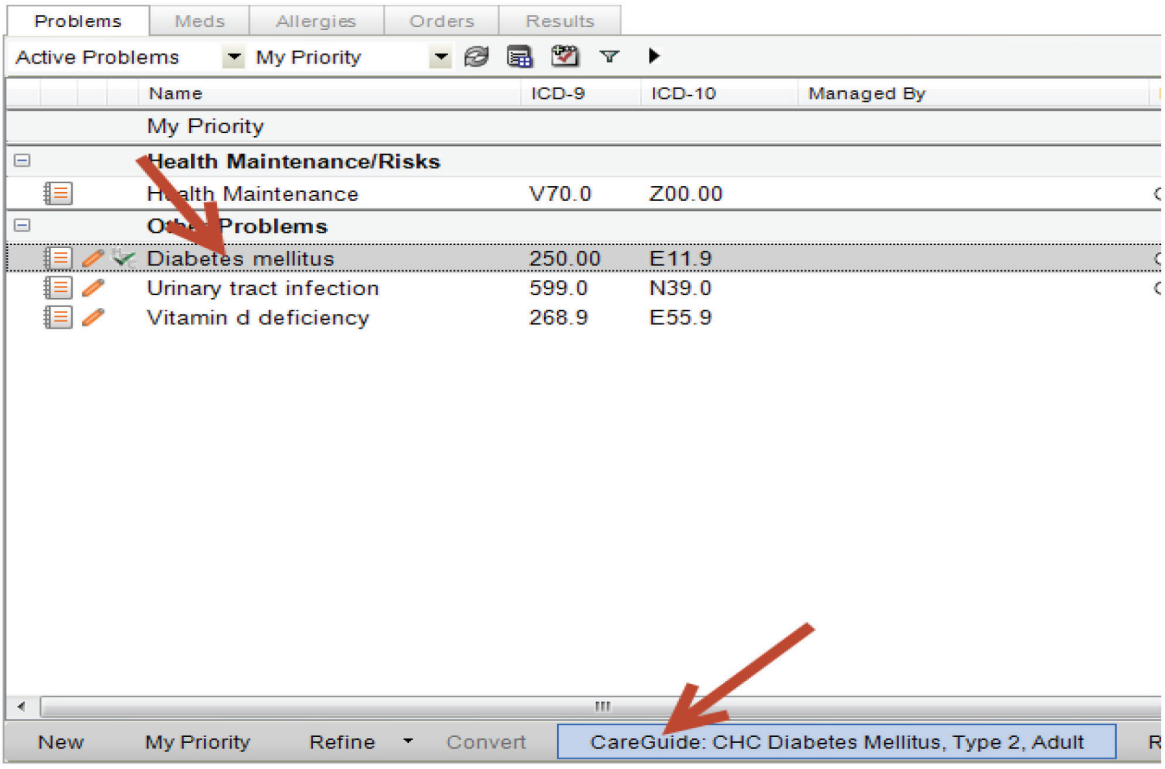
Accessing Diabetes CareGuides

- Within your note, click the "Problem" icon on the "Clinical Toolbar"



- Highlight any "Diabetes" diagnoses (if you click the icon that looks like a note, you are "assessing" it, if you just want to access the CareGuide, highlight the words) on the left in the "Active Problems" list, then click the "CareGuide: CHC Diabetes…." button on the menu bar at the bottom.

Accessing Diabetes CareGuides

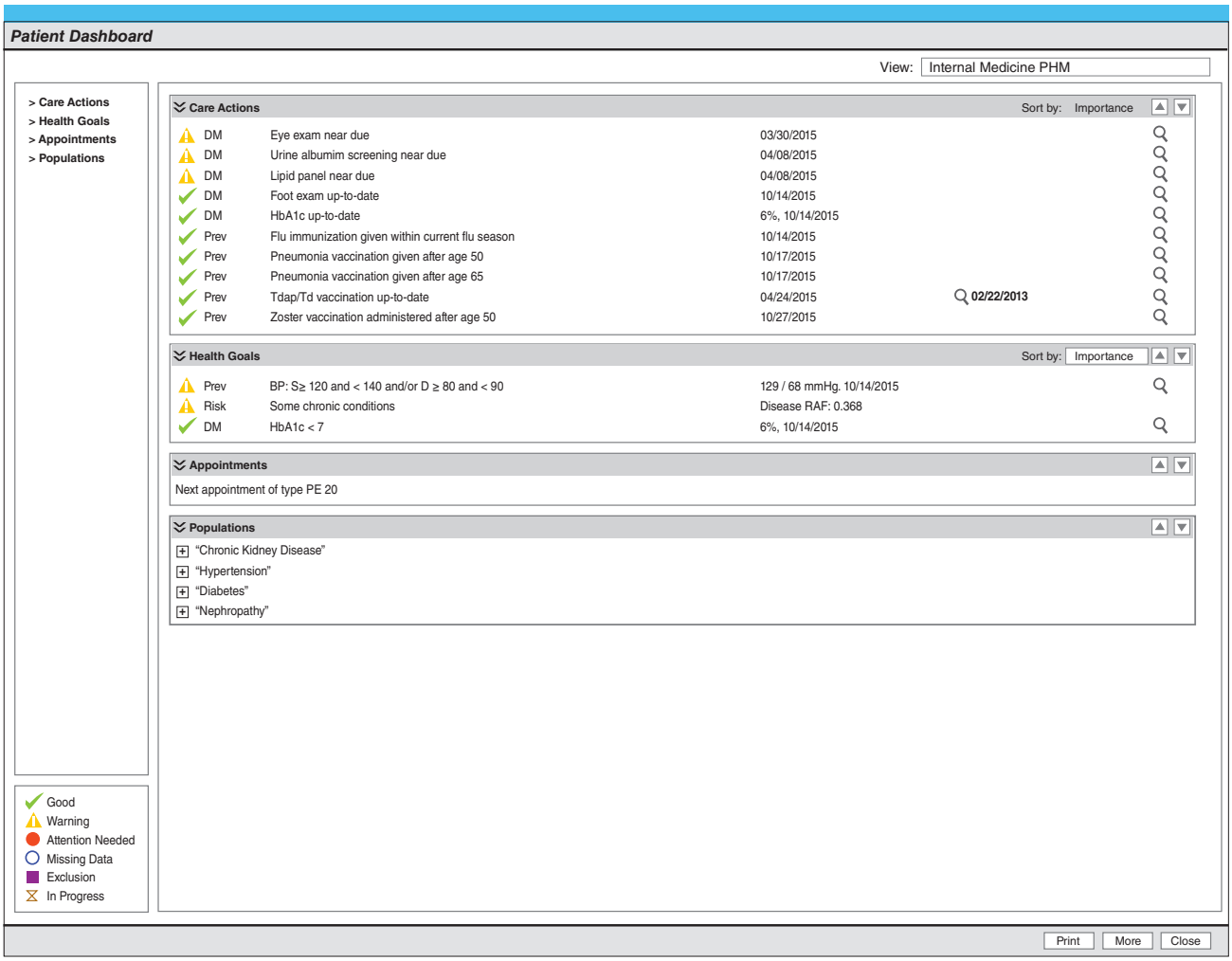


Diabetes CareGuide

Name
Quality Metric Orderables (corresponding metric is not satisfied until order is...
HGB A1C
LC001453 Hemoglobin A1c
LC221010 Lipid Panel w/ Total Chol 221010
LC303756 Lipid Panel
Microalbumin (Lab)
Quality Metric Screens, Follow-Up Plans and Counseling
*QM - Depression Screen, Result and Follow-Up Plan
*QM - BMI Follow-Up Plan
*QM - BP Screen and Follow-Up Plan
*QM - Depression Result and Follow-Up Plan (for Patient Point Screens)
*QM - Fall Risk Screen
*QM - Tobacco Cessation Counseling
Quality Metric Resultables (Please obtain hard copy for outside results)
*QM - A1C Last Done
*QM - Diabetic Eye Exam Last Done
*QM - Diabetic Foot Exam Last Done
*QM - LDL Last Done
*QM - Microalbumin Last Done
Quality Metric Deferrals
*QM - Deferrals / Exclusions (for vaccine deferrals, also defer in QBM window)
Immunizations
Hepatitis B
Influenza
Pneumo (Pneumovax)
Follow-ups and Referrals
Referrals
Ophthalmology Consult
Podiatry (Foot/Ankle) Consult

TOOL: CLINICAL QUALITY SOLUTION

PREMIER MEDICAL ASSOCIATES, P.C.



THEDACARE

Best Practice Alerts/Health Maintenance

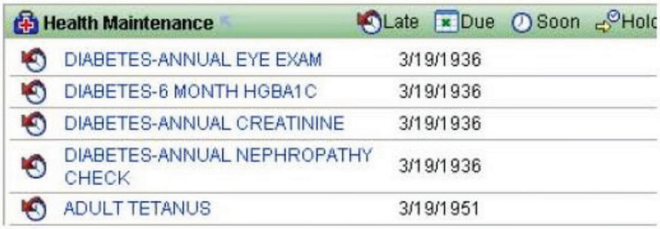
Best Practice is an alert that gives information on what a patient needs due to:

- A diagnosis (e.g. diabetes)
- Age related immunization or procedure (e.g. mammogram at intervals)

Health Maintenance (HM) is a preventative health tracking system and means of tracking the status of the best practice alerts. Health maintenance items may be satisfied at a ThedaCare site or at external clinics which is "abstracted" into the patient's chart.

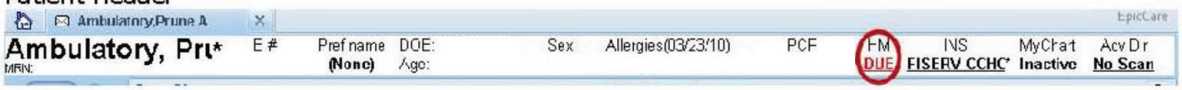
View Patient's Health Maintenance (HM)

1 GoTo patient's **Snapshot** activity



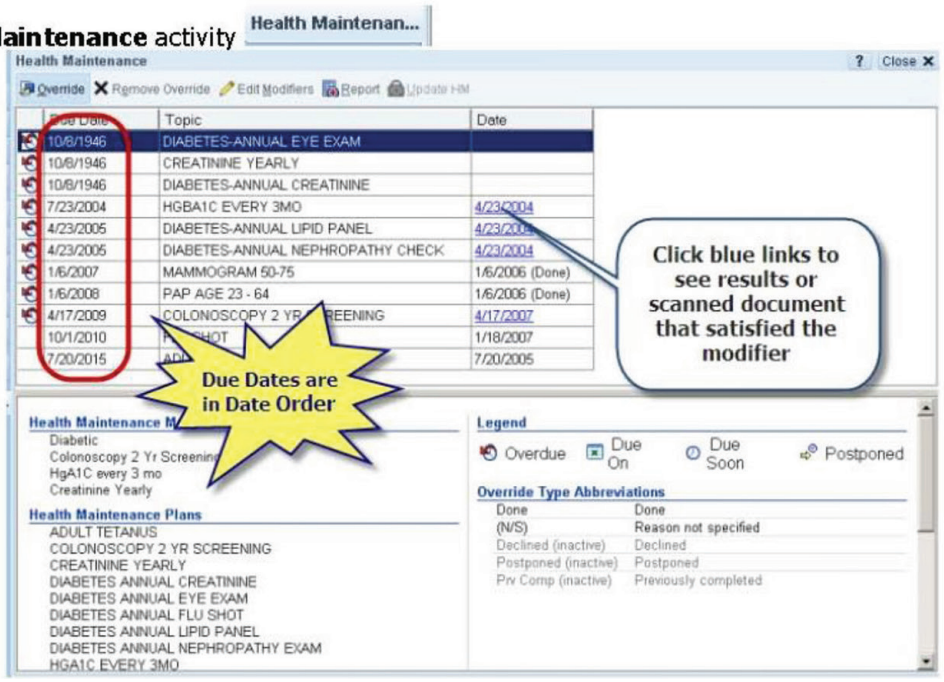
Or

Patient Header



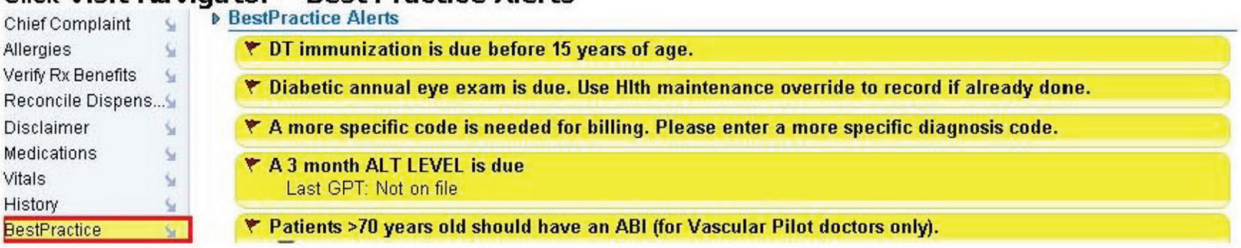
Or

Health Maintenance activity



Or

Click **Visit Navigator – Best Practice Alerts**

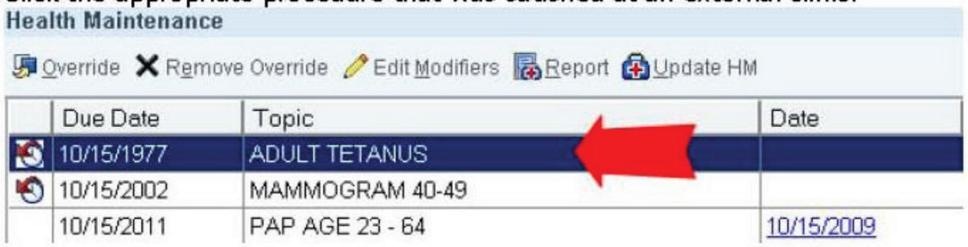


Health Maintenance – Document that the alerts were satisfied. The patient had these done at either a Thedacare facility or an external clinic.

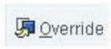
Health maintenance items will be marked "satisfied" automatically when done at a Thedacare site.

1 GoTo **Health Maintenance** activity (see step 1 above)

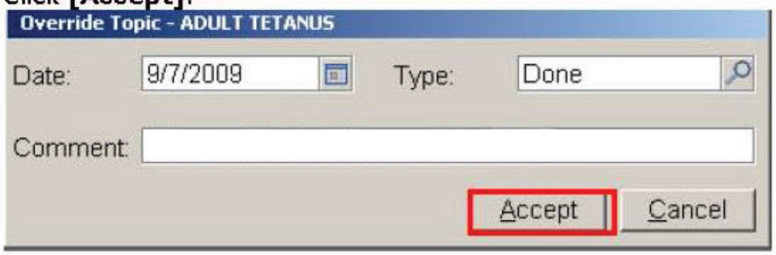
2 Click the appropriate procedure that was satisfied at an external clinic.



3 Click **[Override]**



4 Fill in the Date completed, type **Done**, add Comment (e.g. Name of clinic, provider, and results). Click **[Accept]**.



5 The health maintenance plan is satisfied.

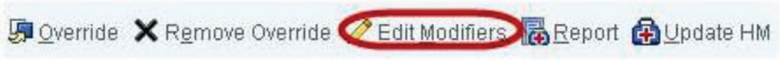
| 09/07/2019 | ADULT TETANUS | 09/07/2009-Done |

Add Patient Modifiers

Some patient modifiers are automatically applied for a patient, for example, immunizations or PAP. You may add or remove a patient from the health maintenance plan. For example, a patient is diabetic and the diabetic modifier is added to the patient's chart.

1 GoTo **Health Maintenance** activity

2 Click **Edit Modifiers** button

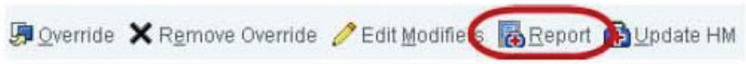


3 The Health Maintenance Modifiers screen appears. Click the spyglass on a blank row to see available modifiers.

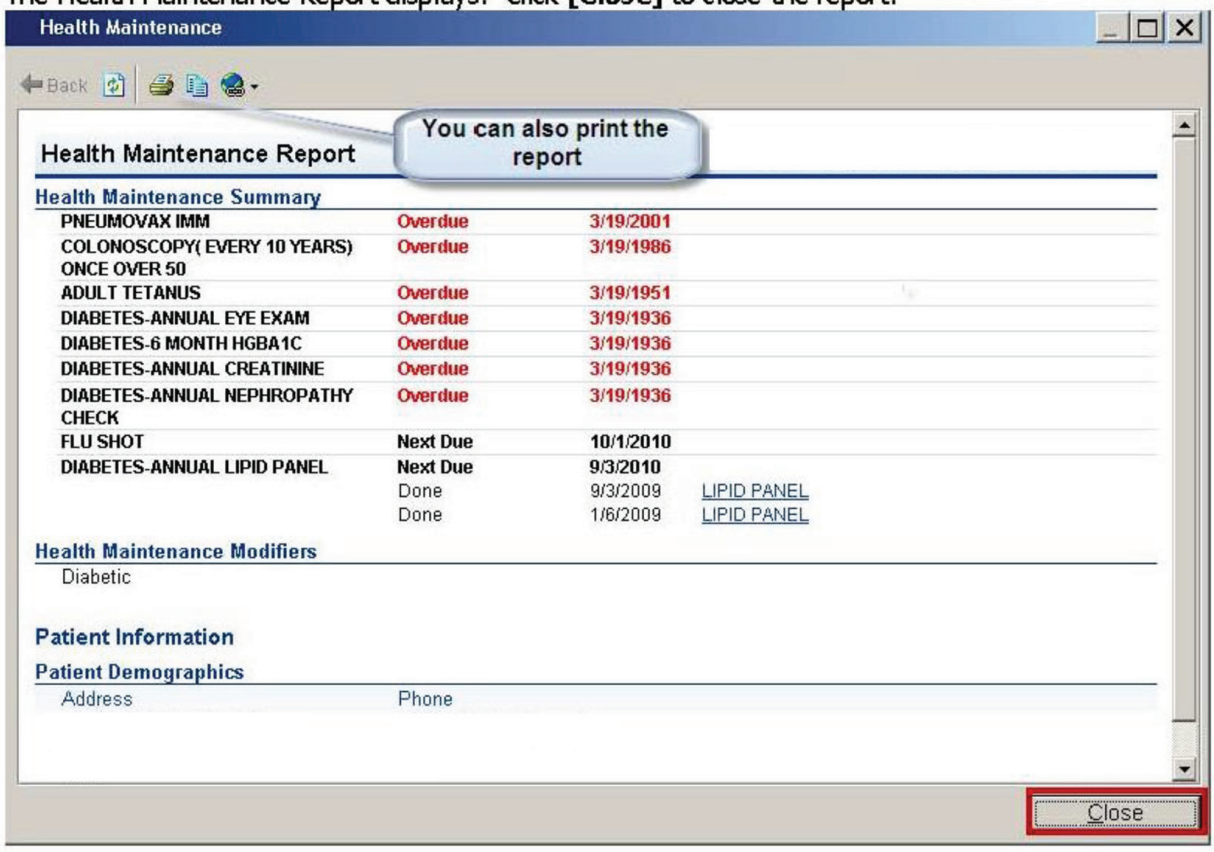
4 Double click the modifier. Click **[Accept]** to add it to the patient's health maintenance list.

View/Print Patient's Health Maintenance Report

1 From the Health Maintenance activity, click **[Report]**



2 The Health Maintenance Report displays. Click **[Close]** to close the report.



PUBLISH TRANSPARENT INTERNAL REPORTS

Unblinded performance reports are generated and distributed at least quarterly to providers and care teams, as well as administrative leadership. Action plans establish targets for improvement and address performance. There is a process to recognize and spread best practices.

Internal transparent reporting in the context of quality initiatives can foster a culture of candor and provide ongoing feedback that enhances performance and improves outcomes. This transparency also serves as an important driver of accountability for individual providers, care teams, and the entire organization.

Tracking and reporting quality data through such reports can:

- Motivate everyone to improve performance;
- Recognize high performers;
- Disseminate their best practices across the organization;
- Provide the opportunity for leadership to better understand and address system and workflow barriers to improving care;
- Mobilize and motivate all care team members to create solutions that improve performance;
- Prepare the group for the shift to publicly-reported data; and
- Promote changes in clinical behaviors, such as following evidence-based guidelines, ordering recommended tests, and addressing patient adherence.

Transparent internal reports should clearly show the baseline and progress toward the goal for appropriate clinical measures and include comparative graphs or charts organized by individual provider, care team, and site of care. Diabetes-related metrics should align with your organizations' strategic quality goals, which might reflect value or risk-based contracts or participation in state or national programs including Together 2 Goal®.

TIPS TO EFFECTIVELY CREATE TRANSPARENT INTERNAL REPORTING

If your organization does not currently publish transparent internal reports:

- Start by reviewing individual reports confidentially with providers to assure data accuracy and address any concerns.
- Discuss the purpose of the reports and recognize high performers at group meetings to garner understanding and buy-in.
- Determine frequency and dissemination of reports.
- Communicate timeline for unblinded reports.

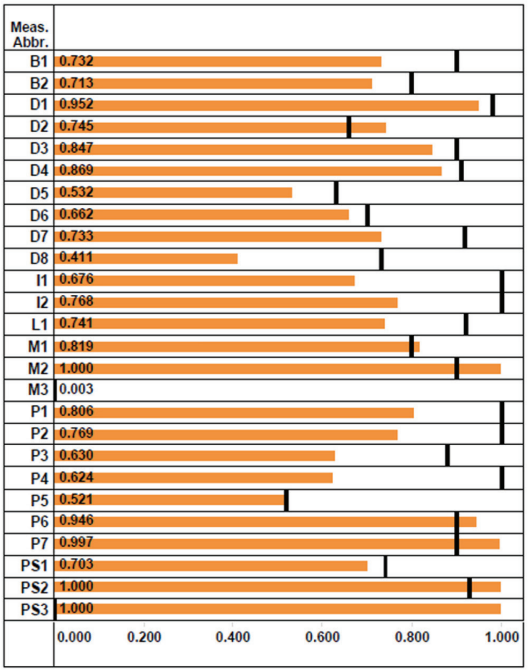
If your organization currently publishes transparent internal reports:

- Determine if reports are being reviewed by all care team members.
- Consider delivering reports by hand, reviewing reports at beginning of meetings, or posting results publicly to convey importance of reports.
- Continue to discuss the purpose of the reports, preferably at group meetings, to garner understanding and buy-in.
- Include an up-to-date worklist of patients not at goal (refer to Use a Patient Registry plank) and develop an action plan with clear timelines, responsibilities, and accountability.
- Create friendly competition between providers or sites of care by offering incentives, such as a healthy lunch or gift card, to the teams with most improvement.

TOOL: PATHWAYS TO EXCELLENCE REPORTS

CORNERSTONE HEALTH CARE, P.A.

Bundle	Meas. Abbr.	Measure Name	Num.	Den.
BP Control	B1	Adult High BP Screen	29,341	40,056
	B2	HTN BP <140/90	16,177	22,694
Diabetes	D1	DM HbA1c Test	10,797	11,340
	D2	DM HbA1c <8.0%	8,235	11,054
	D3	DM HbA1c Performed and <9.0%	8,658	10,226
	D4	DM LDL Test	9,849	11,340
	D5	DM LDL <100mg/dl	5,881	11,054
	D6	DM Lipid Lowering Agent if LDL >100	2,269	3,430
	D7	DM Nephropathy Screening	8,447	11,521
	D8	DM Retinopathy Screening	4,200	10,226
Immun.	I1	Influenza Immunization	47,960	70,995
	I2	Pneumonia Vaccination	20,095	26,154
Lipid Mgmt.	L1	Cholesterol Screening for Cardiovascular Care	19,720	26,598
Misc.	M1	ACE ARB Therapy CAD, DM, LVSD	1,241	1,516
	M2	HF BB Therapy for LVSD	4	4
	M3	Depression Remission at 12 Months	3	1,154
Preventative Screening	P1	Adult BMI Screen and Follow-up	63,816	79,146
	P2	Breast Cancer Screen	16,343	21,264
	P3	Cervical Cancer Screen	13,084	20,759
	P4	Colorectal Cancer Screen	14,632	23,435
	P5	Depression Screen and Follow-Up	45,021	86,330
	P6	Tobacco Use and Cessation Counseling	80,571	85,189
	P7	Annual Comprehensive PCP Visit	26,528	26,598
Pt. Safety	PS1	Screen for Future Fall Risk	18,291	26,003
	PS2	High Risk Medication	26,597	26,598
	PS3	Documentation of Current Medications in EMR	79,682	79,682

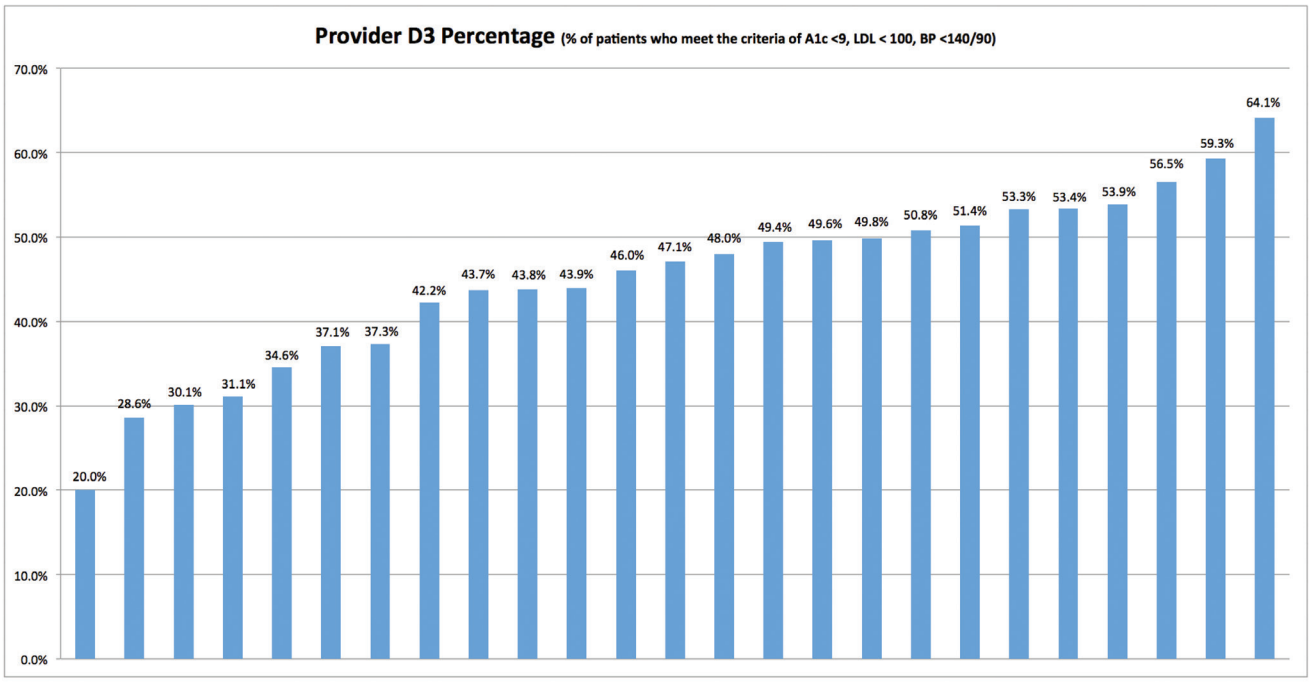


Diabetes Pathway to Excellence Metrics

Metric	Cornerstone Goal
DM Retinopathy Screening	73%
DM BP <140/90	68%
DM HbA1c Test	91%
DM LDL Test	90%
DM Nephropathy Screening	89%
DM HbA1c <8%	70%
DM LDL <100mg/dl if LDL >100	64%
DM HbA1c Performed >9 or missing	<13%
Daily Aspirin DM and IVD	36.5%
DM Tobacco Non-Use	36.5%
DM Lipid Lowering Agent	80%

TOOL: PROVIDER D3 PERCENTAGE

PREMIER MEDICAL ASSOCIATES, P.C.



TOOL: WORK LIST BY PHYSICIAN

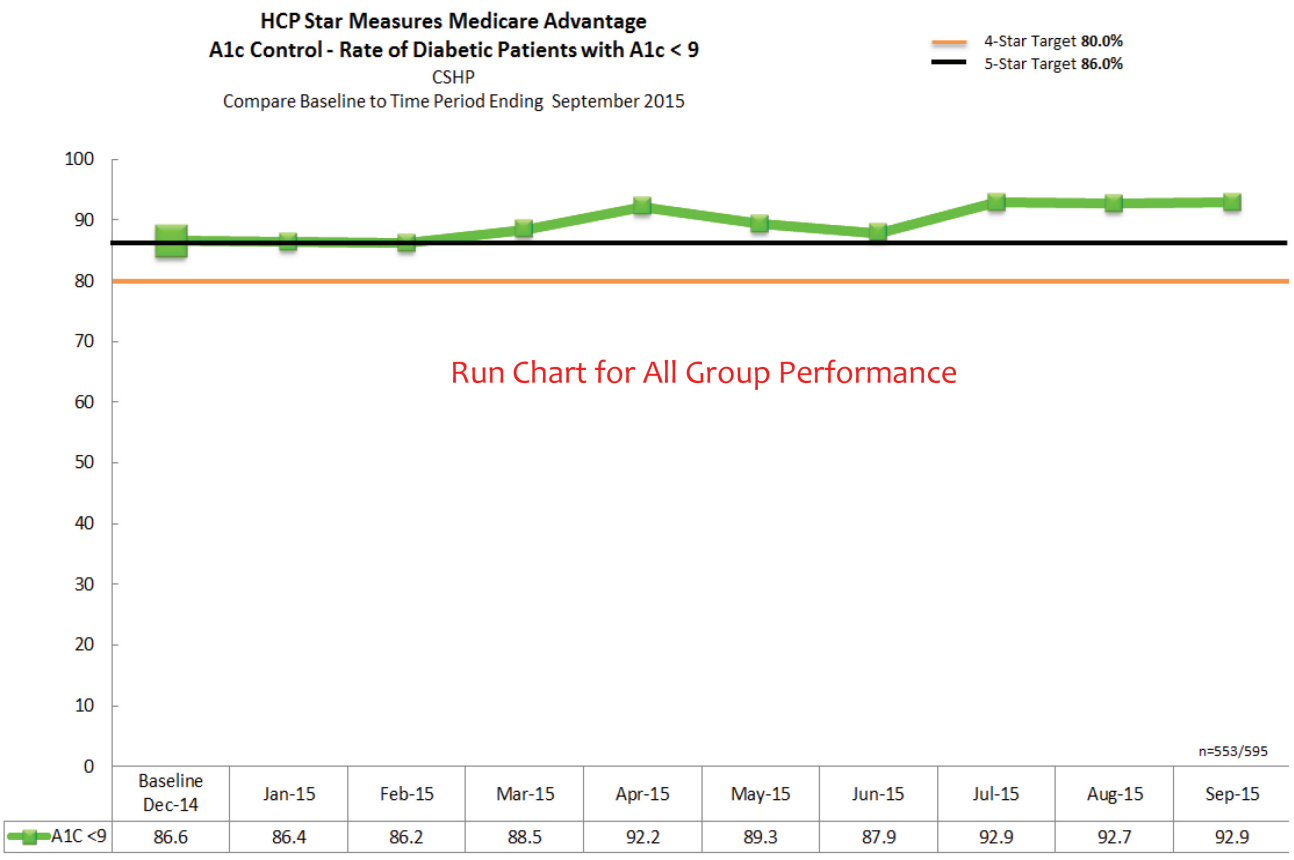
COLORADO SPRINGS HEALTH PARTNERS

DM: Pts w A1C >= 9% or w/o Urine Albumim Roundhouse
Patient List

Patient ID	Current PCP	Last A1c	Date of Last A1c	Pts had Urine Albumim	Date of Urine Albumim	Pt w Dx of Dm (Problem List) [Up to End of Time Period]	Pt w Dx of Dm w/o Dx of Sec/Gest DM [Up to End of Period]
		6.0	03/09/2015	No		Yes	Yes
		7.6	10/28/2015	No		Yes	Yes
		7.1	12/10/2014	No		Yes	Yes
		12.8	08/28/2015	Yes	08/28/2015	Yes	Yes
		9.8	09/12/2015	Yes	09/112/2015	Yes	Yes
		6.8	08/17/2015	No		Yes	Yes
				No		Yes	Yes
		7.1	05/21/2015	No		Yes	Yes
		5.7	12/08/2014	No		Yes	Yes
				No		Yes	Yes
		7.3	05/19/2015	No		Yes	Yes
		9.3	10/30/2015	Yes	10/30/2015	Yes	Yes
		5.0	08/28/2015	No		Yes	Yes
		5.7	09/14/2015	No		Yes	Yes
		10.1	09/04/2015	Yes	11/04/2015	Yes	Yes
				No		Yes	Yes
		7.9	10/06/2015	No		Yes	Yes
		9.3	08/25/2015	Yes	04/29/2015	Yes	Yes
		6.5	04/30/2015	No		Yes	Yes
		5.7	08/28/2015	No		Yes	Yes
				No		Yes	Yes
				No		Yes	Yes
		5.8	06/01/2015	No		Yes	Yes
				No		Yes	Yes

TOOL: TRANSPARENT REPORTS

COLORADO SPRINGS HEALTH PARTNERS

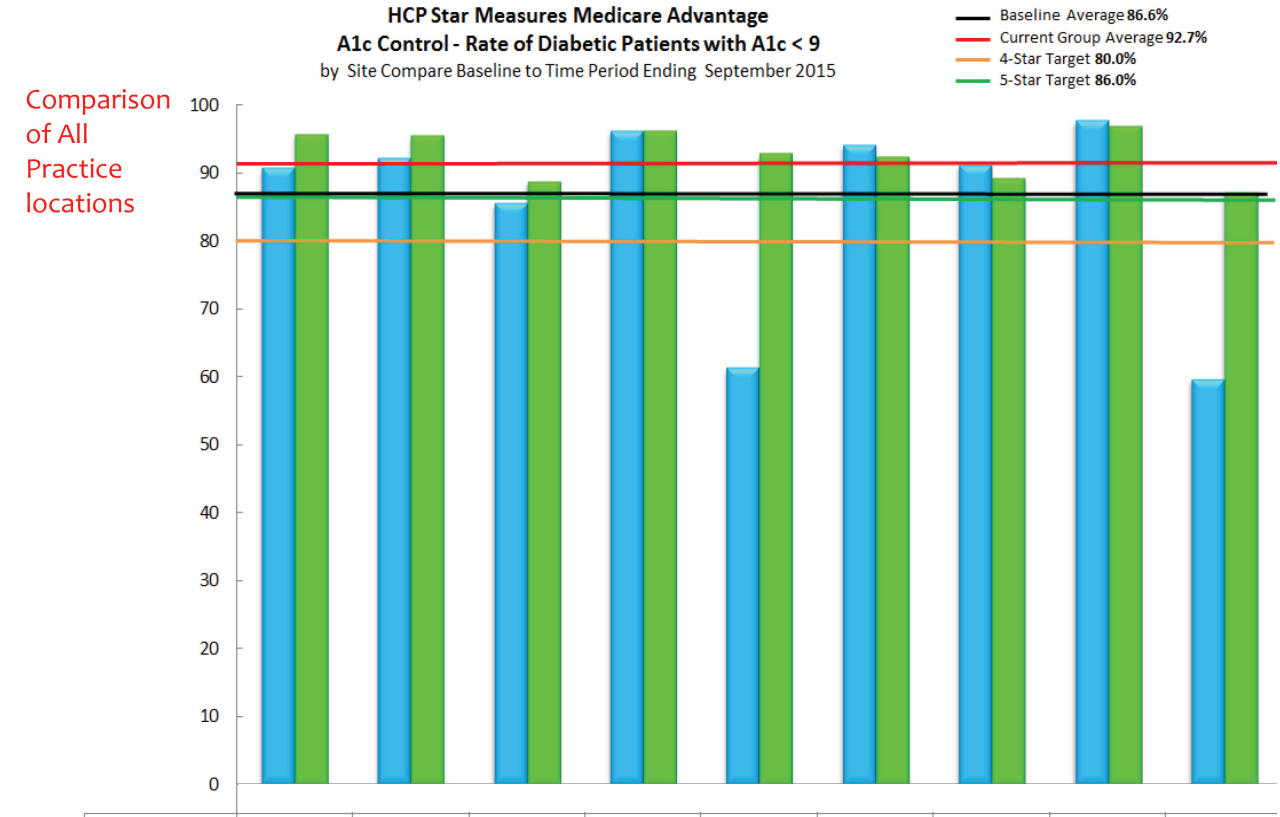


	Baseline Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15
A1C <9	86.6	86.4	86.2	88.5	92.2	89.3	87.9	92.9	92.7	92.9

Definitions: Percentage of members 18-75 with diabetes (Type I and II), and most recent A1c level < 9. **Exclusions:** Members who do not have a diagnosis of gestational diabetes, steroid-induced diabetes, or polycystic ovaries.

Run Date: 11/16/2015

Comparison of All Practice locations



Baseline DEC-14	90.7	92.1	85.5	96.2	61.4	94.1	91.1	97.7	59.7
Sep-15	95.7	95.6	88.7	96.2	92.9	92.3	89.3	96.9	87.1

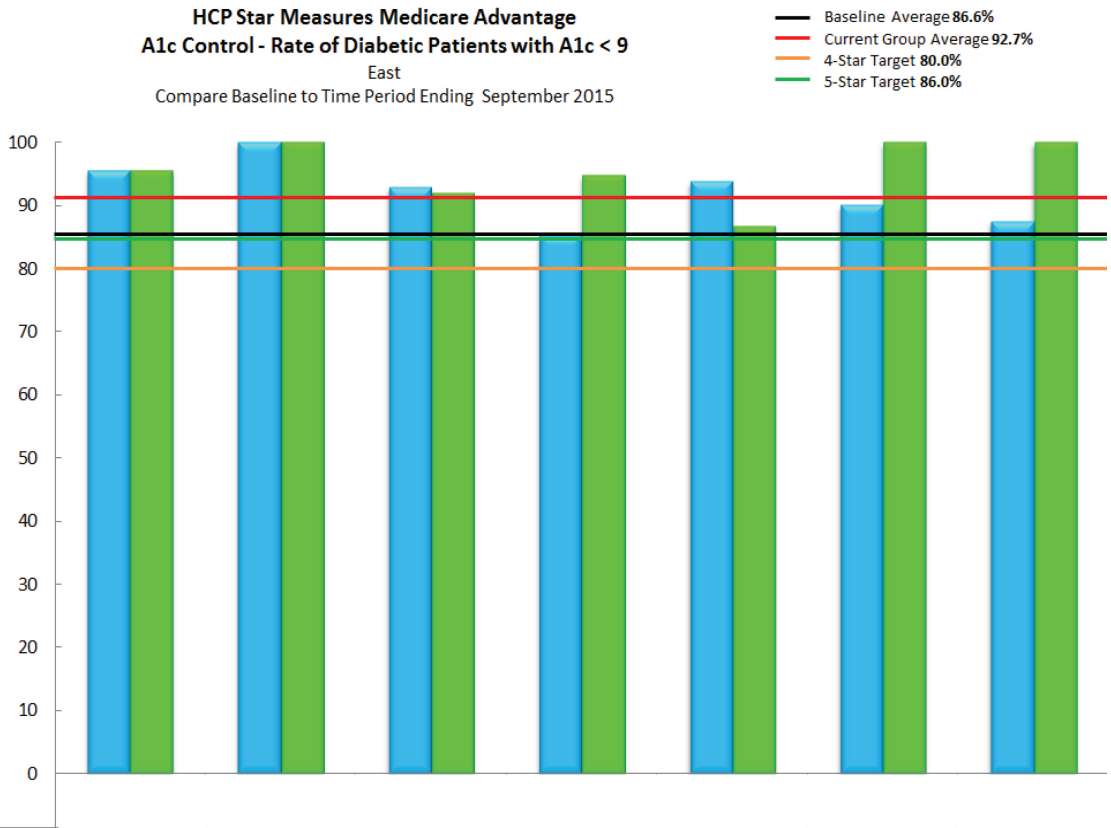
Definitions: Percentage of members 18-75 with diabetes (Type I and II), and most recent A1c level < 9. **Exclusions:** Members who do not have a diagnosis of diabetes, or who have a diagnosis of gestational diabetes, steroid-induced diabetes, or polycystic ovaries.

*Average of providers by site.

Run date: 11/16/2015

COLORADO SPRINGS HEALTH PARTNERS

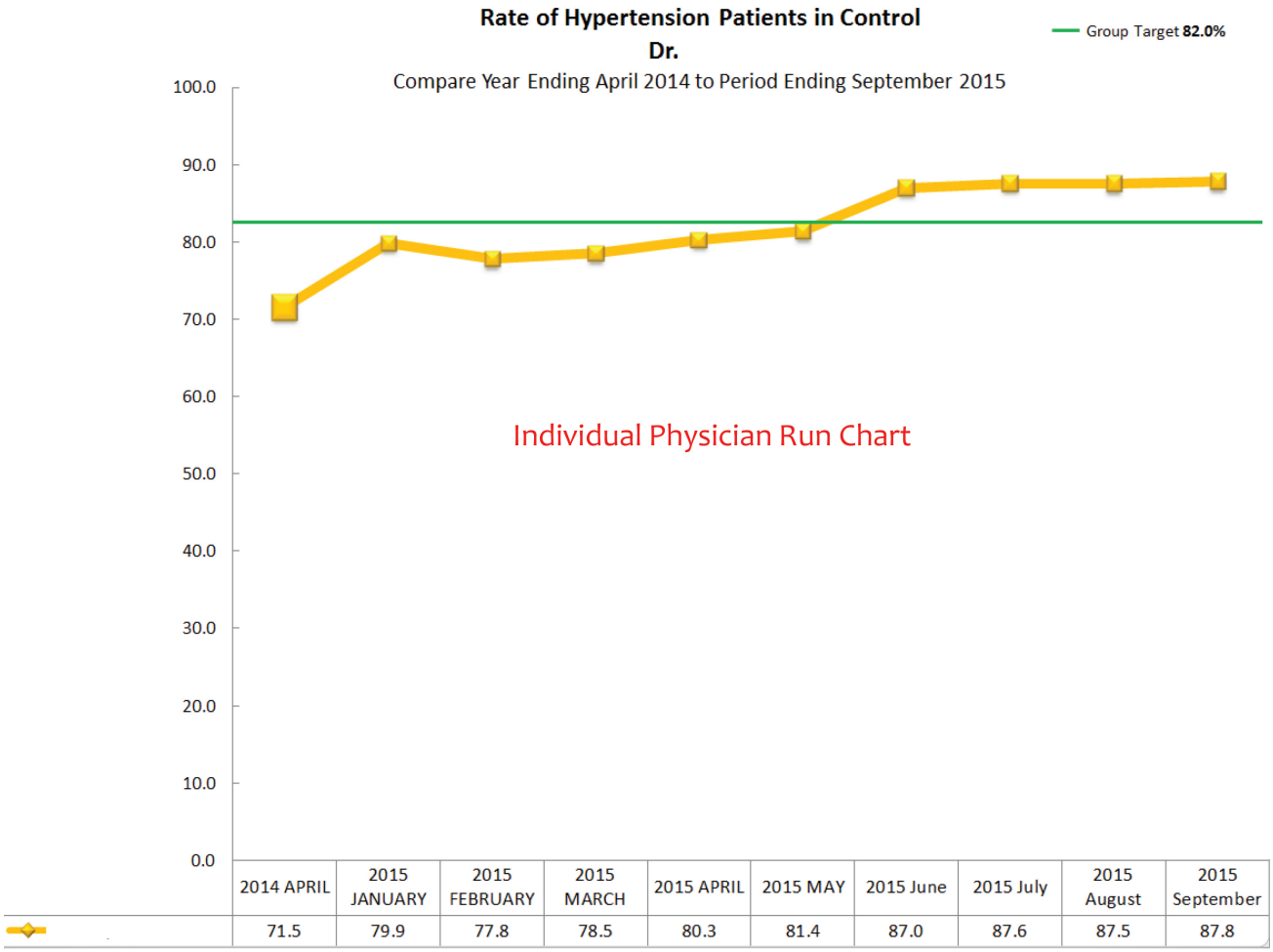
Comparison of All Physicians at Practice Site



Baseline Dec-14	95.5	100.0	92.9	85.2	93.8	90.0	87.5
Sep-15	95.5	100.0	92.0	94.7	86.7	100.0	100.0

Definitions: Percentage of members 18-75 with diabetes (Type I and II), and most recent A1c level < 9. **Exclusions:** Members who do not have a diagnosis of diabetes, or who have a diagnosis of gestational diabetes, steroid-induced diabetes, or polycystic ovaries.

Run date: 11/16/2015



	2014 APRIL	2015 JANUARY	2015 FEBRUARY	2015 MARCH	2015 APRIL	2015 MAY	2015 June	2015 July	2015 August	2015 September
	71.5	79.9	77.8	78.5	80.3	81.4	87.0	87.6	87.5	87.8