Session packet: diabetes

This packet contains:

* A guide for the session leader with tips for organizing the session
* A diabetes handout for the session attendees that can also be used by the presenter during the session to guide the discussion
* Flashcards on diabetes to use as a pre-session learning tool
* A sign-in sheet for the session

*All materials in this packet can be adapted to fit your professional development program goals, your practice’s procedures and any performance metrics or performance measurement intervals you have in place as part of a value-based payment model.\**

*\*Please note that practice guidelines frequently change. This packet is only an example and may not include the latest recommendations. Update these materials to include the latest treatment guidance and statistics before training your staff.*

**Session leader guide**

*Share the pre-session learning flashcards with medical assistant (MA) attendees at least several days before the session so they can come prepared.*

Tips for making this a successful session:

* Begin as close to the start time as possible, even if others are still joining the group.
* Consider updating the handout to include the latest diabetes incidence and prevalence information for your state. You can find that information here: <http://gis.cdc.gov/grasp/diabetes/DiabetesAtlas.html>.
* If your practice uses a registry, consider discussing how the registry tracks patients with diabetes to give the MAs a sense of the population they will actually see in the clinic. Share the number of patients with diabetes in your practice and pertinent details, such as the number of patients with type 1 or type 2 diabetes, patient age ranges, etc. You may want include a de-identified patient profile from the registry to highlight the exams that are performed for patients with diabetes, recent lab results and what they mean for the patient’s overall health (e.g., HbA1c that is out of range) and explain the scheduled follow-up care.
* Have printouts of the diabetes handout available for attendees to follow along with the presentation and to take with them after the session to refresh their knowledge.
* If you have handouts or brochures that you give to patients to educate them about their diabetes management and self-care, it may be useful to bring them to the session to discuss with the group. This will also make the attendees aware of all the materials at their disposal to improve patient care.
* Consider taking advantage of the STEPS Forward™ module “Preventing type 2 diabetes in at-risk patients” and the corresponding training materials to help your team learn how to identify patients at risk of developing diabetes and better manage their care.

*Use the following handout as a discussion guide during the session.*

**Diabetes handout**

**Diabetes by the numbers**

* Twenty-two million people in the United States have diabetes and 1.4 million were newly diagnosed in 2014.1
* More than 60 percent of people with diabetes were diagnosed between the ages of 40 and 64.1
* [insert state-level statistics if applicable]
* Diabetes is especially common in racial and ethnic minority populations
* [insert information from your practice’s registry if applicable]

**How does diabetes develop?**

* Glucose produced from the breakdown of starches and sugars in food is the main source of fuel for cells in the body. The liver also produces and releases glucose.
* Diabetes mellitus (DM) develops when the body can’t properly store glucose in cells, leaving excess glucose in the bloodstream.
* The hormone insulin, which is made by the pancreas, takes glucose out of the bloodstream and moves it into cells. When this process doesn’t work, glucose stays in the blood. This causes elevated blood glucose or high blood sugar.

**Diabetes type 1 vs. type 2**

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|  | Type 1 diabetes | Type 2 diabetes |
| Cause | The body does not produce any of the hormone insulin | Either the body does not produce enough insulin or the cells do not recognize the insulin that is being made, so the insulin can’t work properly |
| Number of patients | Only 5 percent of patients with diabetes have type 1 | 95 percent of people with diabetes have type 2 |
| Treatment | These patients must take insulin every day | Diet and lifestyle modifications and antidiabetes medications; some patients will eventually need to take insulin |

**Risk factors for type 2 diabetes**

* Age greater than 45 years
* Diabetes during a previous pregnancy (gestational diabetes)
* Excess body weight (especially around the waist)
* Family history of diabetes
* Low HDL cholesterol (under 35 mg/dL)
* High triglycerides (250 mg/dL or more)
* High blood pressure (greater than or equal to 140/90 mmHg)
* Secondary diabetes – resulting from medication use (e.g., prednisone)
* Impaired glucose tolerance on an oral glucose tolerance test
* Low activity level (exercising fewer than 3 times a week)
* Polycystic ovarian syndrome

**Symptoms of diabetes**

* Unusual thirst and frequent urination
* Blurred vision
* Fatigue
* Frequent infections, including bladder infections
* Tingling/numbness in the extremities
* Unexplained weight loss
* High blood sugar over a long period of time causes serious damage to blood vessels (loss of elasticity) and nerves (neuropathy).
* Complications from high blood sugar include heart disease, stroke, blindness, kidney failure and neuropathies.

**Diagnosing diabetes**

* Several tests that measure blood sugar levels are used to diagnose DM.
* The most common are fasting blood sugar (FBS) and HbA1c (A1c).
* What is the difference between FBS and A1c? FBS is a snapshot of real-time blood glucose levels whereas A1c measures glucose/insulin behavior over a three-month period (approximately).

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|  | Fasting blood sugar (FBS) | Hemoglobin A1c (HbA1c or A1c) |
| How is it measured? | From blood drawn after the patient fasts overnight or has not eaten for approximately 8 hours | Blood draw |
| What does it measure? | Blood glucose | Average percent of circulating blood glucose over the past 3 to 4 months |
| What is a normal result? | <100 mg/dL | ≤5.6% |
| What is the result for a patient with diabetes? | 126 mg/dL or higher | ≥6.5% |

**Medical management of type 2 diabetes**

* Metformin (brand names include Glucophage®) is the most commonly used first medication. It works by decreasing the amount of glucose produced by the liver.
  + The main side effect is diarrhea, which occurs when a patient first starts using the drug or when the dose is increased. It usually resolves within 2 weeks.
* Additional medications may be added to metformin and include Glucotrol®, Amaryl®, Avandia®, ACTOS®, Invokana®, Farxiga™, Victoza®, Januvia®, Onglyza® and others.
  + These antidiabetes medications work by increasing insulin production, increasing the ability of the body’s cells to recognize and respond to insulin, reducing glucose production by the liver and/or reducing glucose levels in the blood.
* Insulin is used if the patient’s diabetes is not controlled by antidiabetes medications alone.
  + There are several methods of insulin absorption, such as injectables, inhalants, pumps, and other devices
  + Injectables are the most common route of insulin absorption; some common methods include
    - Rapid acting: Humalog, Novolog
    - Short acting: Humulin R, Novolin R
    - Intermediate acting: NPH (Humulin N, Novolin N)
    - Long acting: Levemir, Lantus, Toujeo
  + Examples of inhalants include:
    - Afrezza®
  + Examples of pumps and devices include:
    - Insulin pumps: small, computerized devices that help manage blood sugar; these devices release rapid-acting insulin into the body through a small catheter
    - Blood glucose meter: a small, handheld device for measuring blood sugar levels; a drop of blood is placed on a small strip inserted into the meter and it calculates and displays the blood sugar level
* It is important for patients to engage in a self-management plan to control their blood sugar.
* Dietary changes and adding exercise can help antidiabetes medications to be more effective.
* It is also important for patients to make sure that they avoid low blood sugar (hypoglycemia).

**Lifestyle changes and self-management goals for patients**

* Maintaining healthy blood sugar levels and confirming levels with daily/weekly testing
* Maintaining a healthy weight
* Maintaining blood pressure below 140/90 mmHg
* Getting a regular foot exam and monofilament exam to check for neuropathy. This is why we ask patients to take their shoes and socks off at every visit with their physician!
* Undergoing a dilated eye exam to monitor for glaucoma
* Knowing symptoms of hyperglycemia and hypoglycemia and what to do about them

**Hyperglycemia (high blood sugar) vs. hypoglycemia (low blood sugar)**

* Hyperglycemia can occur if a patient’s medications are not working or are not dosed appropriately.
  + The symptoms of hyperglycemia include blurry vision and increased thirst, urination and hunger.
* Occasionally, a patient may develop hypoglycemia, or low blood sugar.
  + Symptoms include cool and clammy skin, rapid heartbeat, change in mood, headache, shakiness, dizziness, sweating, hunger, difficulty paying attention, confusion and/or seizures.
  + Severe hypoglycemia can result in a coma, injuries and even death.
  + Treatment: check blood sugar and treat quickly with 3-4 glucose tablets, 4 oz of fruit juice, 6 oz of regular soda, gummy candy or 1 Tbsp. of sugar or jelly.

**Prediabetes4**

* Prediabetes is a condition in which FBS or HbA1c levels are higher than normal but not high enough to be classified as diabetes.
  + FBS between 100 mg/dL and 125 mg/dL and HbA1c between 5.7 percent and 6.4 percent
* Eighty-six million American adults have prediabetes; 9 out of 10 are unaware that they have it.
* In the average primary care practice, up to one‑third of patients age 18 or older and up to half of patients age 65 or older could have prediabetes.
* People with prediabetes have an increased risk of heart disease and stroke.
* Early and intensive lifestyle interventions are important for preventing or delaying diabetes.

**References**

1. American Diabetes Association. <http://www.diabetes.org>. Accessed February 9, 2016.
2. Centers for Disease Control and Prevention. Diabetes Public Health Resources. <http://www.cdc.gov/diabetes/home/index.html>. Updated November 4, 2015. Accessed February 8, 2015.
3. National Institute of Diabetes and Digestive and Kidney Diseases. National Diabetes Education Program. <http://www.niddk.nih.gov/health-information/health-communication-programs/ndep/Pages/index.aspx>. Accessed February 9, 2016.
4. Centers for Disease Control and Prevention. National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014. Atlanta, GA; 2014. <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>. Accessed February 9, 2016.

Adapted with permission from Vanguard Medical Group medical assistant professional development training materials.

*Source: AMA. Practice transformation series: medical assistant professional development. 2016.*

Pre-session learning flashcards

*Share these flashcards with session attendees several days before the session so they can come prepared. Some of the flashcards contain highlighted areas where you can insert details specific to your practice. Two blank pages are provided if you’d like to create your own flashcards that are specific to your team or curriculum.*

*Instruct the session attendees to print the page of cards, cut along the dotted horizontal lines, and then fold vertically on the solid lines to create flashcards that they can use to quiz themselves prior to the professional development session.*

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| *WHAT IS DIABETES?*  *HOW IS DIABETES DIAGNOSED?* | A chronic, multi-system disease caused by an absence  or decrease in insulin production, impaired insulin activity, or both.  With blood tests that measure the levels of blood glucose. The most common tests are fasting blood glucose (FBS) and hemoglobin A1c (HbA1c). |
| ***WHAT ARE THE CLASSIFICATIONS OF DIABETES (DM)?*** | 1. Type 1 2. Type 2 3. Prediabetes 4. Gestational (pregnancy) 5. Secondary (medically induced - use of prednisone, for example) |
| ***WHAT ARE THE RISK FACTORS FOR DEVELOPING TYPE 2 DIABETES?*** | Risk factors include:   * age * excess weight * family history * abnormal lipid levels * high blood pressure * unhealthy lifestyle choices * decreased tissue response to insulin * abnormal glucose regulation by the liver |
| ***HOW DO ORAL ANTIDIABETES MEDICATIONS WORK?*** | * Increase insulin production * Improve insulin sensitivity * Reduce glucose production in the liver * Reduce glucose levels in the blood |
| ***MOST COMMONLY USED CLASSES OF ORAL MEDICATIONS FOR DM TYPE 2*** | * Stimulate pancreas to release more insulin   + Sulfonylureas: Glucotrol® [glipizide], Amaryl® [glimepiride]) * Help insulin move glucose into body’s cells   + Thiazolidinediones: Avandia® [rosiglitazone], ACTOS® [pioglitazone]) * Stop liver from producing glucose   + Glucophage® [metformin]) * Lower glucose in bloodstream   + - * DPP-4 inhibitors: Januvia® [sitagliptin], Onglyza® [saxagliptin]       * GLP-1 analogs: Victoza® [liraglutide]) * Allow glucose to be excreted in urine   + SGLT2 inhibitors: Invokana® [canaglifozin], Farxiga™ [dapaglifozin]) |
| ***WHAT ARE THE DIFFERENT TYPES OF INJECTIBLE INSULIN*** | * Rapid-acting: Humalog, Novolog * Short-acting: Humulin R, Novolin R * Intermediate-acting: NPH (Humulin N, Novolin N) * Long-acting: Levemir, Lantus, Toujeo |
| ***HOW LONG DOES IT TAKE FOR INJECTED INSULIN TO START WORKING?*** | Time to onset:  Rapid: 15 minutes  Short: 30-60 minutes  Intermediate: 1-3 hours  Long: 1 hour |
| ***WHAT DO WE WANT TO TEACH OUR PATIENTS ABOUT FOOT CARE?*** | * Foot care is important to check for nerve damage * Take shoes and socks off at every visit so the doctor can examine their feet * Encourage daily foot checks to inspect for cuts, bruises or ingrown toenails that they may not feel * Schedule podiatry visits every 6 to 12 weeks for monofilament testing and toenail grooming * Wear orthopedic shoes and/or diabetic socks to help relieve symptoms |
| ***WHAT IS OUR PRACTICE’S DIABETES MANAGEMENT PROTOCOL (ROUTINE TESTING & EXAMS)?*** | * Annual well exam * HbA1c testing every 3 to 6 months * Urinalysis (UA) to check for micro/macroalbumin (protein in urine) as a measure of kidney function * Glomerular filtration rate (GFR)/creatinine to check kidney function * Lipid panel * Tobacco screening/smoking cessation * Monofilament testing (foot exam) * Dilated eye exam |
| ***WHAT IS AN HbA1c TEST AND WHAT DOES IT MEASURE?*** | * Blood test that measures a person’s average level of blood glucose over the past 3 months. * The higher the percentage, the higher a person’s average blood glucose levels have been. A normal HbA1c level is less than 5.7%. |
| ***WHAT ARE THE TREATMENTS FOR DIABETES?*** | Medications, lifestyle alterations and insulin |

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| *WHAT IS PREDIABETES?* | A condition in which FBS or HbA1c levels are higher than normal but not high enough to be classified as diabetes. |
| ***WHAT ARE THE MOST COMMON SITES FOR INSULIN ADMINISTRATION?***  ***WHY SHOULD INJECTION SITES BE ROTATED?*** | Abdomen, arms, thighs, buttocks  \*\***Works fastest and gives best results when injected in the abdomen**\*\*  Injection sites should be rotated to prevent lipodystrophy (hard lumps and fatty deposits). |
| ***WHAT IS HYPOGLYCEMIA?***  ***WHAT IS HYPERGLYCEMIA?*** | Low blood sugar  High blood sugar |
| ***WHAT ARE THE SIGNS AND SYMPTOMS OF HYPOGLYCEMIA?*** | Cool and clammy skin, rapid heartbeat, change in mood, headache, shakiness, dizziness, sweating, hunger, difficulty paying attention, confusion, seizures |
| ***WHAT ARE THE SIGNS AND SYMPTOMS OF HYPERGLYCEMIA?*** | Blurry vision and the 3Ps:   * Polydipsia (increased thirst) * Polyuria (increased urination) * Polyphagia (increased hunger) |
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*Source: AMA. Practice transformation series: medical assistant professional development. 2016.*

Medical assistant professional development sign-in sheet

Topic: Diabetes

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*Source: AMA. Practice transformation series: medical assistant professional development. 2016.*