Welcome to the Diabetes: Together 2 Goal® Campaign Toolkit Supplement!

Over the last three years, more than 150 medical groups and health systems nationwide have joined the campaign and collectively improved care for more than 750,000 Americans with Type 2 diabetes. To build on this strong progress and reach our goal of improving diabetes care for 1 million people, Together 2 Goal® is extending the campaign beyond March 2019 through March 2021.

Together 2 Goal® created the original Toolkit to help you implement best practices and address many of the common challenges associated with effectively managing Type 2 diabetes. This Toolkit Supplement is intended to support you as you work to refine and hardwire your organization’s improvement processes over the course of the campaign extension.

A downloadable version of the Toolkit Supplement can be accessed at www.together2goal.org. We hope you find the Toolkit Supplement useful and consider sharing it with your colleagues.

Other campaign resources, including our monthly campaign webinars, data reporting portal, and additional patient and provider resources, are also available at the campaign website.

Best,
The Together 2 Goal® Team
# TABLE OF CONTENTS

## IMPLEMENTING THE PLANKS

### Build an Accountable Diabetes Team
- **Tool:** Insulin Initiation and Administration Worksheet (Lexington Clinic)  
  5-7

### Integrate Emotional and Behavioral Support
- **Tool:** Diabetes Distress Scale (Behavioral Diabetes Institute)  
  9-11

### Refer to Diabetes Self-Management Education and Support Programs
- **Tool:** The Algorithm of Care (ADA, AADE, and Academy of Nutrition and Dietetics)  
  13
- **Insight:** Weight Loss and Management of Type 2 Diabetes (AMGA Analytics)  
  14-16

### Conduct Practice-Based Screening
- **Insight:** Diabetes Screening and Undiagnosed Patients at Risk  
  (AMGA Analytics)  
  17-21

### Adopt Treatment Algorithm
- **Tool:** Diabetes Treatment Algorithm (Geisinger)  
  23
- **Tool:** Diabetes Management Algorithm (Mercy)  
  24

### Measure HbA1c Every 3-6 Months
- **Insight:** Controlling Glucose Levels in Patients with Type 2 Diabetes  
  (AMGA Analytics)  
  25-29
- **Tool:** HbA1c POC Testing Handout (Mercy)  
  30

### Assess and Address Risk of Cardiovascular Disease
- **Tool:** Blood Pressure Patient Worksheet (SwedishAmerican Health System)  
  31

### Contact Patients Not at Goal and with Therapy Change within 30 Days
- **Insight:** Overcoming Therapeutic Inertia (AMGA Analytics)  
  33-36

### Embed Point-of-Care Tools
- **Tool:** Overdue Health Maintenance Alert (Baton Rouge Clinic)  
  37

### Publish Transparent Internal Reports
- **Tool:** Internal Provider Performance Report (Ballad Health)  
  39-40
- **Tool:** Nephropathy Improvement (SwedishAmerican Health System)  
  41

### Copyright and Disclaimer  
  43
**Insulin Initiation and Administration**

**Insulin Basics**

- Insulin works best when injected into the fat just under the skin, not into the muscle. Use the picture to see where to inject insulin.

![Insulin Injection Sites](image)

- Injection site rotation - Injecting in the same spot causes hard lumps or fatty deposits and affects your body’s ability to absorb the insulin. Rotate the injection site with every injection at least a finger-width away from your last injection.

- Do not inject insulin near moles or scars, in areas that look red, infected, have a rash or within two inches of the navel (belly button) in any direction.

- A bolus insulin is specifically before meal times to keep blood glucose levels under control following a meal. Bolus insulin needs to act quickly so short acting insulin or rapid (fast) acting insulin will be used.

- A basal insulin works in the background to keep blood glucose levels under control throughout the day lasting up to 24 hours. They are called long-acting or background insulins.

**Patient Initials:** ____________

**Insulin Vial Injection Training**

1. Wash and dry your hands.
2. Choose a clean and dry site for injection. Wipe site with alcohol pad.
3. Check the bottle to be sure you are using the right insulin.
4. If your insulin is cloudy, roll it gently between your hands. Do not shake it.
5. Take caps off the insulin needle and the plunger.
6. Pull the plunger back to the number of units you use to fill it with air.
7. Put the needle in the insulin vial and push the plunger down completely so the air goes into the bottle.
8. Turn the syringe and bottle upside down, keeping the needle tip below the level of insulin in the bottle. Pull back on the plunger to pull out the number of units you need.
9. Check for air bubbles in the syringe. Tap the syringe to move any air bubbles to the top and gently push them out with the plunger.
10. Use the insulin immediately.
11. You may gently pinch a fold of fatty skin between your fingers.
12. Push the needle quickly, straight into the skin, relax the pinch and push plunger down to inject the insulin.
13. Wait a few seconds and then pull the needle straight out.
14. Do not rub the site.

**Insulin Pen Injection Training**
1. Wash and dry your hands.
2. Choose a clean and dry site for injection. Wipe site with alcohol pad.
3. For a new pen, look at the dose window and turn the dosage knob to ‘2’ units. Holding the pen with the needle point upwards, press the button until a drop of insulin appears. This is the “air shot” or safety shot. Repeat this step if needed until a drop of insulin appears. Ask your healthcare provider to show you how to do this.
4. Turn the dial on your insulin pen to your dose of insulin.
5. You may gently pinch a fold of fatty skin between your fingers.
6. Push needle into the skin, and then relax the pinch.
7. Press down on the plunger to inject the insulin.
8. Hold the pen in the skin for a count of 5-10 seconds (larger doses may require the whole ten seconds). Withdraw from the skin. Practice injections in front of your healthcare provider to help learn this skill.

**Patient Initials:**

---

**Insulin Storage Requirements**

*General guidelines are provided below. Specific insulin storage recommendations are provided by the manufacturer, can be located on the medication package insert and should be strictly followed.*

**Rapid Acting Insulin — Novolog, Humalog, Apidra**

Storage: Unopened vial, pen, or cartridge store in refrigerator. Opened vial, pen, or cartridge can store at room temp for 28 days. Protect from light.

**Short Acting Insulin — Humulin R, Novolin R**

- **Humulin R:** Unopened vial store in refrigerator. Opened vial can store at room temp for 28 days. Protect from light.
- **Novolin R:** Unopened vial store in refrigerator. Opened vial can store at room temp for 42 days. Protect from light.

**Intermediate-Acting Insulin — Insulin NPH (Humulin N) (Novolin N), Regular U-500 (Humulin R U-500)**

Storage: Unopened vials, pens, or cartridges store in refrigerator. Protect from light.

- **Humulin N:** Opened vial can store at room temp for 31 days. Opened pen/cartridge can be stored at room temp for 14 days.
- **Novolin N:** Opened vial can store at room temp for 42 days.
- **Humulin R U-500:** Opened vial can store at room temp for 40 days. Opened pen can store at room temp for 28 days.

**Long Acting Insulin — Levemir, Lantus, Toujeo, Tresiba**

Storage: Unopened vials, pens, or cartridges store in refrigerator. Protect from light.

- **Levemir:** Opened vial or pen can be stored at room temp for 42 days.
- **Lantus:** Opened vial, cartridge, or pen can be stored at room temp for 28 days.
- **Toujeo:** Opened pen should be stored at room temp only for 42 days.
- **Tresiba:** Opened pen can be stored at room temp for 56 days (8 weeks).
Premixed Insulin - Humulin 70/30, Novolin 70/30, Humalog Mix 50/50, Humalog Mix 75/50, Humalog Mix 75/25, Novolog Mix 70/30

Storage: Unopened vial, pen, or cartridge store in refrigerator. Protect from light.

- **Humulin 70/30**: Opened vial can be stored at room temp for 31 days. Opened pen/cartridge can be stored at room temp for 10 days.
- **Novolin 70/30**: Opened vial can be stored at room temp for 42 days.
- **Humalog Mix**: Opened vial can be stored at room temp for 28 days. Opened pen/cartridge can be stored at room temp for 10 days.
- **Novolog Mix**: Opened vial can be stored at room temp for 28 days. Opened pen/cartridge can be stored at room temp for 14 days.

**Patient Initials:** ____________

**Timing of Doses**

It is very important to follow your healthcare provider’s recommendations on timing of insulin injections as each type varies on how fast or slow they begin to work. You should also follow recommendations on when to take insulin at meal times or with food in order to maximize the benefits of the medication and to avoid potential side effects like low blood sugar episodes.

I verify training on insulin initiation and administration has been completed.

Verified by (LC Staff member):

________________________

Print Name AND Signature

Completed by Patient

________________________

Print Name AND Signature

Date: ________________________________
**TOOL: DIABETES DISTRESS SCALE**

**DIRECTIONS:** Living with diabetes can sometimes be tough. There may be many problems and hassles concerning diabetes and they can vary greatly in severity. Problems may range from minor hassles to major life difficulties. Listed below are 17 potential problem areas that people with diabetes may experience. Consider the degree to which each of the 17 items may have distressed or bothered you DURING THE PAST MONTH and circle the appropriate number.

Please note that we are asking you to indicate the degree to which each item may be bothering you in your life, NOT whether the item is merely true for you. If you feel that a particular item is not a bother or a problem for you, you would circle "1". If it is very bothersome to you, you might circle "6".

<table>
<thead>
<tr>
<th>Item</th>
<th>Not a Problem</th>
<th>A Slight Problem</th>
<th>A Moderate Problem</th>
<th>Somewhat Serious Problem</th>
<th>A Serious Problem</th>
<th>A Very Serious Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling that diabetes is taking up too much of my mental and physical energy every day.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. Feeling that my doctor doesn't know enough about diabetes and diabetes care.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. Not feeling confident in my day-to-day ability to manage diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. Feeling angry, scared and/or depressed when I think about living with diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. Feeling that my doctor doesn't give me clear enough directions on how to manage my diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. Feeling that I am not testing my blood sugars frequently enough.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. Feeling that I will end up with serious long-term complications, no matter what I do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. Feeling that I am often failing with my diabetes routine.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Statement</td>
<td>Not a Problem</td>
<td>A Slight Problem</td>
<td>A Moderate Problem</td>
<td>Somewhat Serious Problem</td>
<td>A Serious Problem</td>
<td>A Very Serious Problem</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>---------------</td>
<td>------------------</td>
<td>--------------------</td>
<td>--------------------------</td>
<td>------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>9. Feeling that friends or family are not supportive enough of self-care efforts (e.g. planning activities that conflict with my schedule, encouraging me to eat the &quot;wrong&quot; foods).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. Feeling that diabetes controls my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. Feeling that my doctor doesn't take my concerns seriously enough.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. Feeling that I am not sticking closely enough to a good meal plan.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. Feeling that friends or family don't appreciate how difficult living with diabetes can be.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. Feeling overwhelmed by the demands of living with diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. Feeling that I don't have a doctor who I can see regularly enough about my diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. Not feeling motivated to keep up my diabetes self management.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>17. Feeling that friends or family don't give me the emotional support that I would like.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
INTEGRATE EMOTIONAL AND BEHAVIORAL SUPPORT

TOOL: **DIABETES DISTRESS SCALE** (CONTINUED)

BEHAVIORAL DIABETES INSTITUTE

---

**DDS1.1 SCORING SHEET**

**INSTRUCTIONS FOR SCORING:**

The DDS17 yields a total diabetes distress score plus 4 subscale scores, each addressing a different kind of distress.\(^1\) To score, simply sum the patient’s responses to the appropriate items and divide by the number of items in that scale.

Current research\(^2\) suggests that a mean item score 2.0 – 2.9 should be considered ‘moderate distress,’ and a mean item score ≥ 3.0 should be considered ‘high distress.’ Current research also indicates that associations between DDS scores and behavioral management and biological variables (e.g., A1C) occur with DDS scores of ≥ 2.0. Clinicians may consider moderate or high distress worthy of clinical attention, depending on the clinical context.

We also suggest reviewing the patient’s responses across all items, regardless of mean item scores. It may be helpful to inquire further or to begin a conversation about any single item scored ≥ 3.

**Total DDS Score:**

- a. Sum of 17 item scores.
- b. Divide by: ___
- c. Mean item score:
  - Moderate distress or greater? (mean item score > 2) ___ yes ___ no ___

**A. Emotional Burden:**

- a. Sum of 5 items (1, 4, 7, 10, 14)
- b. Divide by: ___
- c. Mean item score:
  - Moderate distress or greater? (mean item score > 2) ___ yes ___ no ___

**B. Physician Distress:**

- a. Sum of 4 items (2, 5, 11, 15)
- b. Divide by: ___
- c. Mean item score:
  - Moderate distress or greater? (mean item score > 2) ___ yes ___ no ___

**C. Regimen Distress:**

- a. Sum of 5 items (6, 8, 3, 12, 16)
- b. Divide by: ___
- c. Mean item score:
  - Moderate distress or greater? (mean item score > 2) ___ yes ___ no ___

**D. Interpersonal Distress:**

- a. Sum of 3 items (9, 13, 17)
- b. Divide by: ___
- c. Mean item score:
  - Moderate distress or greater? (mean item score ≥ 2) ___ yes ___ no ___

---


*Courtesy of AMGA’s Together 2 Goal® Campaign National Partner, Behavioral Diabetes Institute*
Diabetes Self-Management Education and Support for Adults with Type 2 Diabetes: ALGORITHM of CARE

ADA Standards of Medical Care in Diabetes recommends all patients be assessed and referred for:

**NUTRITION**
Registered dietitian for medical nutrition therapy

**EDUCATION**
Diabetes self-management education and support

**EMOTIONAL HEALTH**
Mental health professional if needed

**FOUR CRITICAL TIMES TO ASSESS, PROVIDE, AND ADJUST DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT**

1. **AT DIAGNOSIS**
- Newly diagnosed. All newly diagnosed individuals with type 2 diabetes should receive DSME/S
- Ensure that both nutrition and emotional health are appropriately addressed in education or make separate referrals

2. **ANNUAL ASSESSMENT OF EDUCATION, NUTRITION, AND EMOTIONAL NEEDS**
- Needs review of knowledge, skills, and behavior
- Nutrition
- Long-standing diabetes with limited prior education
- Change in medication, activity, or nutritional intake
- HbA1c, out of target
- Maintain positive health outcomes
- Uneral hypoglycemia or hyperglycemia
- Planning pregnancy or pregnant
- For support to attain or sustain behavior change(s)
- Weight or other nutrition concerns
- New life situations and competing demands

3. **WHEN NEW COMPLICATING FACTORS INFLUENCE SELF-MANAGEMENT**
- Health conditions such as renal disease and stroke, need for steroid or complicated medication regimen
- Physical limitations such as visual impairment, dexterity issues, movement restrictions
- Emotional factors such as anxiety and clinical depression
- Basic living needs such as access to food, financial limitations

4. **WHEN TRANSITIONS IN CARE OCCUR**
- Living situation such as inpatient or outpatient rehabilitation or now living alone
- Medical care team
- Insurance coverage that results in treatment change
- Age-related changes affecting cognition, self-care, etc.

**CHANGE IN:**
- Health conditions such as renal disease and stroke, need for steroid or complicated medication regimen
- Physical limitations such as visual impairment, dexterity issues, movement restrictions
- Emotional factors such as anxiety and clinical depression
- Basic living needs such as access to food, financial limitations


Courtesy of AMGA’s Together 2 Goal® Campaign National Partners, American Diabetes Association and American Association of Diabetes Educators.
Obesity is well established as a major, modifiable risk factor in the development of Type 2 diabetes. More than 95% of patients living with Type 2 diabetes in the U.S. are also living with overweight or obesity (CDC 2013) and nearly one-fifth transition in or out of glycemic control over a 12-month period. With this knowledge, AMGA sought to determine how weight loss might be associated with achieving and maintaining glycemic control (A1c < 8%) among patients diagnosed with Type 2 diabetes.

AMGA used longitudinal electronic health record (EHR) data in the Optum® Analytics database from 29 U.S. healthcare organizations (Figure 1) to identify 144,644 adult patients with a diagnosis or evidence of Type 2 diabetes for the analysis. Multivariable regression models were run to examine the magnitude of different categories of weight loss (2-4%, 5-7%, and ≥ 8% of body weight) on achieving and maintaining glycemic control using two models: one for patients considered in glycemic control (A1c < 8.0) and one for patients out of control (A1c ≥ 8.0) at baseline over a 12- to 15-month period.

Small Weight Losses Are Positively Associated with Achieving and Maintaining Glycemic Control

After controlling for sociodemographics, select comorbid conditions, and diabetes medications, weight loss was found to be an independent factor in achieving and maintaining glycemic control in patients living with Type 2 diabetes. Most importantly, even small amounts of weight loss were positively associated with achieving and maintaining glycemic control among both groups of patients with Type 2 diabetes (A1c < 8% and A1c ≥ 8%). However, the effect was significantly larger for patients whose glycemic levels were uncontrolled at baseline.
(Figure 2). With a 2–4% loss of body weight, patients with A1c ≥ 8.0 increased their likelihood of moving into control by 27% at follow-up 12 to 15 months later. Their odds increased to 70% with a weight loss of 5–7% of body weight, and finally, 195% if they lost 8% or more of their body weight. Patients in glycemic control at baseline also improved their odds of staying in control by 30% to 78% with a loss of 2% to more than 8% of body weight at follow-up.

Patients may be more motivated to reach small, achievable goals in weight loss if they understand the significance this can have on achieving and maintaining glycemic control.

Steps to Help Patients Succeed with Achievable Weight Losses

- Collaborate with front-line health professionals, particularly behavioral health specialists, health coaches, dieticians, navigators, and others who converse with patients with Type 2 diabetes regularly to help them integrate this information into conversations about goal setting with patients when weight loss goals are within reach.

- Target patients with Type 2 diabetes affected by obesity as well as patients who appear “safe” (A1c < 8) but are at higher risk of slipping out of glycemic control in outreach and educational activities and convey the importance of weight management in maintaining glycemic control to prevent progression and complications associated with Type 2 diabetes. (See INSIGHT: The Leaky Bucket)

- Incorporate training on obesity and weight loss into continuing education modules for front-line providers working with patients living with Type 2 diabetes. Make sure providers are informed about how to begin conversations about weight, what words to use, and how to communicate effectively about weight in ways that are supportive to patients.
Utilize pamphlets and other discussion guides, such as *WHY WEIGHT? A Guide to Discussing Obesity and Health with Your Patients*, prepared by the STOP Obesity Alliance in provider trainings. stopobesityalliance.org/wp-content/themes/stopobesityalliance/pdfs/STOP-Provider-Discussion-Tool.pdf

Start a Medicare Diabetes Prevention Program (MDPP), an expansion of the highly successful Centers for Disease Control and Prevention (CDC) Program pilot. MDPP provides reimbursement for structured behavior change interventions that aim to prevent the onset of Type 2 diabetes among Medicare beneficiaries with prediabetes. innovation.cms.gov/initiatives/medicare-diabetes-prevention-program

Provide this information to insurers and employers to demonstrate how achievable reductions in body weight for patients with Type 2 diabetes are associated with achieving and maintaining glycemic control to encourage their support for coverage of, access to, and incentives for routine obesity prevention, screening, diagnosis, and treatment.

Talk to employers about the importance of healthy lifestyles and other workplace incentives to encourage worksites to create or expand healthy programs and environments for employees living with pre-diabetes or diabetes.

**References**
1. See INSIGHT: Controlling Glucose Levels in Patients with Type 2 Diabetes
2. The study used longitudinal electronic health record (EHR) data from 29 U.S. healthcare organizations who pool their EHR data as part of a national learning collaborative. All organizations in the collaborative use Optum’s population health management and risk analytics platform which extracts data for multiple sources, cleans, normalizes and validates it, making it possible to conduct accurate lateral analysis and comparisons. Optum Analytics’ clinical database is comprised of longitudinal ambulatory EHR data from 106 million patients treated by 84 US healthcare organizations. The longitudinal patient records are de-identified and become part of one of the largest integrated data warehouses in the U.S., also managed by Optum.
3. See INSIGHT: Controlling Glucose Levels in Patients with Type 2 Diabetes

*Developed in partnership with Optum, AMGA’s Distinguished Data & Analytics Corporate Collaborator*
AMGA examined screening patterns for Type 2 diabetes across and within 23 U.S. healthcare organizations using the Optum® Analytics database. Among 5.1 million adult patients included in the analysis, we determined who was eligible for screening according to the American Diabetes Association (ADA) Standards of Medical Care in Diabetes, and whether those eligible were properly screened. Among the population of patients screened, AMGA examined overall screening yields (i.e., results indicating diabetes or prediabetes), stratified by demographic and socioeconomic factors. The most disturbing finding: patients least likely to be screened are most likely to have results indicating diabetes or prediabetes.

### ADA Screening Guidelines:

<table>
<thead>
<tr>
<th>Table 2.3—Criteria for testing for diabetes or prediabetes in asymptomatic adults</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Testing should be considered in overweight or obese (BMI ≥25 kg/m² or ≥23 kg/m² in Asian Americans) adults who have one or more of the following risk factors:</strong></td>
</tr>
<tr>
<td>- First-degree relative with diabetes</td>
</tr>
<tr>
<td>- High-risk race/ethnicity (e.g., African American, Latino, Native American, Asian American, Pacific Islander)</td>
</tr>
<tr>
<td>- History of CVD</td>
</tr>
<tr>
<td>- Hypertension (≥140/90 mmHg or on therapy for hypertension)</td>
</tr>
<tr>
<td>- HDL cholesterol level &lt;35 mg/dL (0.90 mmol/L) and/or a triglyceride level &gt;250 mg/dL (2.82 mmol/L)</td>
</tr>
<tr>
<td>- Women with polycystic ovary syndrome</td>
</tr>
<tr>
<td>- Physical inactivity</td>
</tr>
<tr>
<td>- Other clinical conditions associated with insulin resistance (e.g., severe obesity, acanthosis nigricans)</td>
</tr>
<tr>
<td><strong>2. Patients with prediabetes (A1C ≥5.7% [39 mmol/mol], IGT, or IFG) should be tested yearly.</strong></td>
</tr>
<tr>
<td><strong>3. Women who were diagnosed with GDM should have lifelong testing at least every 3 years.</strong></td>
</tr>
<tr>
<td><strong>4. For all other patients, testing should begin at age 45 years.</strong></td>
</tr>
<tr>
<td><strong>5. If results are normal, testing should be repeated at a minimum of 3-year intervals, with consideration of more frequent testing depending on initial results and risk status.</strong></td>
</tr>
</tbody>
</table>

### Who Was Screened?

AMGA used electronic health records (EHR) from 2012 to 2017 to identify our study population of 5.1 million patients, age 18-75 with no prior evidence of diabetes. About 73% of the study population, or 3.8 million adult patients, were found to be eligible for diabetes screening. Yet only about half (55.6%) of these patients received appropriate screening (45.2% in orange + 10.2% in blue, Figure 1). Among the 44.4% who did not receive appropriate screening, more than a third (36.2%) were likely to have prediabetes and 6% to have diabetes. This translates to 600,000 patients who were not properly screened and who potentially missed clinical opportunities for early intervention across these 23 healthcare organizations (Figure 1). Patients who were least likely to have been screened were younger (age <45 years).
Figure 1. Eligibility, Screening and Yield among 5.1 Million Patients

Socioeconomic factors more common among patients who were not properly screened included insurance status (i.e., Medicaid or uninsured) and patients with less education (determined by % of population in ZIP code with a bachelor’s degree). Disparities by race and ethnicity were also found among those eligible for screening. Patients of Black or African American race were less likely to be appropriately screened than patients who were White or Asian (51% vs. 58%). Patients of Hispanic ethnicity were less likely than Non-Hispanic White patients to be screened (53% vs. 57%).

Provider Screening Rates
AMGA looked at screening practices for a total of 13,830 primary care providers. For this analysis, each patient’s provider was determined by who they saw the most over the past 24 months. Providers with fewer than 100 patients with Type 2 diabetes were excluded from the study. AMGA found wide variation in screening performance across healthcare organizations and among individual providers in the same organization. Among patients eligible for screening (according to ADA guidelines), the proportion properly screened was 55.6% overall (45.2% in orange + 10.4% in blue, Figure 1), but the range was 45–65% across healthcare organizations and 1–96% across individual providers (Figure 2). This suggests that organizations may benefit from looking at screening rates by provider within their own organizations.
Figure 2: Screening Rates by Provider

BMI: A Significant Factor in Screening Yields
AMGA looked at screening by weight class. Overall, 6% of patients screened had results in diabetes range (dark red, Figure 3). Figure 3 shows diabetes yield among patients with class 3

- **1.7 million patients** with DM screening in last 12 months (among ADA guideline eligible patients)
- DM yield (dark red) increases with BMI weight class: 2% to 12%
- Pre-DM yield (light red) also increases with BMI weight class: 25% to 43%

Figure 3. Eligible Patients Screened in the Past 12 Months
obesity was 6 times that of their low-to-normal weight counterparts (12% vs 2% in red, Figure 3). Although BMI was determined to be a significant factor in screening yield (i.e., results indicating diabetes or prediabetes), none of the 23 healthcare organizations had targeted screening efforts for patients with class 2 and 3 obesity.

Steps to Improve Screening for High-Risk Patients

- Leverage EHR clinical data to identify patients with no prior evidence of diabetes (diagnosis or prescription for diabetes medications) who may be falling between the cracks (see highlights in red in ADA Screening Guidelines Table 2-3). Other socioeconomic factors to consider when determining who to screen include insurance status (i.e., Medicaid or uninsured) and level of education (< B.S./B.A. degree). (See campaign plank: Embed Point-of-Care Tools)

- Assess screening programs to determine whether certain at-risk groups are participating at levels comparable with the rest of your patient population. (See campaign plank: Conduct Practice-Based Screening)

- Identify providers with the highest percentage of patients screened for diabetes, particularly those who have succeeded at engaging hard-to-reach, underserved patients, and encourage them to:
  - Speak during trainings providing insights on what they are doing to succeed
  - Pair up with and mentor low performers
  - Document strategies used by successful providers and disseminate widely across your organization

(See campaign plank: Build an Accountable Diabetes Team)

- Emphasize positive engagement strategies in your outreach to improve screening rates, (e.g., providers working with one another, healthcare organizations working with underserved communities, and patients working to overcome barriers and achieve optimum screening and health). (See campaign plank: Integrate Emotional and Behavioral Support)
Recognize the impact social determinants have on health outcomes of specific populations. Use a multi-stakeholder approach, engaging community-based organizations and leaders in:

- Developing screening messages and materials that are respectful of culture, lifestyle and traditions
- Hosting local educational forums on the importance of early detection and screening for patients at risk, emphasize the need to prevent progression of diabetes, and avoid adverse outcomes (e.g., vision loss, nerve pain, chronic kidney disease, poor wound healing, and amputation, as well as heart attack, stroke, and cardiovascular disease)
- Identifying specific community barriers such as transportation, child care, and other factors that prevent people in certain communities from receiving proper screenings and engage the community in solving these problems
- Disseminating information through trusted sources and intermediaries

Host screening events in communities with low diabetes screening rates, invite opinion leaders from the community to participate. Promote these activities and help educate the community on the importance of diabetes screening and preventive health care.

References

1. The study used longitudinal electronic health record (EHR) data from 23 U.S. healthcare organizations who pool their EHR data as part of a national learning collaborative. All organizations in the collaborative use Optum’s population health management and risk analytics platform which extracts data for multiple sources, cleans, normalizes and validates it, making it possible to conduct accurate lateral analysis and comparisons. Optum Analytics’ clinical database is comprised of longitudinal ambulatory EHR data from 106 million patients treated by 84 US healthcare organizations. The longitudinal patient records are de-identified and become part of one of the largest integrated data warehouses in the U.S., also managed by Optum.

A New Algorithm

- **Metformin**: [GFR 45+: 2000mg] [GFR 30-45: 1000mg]
- **Exceptions**: GFR <30

- **Liraglutide**: Exceptions: hx of med. thyroid ca/MEN2

- **Empagliflozin**: Exceptions: GFR <45, hx recurrent GU infections

HgA1c ≥10% or symptoms+

3mth Repeat HgA1c Above Goal
# Mercy Diabetes Management Algorithm

<table>
<thead>
<tr>
<th>Diagnosis of Diabetes</th>
<th>A1c ≤ 1.0 over goal</th>
<th>A1c 1.1-2.0 over goal</th>
<th>A1c &gt; 2.0 over goal</th>
<th>Failure to Achieve A1c Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establish Patient-Specific A1c Goal</td>
<td><strong>INITIATE MONOTHERAPY</strong></td>
<td><strong>INITIATE MONO- or DUAL THERAPY</strong></td>
<td><strong>INITIATE DUAL or TRIPLE THERAPY</strong></td>
<td><strong>INTENSIFY INSULIN or REFER TO ENDOCRINOLOGY</strong></td>
</tr>
<tr>
<td>1. Select Goal A1c</td>
<td></td>
<td></td>
<td></td>
<td>If combination therapy including basal insulin fails to achieve goal, intensify with pre-meal insulin, and/or refer to Endocrinology.</td>
</tr>
<tr>
<td>2. If lifestyle modification fails, then select therapeutic column corresponding to desired A1c reduction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Initiate indicated therapy.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Follow remaining process steps below.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Lifestyle Modification
- **Metformin** (or other 1st line agent)
- **Maintain Metformin** (or other 1st line agent)
- **Maintain Metformin** (or other 1st line agent)

### Process Steps
- **Modification**: Adjust diet and exercise to achieve positive outcomes, potentially delaying or avoiding drug therapy. If patient has maximized lifestyle modification or is unable or unwilling to make necessary modifications, proceed to next step.
- **Initiation**: Start drug therapy based on patient’s current A1c relative to individual goal.
- **Titration**: Increase dose within each “tier” to the maximally tolerated dose or until goal is achieved.
- **Escalation**: If A1c goal is still not achieved after dosage titration, escalate to the next tier and add another agent as needed.
- **Intensification**: Once all tiers have been maximized, intensify insulin therapy with both basal and pre-meal insulins. Consider referral to Endocrinology.

## Reasonable HgbA1c Goals for T2DM

<table>
<thead>
<tr>
<th>&lt; 7.0</th>
<th>&lt; 7.5</th>
<th>&lt; 8.0</th>
<th>&lt; 8.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated Adults</td>
<td>Frail Older w/Co-morbidity, &lt; 10 yrs life expectancy</td>
<td>Very Old</td>
<td></td>
</tr>
</tbody>
</table>

## Diabetes Drug Therapy Options

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Route</th>
<th>Hypoglyc. Risk</th>
<th>Weight Gain</th>
<th>CHF</th>
<th>CV Benefit</th>
<th>Typical A1c Change</th>
<th>Avg Cost/30 days</th>
<th>Cost per 1.0 A1c decr/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>Oral</td>
<td>Low</td>
<td>Slight Loss</td>
<td>Neutral</td>
<td>Neutral</td>
<td>1.0-2.0</td>
<td>$7</td>
<td>$84</td>
</tr>
<tr>
<td>GLP-1 RAs</td>
<td>Inj</td>
<td>Low</td>
<td>Loss</td>
<td>1st Pref*</td>
<td>1st Pref*</td>
<td>0.5-1.0</td>
<td>$570</td>
<td>$9,120</td>
</tr>
<tr>
<td>SGLT2i</td>
<td>Oral</td>
<td>Low</td>
<td>Loss</td>
<td>1st Pref</td>
<td>1st Pref*</td>
<td>0.8-1.2</td>
<td>$360</td>
<td>$4,320</td>
</tr>
<tr>
<td>DPP4i</td>
<td>Oral</td>
<td>Low</td>
<td>Neutral</td>
<td>Avoid</td>
<td>Neutral</td>
<td>0.5-0.8</td>
<td>$350</td>
<td>$6,461</td>
</tr>
<tr>
<td>TZD</td>
<td>Oral</td>
<td>Low</td>
<td>Gain</td>
<td>Avoid</td>
<td>Avoid</td>
<td>0.5-1.4</td>
<td>$65</td>
<td>$821</td>
</tr>
<tr>
<td>SU</td>
<td>Oral</td>
<td>High</td>
<td>Gain</td>
<td>Neutral</td>
<td>Neutral</td>
<td>1.0-2.0</td>
<td>$8</td>
<td>$96</td>
</tr>
<tr>
<td>Insulin</td>
<td>Inj</td>
<td>High</td>
<td>Gain</td>
<td>2nd Pref</td>
<td>2nd Pref*</td>
<td>1.5-3.5</td>
<td>$525</td>
<td>$2,520</td>
</tr>
</tbody>
</table>

GLP-1 RA = glucagon-like peptide 1 receptor agonists (e.g. Victoza, Byetta, Bydureon, Trulicity, Tanzeum, Ozempic)
SGLT2i = sodium glucose co-transporter 2 inhibitors (e.g. Invokana, Jardiance, Farxiga, Steglatro)
DPP4i = dipeptidyl peptidase-4 inhibitors (e.g. Januvia, Tradjenta, Onglyza, Nesina)
TZD = thiazolidinedione (e.g. Actos [pioglitazone], Avandia); SU = sulfonylurea (e.g. glipizide, glyburide, gliperide)

*NOTE: Victoza is preferred GLP-1 RA for CHF and ASCVD; Jardiance is preferred SGLT2i for ASCVD per clinical trials and FDA labeling.*
INSIGHT: CONTROLLING GLUCOSE LEVELS IN PATIENTS WITH TYPE 2 DIABETES

AMGA ANALYTICS

Glycemic control or managing blood sugar levels (hemoglobin A1c, HbA1c, or simply A1c), is a crucial factor in preventing serious health complications associated with diabetes. Yet most healthcare organizations, despite concerted efforts, struggle to increase the proportion of patients whose blood sugar levels are in control.

The Leaky Bucket Phenomenon
At AMGA, we examined population level changes in A1c control across 29 AMGA healthcare organizations (HCOs) in the Optum® Analytics database.¹ We looked at 245,000 patients aged 18–75 with Type 2 diabetes who had two A1c measures 12 to 15 months apart. Using the Together to Goal® threshold of A1c < 8%, we found 77% of patients at these HCOs were in glycemic control at the start of our analysis. That meant at baseline, 23% were out of control (or had an A1c ≥ 8). Twelve to 15 months later (at follow-up), 22% of patients were out of control. This lack of improvement among the population (~ 1%) was observed consistently across all 29 organizations—despite how hard these groups were working to improve glycemic control for their patients with Type 2 diabetes.

Figure 1. The Leaky Bucket: Changes in A1c Control over 12-15

Did this mean that 22% of patients faced insurmountable challenges in gaining control of their A1c? To answer this question, we tracked each patient’s control status over time (Figure 1). We found that about one-tenth of patients moved into control during the 12- to 15-month period (9.6% shown in yellow, Figure 1). This was good news. First, it meant only 13.6% of patients stayed out of control over the 12 to 15 months (not 22%). Second, these organizations were having significant success bringing patients into glycemic control!

Unfortunately, we found over this same 12 to 15 months, almost the same proportion of patients moved out of glycemic control (8.5% shown in orange, Figure 1). The result: patients moving out of control were cancelling out the population-level improvements of those gaining control of their A1c. It was like trying to fill a leaky bucket. Patients losing A1c control “leak” out of the measure numerator—offsetting patients who gain control. This explains why HCOs, even though they successfully helped 9.6% of patients gain control of their A1c, still could not see population-level improvements and fix the “leaky bucket.”
Patients Considered “Safe” May Still Be at Risk

In Figure 1, we see that nearly one-fifth of patients with Type 2 diabetes had a change in control status over the 12 to 15 months of our analysis (orange + yellow). To make gains in glycemic control for patients with Type 2 diabetes, we needed to understand more about what we observed. Specifically, were these changes in A1c clinically meaningful or were they just very small changes in A1c happening for patients close to the threshold (A1c < 8.0)? We found patients moving out of control experienced on average an absolute change of 1.7% in their A1c levels in 12 to 15 months (for example moving from an A1c of 6.6% to 8.3%). In fact, one-third of the patients who moved out of control had an A1c < 7.0 at the start of the study. These are patients who are considered “safe” by most providers’ standards.

Which “Safe” Patients Are at Risk of Slipping Out of Control?

To plug the holes in this leaky bucket and improve A1c population-level control rates, HCOs would have to identify their “safe” patients who are at risk of transitioning out of control. AMGA created a predictive model to identify which safe patients were at highest risk of slipping out of glycemic control (A1c ≥ 8). For a detailed presentation that walks you through the leaky bucket concept and AMGA’s predictive model, visit the Together 2 Goal® website for the webinar series Population Management Strategies for Diabetes featuring AMGA Analytics (May 18, 2017).\(^2\)

Validation of AMGA’s predictive model showed 10% of well-controlled (A1c 5.5 - 6.9%) patients who were predicted to be at highest risk of transitioning out of control accounted for 31.4% of those who slipped out of glycemic control at their 12- to 15-month follow-up. By focusing on well-controlled, Type 2 diabetes patients in this 10% risk bracket, providers could potentially prevent 31% of transitions out of control (concentrating their efforts by a factor of 3.1).

How Does This Help?

AMGA simplified our complex predictive model by creating a “rule of thumb” that practitioners can use to focus resources on approximately 13% of “safe” patients who meet all of the criteria for slipping out of control. Using the rule of thumb, providers have opportunities to intervene before patients move out of glycemic control and prevent 26% of adverse glycemic control transitions 12 to 15 months later. The rule of thumb uses a few readily available predictors. If patients meet all of these factors, they are at risk for transitioning out of control: A1c between 5.5 and 6.9; male; BMI ≥ 30; and on a second-line anti-diabetes agent and/or insulin (Figure 2).
**INSIGHT: CONTROLLING GLUCOSE LEVELS IN PATIENTS WITH TYPE 2 DIABETES**
(CONTINUED)

AMEGA ANALYTICS

**Figure 2. Patient Stratification Rule of Thumb**
(Well Controlled Patients* at High Risk of Slipping Out of Control)

<table>
<thead>
<tr>
<th>All Patients (Deciles: Ranked by Predicted Risk)</th>
<th>Patients with Follow-up A1c ≥ 8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=114,065</td>
<td>N=5,656</td>
</tr>
<tr>
<td>10%</td>
<td>31.4%</td>
</tr>
<tr>
<td>10%</td>
<td>20.1%</td>
</tr>
<tr>
<td>10%</td>
<td>14.0%</td>
</tr>
<tr>
<td>10%</td>
<td>10.1%</td>
</tr>
<tr>
<td>10%</td>
<td>7.8%</td>
</tr>
<tr>
<td>10%</td>
<td>6.5%</td>
</tr>
<tr>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>

3.1X concentration

<table>
<thead>
<tr>
<th>All Patients</th>
<th>Patients with Follow-up A1c ≥ 8%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=114,065</td>
<td>N=5,656</td>
</tr>
<tr>
<td>13.4%</td>
<td>26.3%</td>
</tr>
<tr>
<td>86.6%</td>
<td>73.7%</td>
</tr>
</tbody>
</table>

Indicates:
- Male and
- BMI ≥ 30 and
- On 2nd line agents or insulin at baseline

*Well-controlled patient is defined in our analysis as having a baseline A1c between 5.5% and 6.9%.

**Steps to Manage Safe (A1c < 8%) Patients at Risk of Losing Glycemic Control**

- Find the Together 2 Goal® webinar describing AMGA’s leaky bucket predictive model and learn more about this phenomenon at *Population Management Strategies for Diabetes featuring AMGA Analytics* (May 18, 2017).³

- Explain the leaky bucket phenomenon to practitioners. Urge them to keep this in mind as they care for all A1c-controlled patients by being alert to circumstances that can prompt changes in A1c levels (e.g., a significant life change; depression or anxiety; financial hardship; a recent physical trauma; severe illness or infection; among others). During these times, practitioners may offer patients more support and monitor their A1c more frequently.
- Use rule of thumb insights to identify patients in your EHR at risk of slipping out of glycemic control (A1c ≥ 8%). Orient care teams on use of the rule of thumb. Explain how they can incorporate this information into daily workflows to document and capture data needed to reevaluate patients. (See campaign planks: Use a Patient Registry and Embed Point-of-Care Tools).

- Conduct patient outreach and reengage patients identified as safe using the rule of thumb. Measure A1c levels among this group more frequently (1 to 3 months). Reevaluate these patients often to ensure glycemic control. (See campaign planks: Conduct Practice-Based Screening and Measure HbA1c Every 3–6 months).

- Embed point-of-care tools, such as patient registries, banner alerts, glucose trackers, point of care A1c testing, daily visit planners, etc., in the EHR to ensure patients arrive ready for visits and care teams have complete information to proactively manage their blood sugar levels and other care needs. (See campaign plank: Embed Point-of-Care Tools.)

- Digital health tools such as Emmi®, Televox™, Epharmix®, and others can augment patient outreach efforts by sending automated messages through email, smartphone messaging (SMS), and phones to remind patients about self-care, patient-reported A1c compliance, and upcoming appointments, etc. (See campaign planks: Contact Patients Not at Goal and with Therapy Change within 30 Days.)

- Develop a proactive treatment algorithm for rule of thumb patients (A1c < 8%) to make sure therapies are effectively stabilizing their conditions, include complementary methods—education, lifestyle, and medication management—as well as consults and referrals to behavioral health, pharmacy, dieticians, diabetes educators, and care coordinators for optimal glycemic control. (See campaign plank: Adopt a Treatment Algorithm.)

- Host leader-driven education sessions, preferably outside of clinic hours and settings, to increase provider awareness (physicians, physician assistants, nurses, nurse practitioners, dietitians, pharmacists, certified diabetes educators, and other front-line professionals) about the leaky bucket and the rule of thumb. Explain the importance of proactive monitoring and management of A1c in this group of patients. (See campaign plank: Build an Accountable Diabetes Care Team.)
Offer at-risk patients access to diabetes education, emphasizing the need to self-monitor glucose levels and regularly communicate changes to practitioners to enable timely, proactive changes in treatment. Add resources describing the leaky bucket on web portals and in clinic-based education tools. (See campaign plank: Refer to Diabetes Self-Management Education and Support Programs.)

Collaborate with and refer patients to community-based diabetes education and resources at local YMCAs, Medicare Diabetes Prevention Programs (MDPP), gyms, grocery stores, and other community-based centers. Offer educational resources written in simple, easy-to-understand formats. (See campaign planks: Refer to Diabetes Self-Management Education and Support Programs and Insight: Weight Loss and Management of Type 2 Diabetes.)

For more opportunities to control A1c in these patients, refer to Insight: Weight Loss and Management of Type 2 Diabetes.

References
1. The study used longitudinal electronic health record (EHR) data from 29 U.S. healthcare organizations who pool their EHR data as part of a national learning collaborative. All organizations in the collaborative use Optum's population health management and risk analytics platform which extracts data for multiple sources, cleans, normalizes and validates it, making it possible to conduct accurate lateral analysis and comparisons. Optum Analytics' clinical database is comprised of longitudinal ambulatory EHR data from 106 million patients treated by 84 U.S. healthcare organizations. The longitudinal patient records are de-identified and become part of one of the largest integrated data warehouses in the U.S., also managed by Optum.
2. Slides and audio can be found on the Together to Goal® website (www.together2goal.org/improve/webinars_improve.html). Slides only (www.together2goal.org/assets/PDF/20170518.pdf) or slides and audio (https://amgaevents.webex.com/amgaevents/lr.php?RCID=ab9490d6950e6bda49883af8fd5cfb57).
3. Ibid.
POC HbA1c DCA Analyzers are now available in your office!

Why use HbA1c POC testing? The results give you a good idea of how well your patient's diabetes treatment plan is working, and it may actually save providers time by not having to message the MA to call the patient, look up all the patient's meds, and make adjustments after the patient's office visit. By using POC A1c testing at the time of the visit you can get immediate results to save you time and support face-to-face counseling and adjustments to therapy at the time of the visit. Studies suggest that by engaging patients in shared decision making about their diabetes, they are more likely to be complaint in their treatment plan and abide by regular testing for A1c and Glucose levels; therefore, better, more consistent control of A1c.

How to Meet the Quality Measure

- Use Diabetic diagnosis codes when ordering POC HbA1c testing.
- Test does not need to be done fasting
- Order HbA1c POC using POC1007 order code
- For POC A1c testing, use CPT Code 83036
- A1c results may be inaccurate with patients with ESRD, who have recently given or received blood, or who have anemia.
- Call 877-229-3711 Toll free in the USA for 24/7 Service & support or www.usa.siemens.com/diagnostics.

Tips

- Medicare reimburses for HbA1c testing every 3 months whether it is done for persons with diabetes in the office or lab. Please consider this when ordering HbA1c whether POC or through Mercy or an outside lab.
- While the HA1c POC testing is helpful for monitoring and making in the moment changes to diabetes care plans for persons diagnosed with diabetes, it can also be helpful in screening for prediabetes.
- HCC coding standards encourage identification of prediabetes. Please refer to Mercy's Screening, Diagnosis, and Treatment protocols that can be accessed on your provider dashboard in Epic.
- DO NOT use the Pre-Diabetes diagnosis code (R73.63) for patients you are screening for prediabetes or it will result in non-payment. USE Impaired Fasting Glucose diagnosis code (R73.01) OR Insulin Resistance diagnosis code (E88.81) that is covered.
Your blood pressure today is: __________

It is important that the top number of your blood pressure is below 140; 120 is perfect.

The closer your blood pressure is to 120/70 the less chance you’ll have of having a heart attack, stroke, or kidney disease.

You can help by lowering your daily use of salt (called sodium on food labels). Walking 30 minutes a day will help as well.

Action for your blood pressure:

- Decrease salt intake and exercise. Return in one month.
- Resume medications and recheck blood pressure in one week.
- Medication change and recheck blood pressure in two weeks.
Therapeutic inertia (also referred to as “clinical inertia”) is a lack of treatment intensification for a patient who has not reached evidence-based goals, in this case, patients with Type 2 diabetes with uncontrolled blood sugar levels (hemoglobin A1c or simply A1c).

**Therapeutic Inertia**

There is no single, identifiable cause for therapeutic inertia. Research, guidelines, systems, physicians, and patients are all potential factors. Patients express concern about medication side effects, a lack of confidence in their provider and/or the healthcare system, as well as in costs associated with newer diabetes medications. Newer drugs often are not added to prescription drug lists (“formularies”) that determine which drugs will be covered by insurers or health plans. A non-covered medication significantly increases patients’ out-of-pocket costs, making patients and providers reluctant to initiate new medications.

**Figure 1. Potential Causes: Therapeutic inertia**

Providers are also challenged by the short duration of patient visits and availability of a smoothly functioning diabetes care team for support (Figure 1).
What Are the Consequences of Long-Term Therapeutic Inertia?

Consequences from not intensifying therapy for patients with Type 2 diabetes include microvascular complications such as vision loss, nerve pain, chronic kidney disease, poor wound healing, and amputation. Recent evidence also suggests macrovascular complications can lead to heart attack, stroke, and cardiovascular disease when a patient does not receive needed adjustments to therapy over time.

All Patients Are Not Receiving Treatment Aligned with Guidelines

Using data from the Optum® Analytics database, AMGA looked at electronic health records across 22 high-performing healthcare organizations, identifying nearly 28,000 adult patients with Type 2 diabetes who had uncontrolled glycemia (A1c > 8%). AMGA followed these patients from January 2012 to June 2017 to see if they had moved into glycemic control (A1c < 8) or received a prescription for a new class of diabetes medication. Although ADA guidelines recommend increasing therapy every 3 months when a patient has not reached target A1c, after six months, 55%, or about half, of patients with uncontrolled glycemia (A1c ≥ 8%) showed no signs of therapy adjustment or of moving into glycemic control. Even by the end of two years, a tenth of patients with uncontrolled glycemia (A1c ≥ 8%) still had not received additional therapy (Figure 2).

Figure 2. Potential therapeutic inertia and observable actions over 6-24 months among bolus naïve patients with an A1c > 8%
What Do Patients Least Likely to Receive Appropriate Treatment Have in Common?

Patients with more prescriptions in general, and those on more second-line diabetes medications specifically, were least likely to receive a new prescription or move into glycemic control. Differences by race were also observed. At the end of two years, 15% of African American patients had received no observed action, compared to 11% of White patients. Other characteristics of patients not receiving appropriate therapeutic action include having a "normal" body mass index and having Medicaid public insurance or no insurance at all.

Steps to Reduce Therapeutic Inertia

- Use EHR data to:
  - Identify patients who may need additional diabetes care and schedule an office visit with monthly follow-up until their blood glucose is at goal
  - Analyze providers’ diabetes management decisions to identify patterns alerting you to therapeutic inertia. Enlist champions who can mentor, coach and work with other providers to set goals, initiate, and adjust treatment over time until goals are achieved (See campaign planks: Measure HbA1c Every 3-6 Months and Contact Patients Not at Goal and with Therapy Change within 30 days.)

- Provide specific clinical decision-making support tools for providers at the point of care with guidance on evidence-based treatment algorithms, include strategies for managing conditions associated with intensifying treatment. (See campaign planks: Embed Point-of-Care Tools and Adopt a Treatment Algorithm.)

- Provide simulated clinical cases to illustrate effective therapy options for complex or fragile patients who are vulnerable to adverse pharmacotherapy outcomes as well as the cultural sensitivities inherent to minority and underserved populations. (See campaign planks: Build an Accountable Diabetes Team and Integrate Emotional and Behavioral Support.)

- Use patient-facing, Diabetes Medication Choice decision aid cards² developed by Mayo Clinic to help patients choose the medication that is best for them. Developed from information gathered in research studies, the cards address seven areas: lowering A1c; daily routine; low blood sugar; cost; daily sugar test; weight; and other considerations. (See campaign plank: Integrate Emotional and Behavioral Support.)
• Require routine documentation in the EHR after each office visit, virtual visit, or telephone contact stating whether clinically indicated changes in therapy were made and if not, the justification for this decision. (*See campaign plank: Build an Accountable Diabetes Team.*)

• Include behavioral therapists, coaches, counselors, and pharmacists on your diabetes care team to support shared decision-making. Arrange consultations with a pharmacist so patients can weigh the risks and benefits associated with therapy options and the consequences of choosing not to advance treatment. (*See campaign plank: Build an Accountable Diabetes Team.*)

• Prioritize patient intervention based on the patient’s risk for complications, readiness to change, and resource availability. (*See campaign plank: Adopt a Treatment Algorithm.*)

References
1. The study used longitudinal electronic health record (EHR) data from 22 U.S. healthcare organizations who pool their EHR data as part of a national learning collaborative. All organizations in the collaborative use Optum’s population health management and risk analytics platform which extracts data for multiple sources, cleans, normalizes and validates it, making it possible to conduct accurate lateral analysis and comparisons. Optum Analytics’ clinical database is comprised of longitudinal ambulatory EHR data from 106 million patients treated by 84 U.S. healthcare organizations. The longitudinal patient records are de-identified and become part of one of the largest integrated data warehouses in the U.S., also managed by Optum.
2. [www.ihi.org/resources/Pages/Tools/SharedDecisionMakingDiabetesMedicationDecisionAid.aspx](http://www.ihi.org/resources/Pages/Tools/SharedDecisionMakingDiabetesMedicationDecisionAid.aspx)
The Baton Rouge Clinic has a “Best Practice Advisory” that fires if a patient has an overdue health maintenance need for an eye exam. From the “Best Practice Advisory”, providers can order the referral to optometry. If the patient had the referral completed at an outside facility, providers can choose the button for “performed externally”, enter the place of service in the comment box, and click send. This sends an “INBasket” message to a work queue, which is monitored. A designated individual obtains the eye exam to scan it into the order in the chart, which fulfills the health maintenance need.
TOOL: INTERNAL PROVIDER PERFORMANCE REPORT

BALLAD HEALTH

Quarterly Report Displaying Performance by Provider

Note: This report is typically 3 to 4 pages in length to include between 60 and 70 providers based on our current PCP roster.
### Quarterly Report Listing the Patient-Level Data Behind the Provider’s Scores:

Together 2 Goal® Campaign Measurement Patient Level Report

**REPORT BETWEEN: 10/01/2017 AND 09/30/2018**

<table>
<thead>
<tr>
<th>Patient MRN</th>
<th>Patient Name</th>
<th>Date Of Birth</th>
<th>Sex</th>
<th>HbA1C Control</th>
<th>BP Control</th>
<th>Nephropathy</th>
<th>Lipid Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

(The table continues with more patient information.)
Provider Actions leading to Nephropathy Measure Improvement

SwedishAmerican Health System developed this care pathway in partnership with Optum, AMGA’s Distinguished Data and Analytics Corporate Collaborator.
DISCLAIMER
The Together 2 Goal® Campaign Toolkit Supplement is intended to aid healthcare professionals in managing the care of people with Type 2 diabetes. While the toolkit describes recommended courses of intervention, it is not intended as a substitute for the advice of a physician or other knowledgeable healthcare professional.

COPYRIGHT INFORMATION
Copyright © 2019 by AMGA Foundation.
All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the publisher, except in the case of brief quotations embodied in critical reviews and certain other noncommercial uses permitted by copyright law. For permission requests, write to the address below or email together2goal@amga.org.

AMGA Foundation
c/o Together 2 Goal® Copyright Approvals
One Prince Street
Alexandria, VA 22314
Let’s improve diabetes care together.
Visit www.together2goal.org to learn more.

AMGA Foundation is AMGA’s nonprofit arm that enables medical groups and other organized systems of care to consistently improve health and health care. AMGA Foundation serves as a catalyst, connector, and collaborator for translating the evidence of what works best in improving health and health care in everyday practice. Learn more at www.amga.org/foundation.