Hypoglycemia-Related Event Mitigation

Mary M. Julius, RDN, LD, CDE,
Disclosure to Participants

• Notice of Requirements For Successful Completion
  – Please refer to learning goals and objectives
  – Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours

• Conflict of Interest (COI) and Financial Relationship Disclosures:
  – Presenter: Mary M Julius, RND, LD, CDE - discloses that she is an employee of the Department of Veteran Affairs, a member of the international Choosing Wisely Campaign, and a subject matter expert of the Federal Interagency Workgroup on Adverse Drug Events – Hypoglycemia.
  – No COI/Financial Relationship to disclose.

• Off-Label Use:
  – None.
Objectives

• Describe the burden of hypoglycemia utilization.
• Highlight risk factors.
• Report importance of Shared Decision Making aimed at individualized target goals.
• Strategize options for hypoglycemia risk mitigation
Address three key objectives:

- Identify common, preventable, and measurable adverse drug events (ADEs) that may result in significant patient harm
- Align the efforts of Federal health agencies to reduce patient harms from these specific ADEs nationally
- Based on National ADE data from inpatient and outpatient settings, three types of ADEs were considered to be **common, clinically significant, preventable, and measurable**, and were therefore selected as the high-priority targets of the ADE Action Plan.

  - Initial target of the ADE Action Plan includes **Diabetes agents**

**Hypoglycemic Safety**
Adverse Drug Events (ADEs)

**INSIDE the hospital**
- Affect ~1.9 million hospital stays annually
- Add 1.7 to 4.6 hospital days
- Cost 4.2 billion USD annually

**INSIDE to OUTSIDE the hospital**
- ~ Two-thirds of post-discharge complications*
- ~ One-half of preventable post-discharge complications

**OUTSIDE the hospital**
- ~3.5 million office visits
- ~1.3 million ED visits annually
- ~350,000 hospital admissions annually

*Within 3 weeks of discharge


Hospital Admissions For Hypoglycemia Now Higher Than For Hyperglycemia

Figure 2. Rates of Estimated Hospital Admissions for Hyperglycemia and Hypoglycemia Among Medicare Beneficiaries With Diabetes Mellitus, 1999 to 2010
Delay in onset of DX in T2DM  Beta cell apoptosis

Type 2 Background

• Misconception that hypoglycemia is not a concern for T2D
  – Although severe hypo is ~7x more common among T1D vs T2D patients, majority of hypoglycemia events are in T2D
  – 12x as many T2D patients (compared to T1D) seen in ED for hypo

• Prioritize Hypoglycemia prevention for T2DM
  – Quality measures are blunt tools, reinforcing a “lower-is-better” A1c strategy
  – However, raising A1c targets alone is not a sufficient hypoglycemia prevention strategy (e.g., high hypoglycemia rates in A1c >9%)
Type 2 Background

- "Diabetes agents were implicated in 1 of 5 ED visits for adverse drug events among older adults" - Shehab et al. JAMA 2017

- Hypoglycemia-related utilization is only the **tip of the iceberg** - Karter et al. JAMA Internal Med 2018
  - 11% of diabetes patients annually self-reported "severe hypoglycemia"
  - 0.5% annually experience "hypoglycemia-related utilization" (ED visits or hospitalization with primary/principal discharge diagnosis of hypoglycemia)
  - 95% of severe hypoglycemia episodes are **not** clinically recognized
The Problem: Hypoglycemia

Diabetes agents implicated in **13% of ED visits** for ADEs.

- **90%** of cases are associated with hypoglycemia
- **39%** of cases result in hospitalization

Real-world incidence of hypoglycemia is likely much higher.
Serious consequences

- Automobile accidents
- Falls
- CVD events (autonomic dysfunction, arrhythmias)
- Death
- Poorer QOL
- Poorer medication adherence
- ED and hospital utilization $1.3 billion/year ($1,335/episode)*

*Zhao, J Med Econ 2016
## Hypoglycemia Redefined

<table>
<thead>
<tr>
<th>Level</th>
<th>Glycemic Criteria</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypoglycemia alert value</strong> (Level 1)</td>
<td>Less than 70 mg/dL*</td>
<td>Sufficiently low for treatment with fast-acting carbohydrate and dose adjustment of glucose-lowering therapy</td>
</tr>
<tr>
<td><strong>Clinically significant hypoglycemia</strong></td>
<td>Less than 54 mg/dL**</td>
<td>Sufficiently low to indicate serious, clinically important hypoglycemia</td>
</tr>
<tr>
<td><strong>Severe hypoglycemia</strong> (Level 3)</td>
<td>No specific threshold</td>
<td>Hypoglycemia associated with severe cognitive impairment requiring external assistance for recovery</td>
</tr>
</tbody>
</table>

*Threshold to neuroendocrine responses to falling glucose in people without diabetes  
**Threshold neuroglycopenic symptoms requiring immediate action; detected on SMBG or CGM at least 20 minutes or lab measurement
Causes of Hypoglycemia

- A1c coefficient of variation
- Inconsistent food intake
- Food insecurity
- Weight loss
- Gastroparesis
- New Exercise
- Alcohol intake
- Cognitive Impaired
- NPO status
- Aggressive insulin use
- Sulfonyluria
- Hospital Within 30 days
- Depression
- 5 or more medications
- Numeracy
- Literacy
- Hypoglycemia unawareness
- Cognitive Impairment

- Chronic kidney or liver disease
- 5 or more medications
- Numeracy
- Literacy
- Hypoglycemia unawareness
- Cognitive Impairment

- Aggressive insulin use
- Sulfonyluria
- Hospital Within 30 days
Hypoglycemia highest risk population identification
Motivations

To Keep patients with Diabetes safe
To address this public health problem
10% reduction by 2020
“Targeting” high risk patients for population management becomes particularly compelling

→ Identify higher risk patients
## Predictors of Hypoglycemia

<table>
<thead>
<tr>
<th>Factor</th>
<th>Intensive Glycemia % (n)</th>
<th>Standard Glycemia % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>14% (79)</td>
<td>11% (20)</td>
</tr>
<tr>
<td>Food Related</td>
<td>48% (263)</td>
<td>58% (107)</td>
</tr>
<tr>
<td>Delayed or missed meal</td>
<td>31% (167)</td>
<td>44% (81)</td>
</tr>
<tr>
<td>Ate less carbohydrate</td>
<td>26% (144)</td>
<td>25% (47)</td>
</tr>
<tr>
<td>Unexpected, vigorous exercise</td>
<td>15% (80)</td>
<td>12% (23)</td>
</tr>
<tr>
<td>Took more insulin than prescribed</td>
<td>5% (30)</td>
<td>7% (13)</td>
</tr>
<tr>
<td>Ingested alcohol</td>
<td>3% (18)</td>
<td>2% (4)</td>
</tr>
</tbody>
</table>
Predictors of Hypoglycemia

Figure 2. Causes identified by patients for the severe hypoglycaemic events and number of patients (as % of group) reporting them. White bar = total of all countries (type 1, 319; type 2, 320); black bar = UK (type 1, 101; type 2, 100), grey bar = Germany (type 1, 94; type 2, 120), dotted bar = Spain (type 1, 124; type 2, 100).
Food Insecurity Screening

In the last 3 months were there times when your food supplies ran out and you could not afford to get more?

Screening Question

- NO: No further questions
- YES: PCP, Social Work, Nutrition, RN Case Manager
VHA Food insecurity - Pilot Findings

**Evaluation**

Over **30,000 patients** have been **evaluated** using the EMR templated question

**Occurrence**

40% of the positive responses are in patients with DM

**Sub-Analysis**

Of those with DM reporting food insecurity **59%** have at least one documented lab glucose <70 and **86%** of those with documented values <70 have more than one
Is Hunger a vital sign

For each statement, please tell me whether the statement was often true or never true for your household

Within the past 12 months, we were worried whether our food would run out before we got more

Within the past 12 months the food we bought just didn’t last and we didn’t have money to buy more
Predictors of Hypoglycemia

Lower Your Risk of LOW BLOOD SUGAR (hypoglycemia)

LOW BLOOD SUGAR CAN CAUSE SERIOUS SYMPTOMS...

- Sweating
- Dizziness
- Heart Pounding
- Confusion, Seizures, Passing Out

...THAT CAN LEAD TO A MEDICAL EMERGENCY.

2 MOST COMMON CAUSES of low blood sugar:

1. MISSING A MEAL OR EATING LESS THAN USUAL
   - Carbohydrates are broken down into sugar, so they impact diabetes control
   - Planning can help you better control your diabetes, and allow your medications to work better and more safely:
     - Eat controlled – just right, not too large – portions of carbohydrates
     - Eat consistently from day to day

2. TAKING TOO MUCH MEDICATION OR NOT TAKING IT AS PRESCRIBED
   - Diabetes medicines are taken as pills or injections.
   - They all work differently, so it’s important to know how and when to take them.

Medicines that Help Lower Blood Sugar “Spike” after Meal

<table>
<thead>
<tr>
<th>Medicine</th>
<th>When to Take with Meal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glipizide, Glyburide, or Glimepiride</td>
<td>30 minutes before</td>
</tr>
<tr>
<td>Insulin Aspart (Novolog*)</td>
<td>15-10 mins before</td>
</tr>
<tr>
<td>Insulin Lispro (Humalog*)</td>
<td>15-10 mins before</td>
</tr>
<tr>
<td>Insulin Regular (Humulin R* or Novolin R*)</td>
<td>immediately after</td>
</tr>
</tbody>
</table>

To get more information on VHA Choosing Wisely - Hypoglycemia Safety Initiative, and resources to better manage diabetes and low blood sugar, go to VHA Quality, Safety & Value website (http://www.qualityandsafety.va.gov/) and click on the “Choosing Wisely” button at right.

VHA Choosing Wisely - Hypoglycemia Safety Initiative (Updated May 2016)
Concurrent Research

JAMA Internal Medicine | Original Investigation

Development and Validation of a Tool to Identify Patients With Type 2 Diabetes at High Risk of Hypoglycemia-Related Emergency Department or Hospital Use

Andrew J. Karter, PhD; E. Margaret Warton, MPH; Kasla J. Lipska, MD, MHS; James D. Ralston, MD, MPH; Howard H. Moffet, MPH; Geoffrey G. Jackson, MHA; Elbert S. Huang, MD; Donald R. Miller, ScD
Identification of high risk patients within

Internal Sample

• 206,435 adult with type 2 diabetes (T2D) from Kaiser Permanente Northern California

External Validation

• Tested in 2 fully-independent populations: 1,245,352 VA and 15,108 KPWA
Predictors of Hypoglycemia

- Number of previous HU events: 61%
- Insulin treatment: 17%
- Sulfonylurea treatment: 11%
- Age: 7%
- CKD Stage: 2%
- Number of ED visits in previous year: 2%

Proportion of variance explained
### Hypoglycemia Risk Stratification Tool

**Tool Inputs**
- How many times has the patient ever had hypoglycemia-related utilization in an emergency department (primary diagnosis of hypoglycemia*) or hospital (principal diagnosis of hypoglycemia*) (0, 1-2, ≥3 times)?
- How many times has the patient gone to an emergency department for any reason in the prior 12 months (<2, ≥2 times)?
- Does the patient use insulin (yes/no)?
- Does the patient use sulfonylurea (yes/no)?
- Does the patient have severe or end-stage kidney disease (CKD stage 4 or 5) (yes/no)?
- Is the patient <77 years old (yes/no)?

**Instructions:** The 6 inputs above are used to identify one of the mutually-exclusive exposure groups and the corresponding risk category (high, low or intermediate) for hypoglycemia-related emergency department or hospital utilization* in the following 12 months. The first five options are defined by unique combinations of predictor variables, while the sixth option is indicated only after ruling out the first five options.

<table>
<thead>
<tr>
<th>Risk Factor Combinations</th>
<th>Risk Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥3 prior hypoglycemia-related emergency department or hospital utilization</td>
<td>High risk (&gt;5%)</td>
</tr>
<tr>
<td>1-2 prior hypoglycemia-related emergency department or hospital utilization AND Insulin user</td>
<td></td>
</tr>
<tr>
<td>No prior hypoglycemia-related emergency department or hospital utilization AND No insulin AND No sulfonylurea</td>
<td>Low risk (&lt;1%)</td>
</tr>
<tr>
<td>No prior hypoglycemia-related emergency department or hospital utilization AND No insulin AND Uses sulfonylurea AND Age &lt;77 years old AND Does not have severe or end-stage kidney disease</td>
<td></td>
</tr>
<tr>
<td>No prior hypoglycemia-related emergency department or hospital utilization AND Uses insulin AND Age &lt;77 years old AND &lt;2 ED visits in prior year</td>
<td>Intermediate risk (1-5%)</td>
</tr>
<tr>
<td>All other risk factor combinations</td>
<td></td>
</tr>
</tbody>
</table>
Hypoglycemia and shared decision making
## Reasonable Glycemic Targets for Older Adults

<table>
<thead>
<tr>
<th>Health Status/Characteristics</th>
<th>Rationale</th>
<th>A1c (%)</th>
<th>Fasting/Prandial (mg/dL)</th>
<th>Bedtime (mg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generally well</strong></td>
<td>Long life expectancy with benefit potential from control</td>
<td>&lt; 7.5</td>
<td>90-130</td>
<td>90-150</td>
</tr>
<tr>
<td>• Few comorbidities, cognitively intact, adequate function</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Complex</strong></td>
<td>Intermediate remaining life expectancy, high combined treatment burden, hypo risk, fall risk</td>
<td>&lt; 8</td>
<td>90-150</td>
<td>100-180</td>
</tr>
<tr>
<td>• Multiple chronic conditions, 2+ IADL deficits, mild to moderate cognitive impairment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Very complex/poor health</strong></td>
<td>Limited life expectancy; risks of treatment exceed benefits</td>
<td>&lt; 8.5</td>
<td>100-180</td>
<td>110-200</td>
</tr>
<tr>
<td>• LTC or EOL, moderate to severe CI, 2+ ADL deficits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: ADA Standards of Medical Care in Diabetes: 2018; AGS Diabetes in Older Adults Consensus Statement
Provide some guidance with specific examples:
Advanced microvascular disease is defined: severe non-proliferative (with severe hemorrhage, IRMA, or venous bleeding), or proliferative retinopathy and/or renal insufficiency (serum creatinine level > 2.0 mg/dL), and/or insensate extremities or autonomic neuropathy (e.g., gastroparesis, impaired sweating, orthostatic hypotension). 2017 VA/DoD Clinical Practice Guideline for the Management of Type 2 Diabetes Mellitus in Primary Care.

<table>
<thead>
<tr>
<th>Major Comorbidity or Physiologic Age</th>
<th>Microvascular Complications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absent or Mild</strong> 7</td>
<td>Moderate 8</td>
</tr>
<tr>
<td>Absent*</td>
<td>6.0-7.0%†</td>
</tr>
<tr>
<td>&gt; 10-15 years of life expectancy</td>
<td></td>
</tr>
<tr>
<td>Present 10</td>
<td>7.0-8.0%†</td>
</tr>
<tr>
<td>5-10 years of life expectancy</td>
<td></td>
</tr>
<tr>
<td>Marked 11</td>
<td>8.0-9.0%‡</td>
</tr>
<tr>
<td>&lt; 5 years of life expectancy</td>
<td></td>
</tr>
</tbody>
</table>
AHRQ SHARE MODEL

1. Seek your patient’s participation.
2. Help your patient explore & compare treatment options.
3. Assess your patient’s values and preferences.
4. Reach a decision with your patient.
5. Evaluate your patient’s decision.

Basis for Shared Decision Making

• Informed Consent
  – Without choice, true informed consent is impossible. White MK et al., JCOM 2003

• Preference-Sensitive Care
  – Represents around 30-35% of all medical care and occurs for conditions where two or more treatment alternatives exist with different risks and benefits or when the benefits/harm ratios are scientifically uncertain. O'Connor AM et al., Modifying Unwanted Variations in Health Care: Shared Decision Making Using Patient Decision Aids, Health Affairs 2004

• (SDM) principles extend the concept of informed consent beyond that of simple information transfer towards honoring informed preferences. King JS and Moulton BW. American Journal of Law & Medicine 32 2006: 429-501

Choosing Wisely Hypoglycemia Safety Initiative
Does this work?

- Identify a specific, manageable cohort of patients at high risk for hypoglycemia who may be over-treated utilizing electronic health record (EHR) tools

- Provide patients and providers with resources & education on all key messages related to patient centered care
VHA EMR tools

High risk cohort

- HbA1c < 7%
- Insulin or Sulfonylurea
- Age ≥ 75 or Dementia / Cognitive Impairment or SCr > 1.7 mg/dL

Integrated Approach

- Multi-Professional Education
- EMR Tools
- Online Panel Reports
EMR template

1. Questions
2. Care Plan
3. Data Capture
Over 9,300 patients have been evaluated using the EMR template. Evaluation rate for high-risk patients assigned to primary care is 87%.

Hypoglycemia has been reported by 25% of those evaluated. Of those reporting hypoglycemia, 56% have made a shared decision with their provider to relax treatment.

Of all patients evaluated, 95% have documented shared decision making.
Challenges in Reducing Over-treatment

Measures
- Inconsistent with Guidelines
  - NCQA/HEDIS
  - Bridges to Excellence

SDM Gaps
- Provider Cognitive Inertia
- Patient Expectation
- Decision Aids
- Trainers

EMR: Failure to Identify at Risk Patients
- Risk
- Severity

Lack Coordinated Message
- Consumer magazines
- Professional Organizations
- Lay Leadership
- Health Care Team Coordination
Challenges to Implementing Shared Decision Making for Hypoglycemic Safety

• Time, Expense and Resources
  – Lack of adequate decision aids describing hypoglycemic risk
  – Providers: “I’m already doing this”

• Communication Challenges
  – Low levels of patient health literacy and numeracy
  – Cultural backgrounds may differ
    • Gaps in patient-physician trust

• Patient Needs and Expectations
  – Providers: “Patients do not want to know all of the risks”
  – Half the time patients prefer physicians “best advice”

Adapted from King JS and Moulton BW. American Journal of Law & Medicine 32 2006 and Elwyn G et al., JGIM 2012
Hypoglycemia novel risk reduction strategy
“Targeting” high risk patients for population management becomes particularly compelling when there is an effective but costly intervention to hopefully prevent hypoglycemia

- Identify higher risk patients
- Intervene
- Prevent
Advocacy Implications

- **Hypoglycemic Safety**: Provide patients with information on symptoms, management and ways to **lower their risk**.

- **Shared Decision Making (SDM)**: Give both patients and providers the skills needed for SDM, including health literacy & numeracy.

- **A1c Goals**: Disseminate information about A1c accuracy and individualizing targets.

- **Food Sufficiency**: Educate both providers and patients about potential barriers and solutions to food insufficiency.

- **Medication Safety**: Ensure providers and patients have an understanding of potential risks of medications.
Evaluate hyper and hypoglycemia in the context of food insecurity
VOLUNTEER SERVICE and the Clinical Pantry
Item List Options

- **Protein**
  - Canned Salmon
  - Canned Tuna
  - Canned Chicken
  - Canned Beans**
    - black, kidney, etc.
  - Prepackaged Nuts or Nut Butters
    - almonds, pecans, cashews, etc.

- **Vegetables (non-starchy)**
  - All Varieties

- **Dairy** **
  - Powdered Low-fat Milk

- **Starches (grains, starchy vegetables)** **
  - Canned Peas
  - Canned Corn
  - Rice (preferably brown)
  - Noodles (spaghetti, penne, etc. – preferably whole grain)
  - Bran Cereal
  - Oatmeal

- **Fruit** **
  - Canned Fruit – all varieties
  - Fresh Fruit – all varieties
### What is in the bag? What does it cost?

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>pork and beans</td>
<td>0.92</td>
</tr>
<tr>
<td>canned fruit</td>
<td>1.48</td>
</tr>
<tr>
<td>tuna, chix, 2 cans</td>
<td>1.36</td>
</tr>
<tr>
<td>instant oats</td>
<td>1.72</td>
</tr>
<tr>
<td>canned vegetables; 2 canned</td>
<td>1.96</td>
</tr>
<tr>
<td>canned potato</td>
<td>1.00</td>
</tr>
<tr>
<td>spaghetti pasta</td>
<td>1.00</td>
</tr>
<tr>
<td>Hunts tomato sauce</td>
<td>1.00</td>
</tr>
<tr>
<td>subtotal</td>
<td>10.78</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>peanut butter, every 4 weeks</td>
<td>2.50</td>
</tr>
<tr>
<td>Jelly; every 4 weeks</td>
<td>1.68</td>
</tr>
</tbody>
</table>
## What is ONE Serving?

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Serving Size</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starch</td>
<td>1 oz</td>
<td>150</td>
</tr>
<tr>
<td>Fruit</td>
<td>1 cup</td>
<td>100</td>
</tr>
<tr>
<td>Milk</td>
<td>1 cup</td>
<td>100</td>
</tr>
<tr>
<td>Vegetable</td>
<td>1 cup</td>
<td>50</td>
</tr>
<tr>
<td>Free Food</td>
<td>1/2 cup</td>
<td>50</td>
</tr>
<tr>
<td>Meat</td>
<td>1 oz</td>
<td>100</td>
</tr>
<tr>
<td>Fat</td>
<td>1 Tbsp</td>
<td>100</td>
</tr>
</tbody>
</table>

## Nutrition Facts

- Calories: 230
- Fat: 6g (18%)
- Carbohydrates: 25g (8%)
- Protein: 10g

## Recommendations

1. Look at the serving size. Notes that may be more than one serving in a package.
2. Determine the amount of carbohydrates in one serving.
3. Decide if it's heart healthy. 

### Carbohydrates

<table>
<thead>
<tr>
<th>Source</th>
<th>Calories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starch</td>
<td>15g</td>
</tr>
<tr>
<td>Fruit</td>
<td>10g</td>
</tr>
<tr>
<td>Milk</td>
<td>10g</td>
</tr>
<tr>
<td>Vegetable</td>
<td>5g</td>
</tr>
<tr>
<td>Free Food</td>
<td>5g</td>
</tr>
<tr>
<td>Meat</td>
<td>10g</td>
</tr>
<tr>
<td>Fat</td>
<td>10g</td>
</tr>
</tbody>
</table>

### Calcium

- Milk: 300mg
- Broccoli: 150mg

### Fiber

- Lentils: 20g
- Apples: 5g

### Heart Healthy

- Whole grains
- Fruits and vegetables
- Low-fat dairy products

### Healthy fats

- Olive oil
- Avocado
- Nuts and seeds

### Unhealthy fats

- Saturated fats
- Trans fats
- Phospholipids

### Sources of sugar

- Fruit
- Honey
- Syrup

### Safe fats

- Monounsaturated fats
- Polyunsaturated fats

### omega-3 fats

- Canned tuna
- Salmon

###omega-6 fats

- Peanut oil
- Sunflower oil

### Omega-3 to Omega-6 ratio

- 1:1

### Saturated fat

- 10% of total calories

### Trans fats

- 0%

### Phospholipids

- 0%

### Unsaturated fats

- 80% of total calories

### Unhealthy saturated fats

- 18%

### Unhealthy trans fats

- 0%

### Unhealthy phosopholipids

- 0%
Ask about food insecurity

• In the past 3 months was there a time where you did not have money for food?
  – Hierarchy of needs: Hunger is a priority
  – Assess this barrier
  – Advise on Social Service programs
  – ASSIST
    • Weigh the options. Speak with the provider
    • Clinical pantries
    • Evaluate
Hypoglycemia

Shared decision making
Individualized A1c goals
Food insufficiency
Medication safety
FIW: Hypoglycemia risk stratification tools

**Identify risk factors and patient performance:**
- Cognitive impairment/dementia
- Clinically significant Chronic Kidney Disease
- Social factors (homelessness, live alone/socially isolated)
- History of or risk for falls
- Difficulty in self-management (poor dexterity, mental health issues)
- Food insufficiency (Do you ever skip meals? Do you ever go to bed hungry?)
- Patient fears and quality of life

**Determine prior hypoglycemia events:**
- Hypoglycemia requiring paramedics, emergency dept. visit or inpatient evaluation/care
- Any episode(s) of hypoglycemia requiring bystander assistance
- No prior events but high risk and/or patient fears and concerns
- No major issues identified

**Develop and individualize action plan:**
- Case management, specialty care if available, urgent review of medication regimen
- Urgent review of medication regimen, self-management, target goals, patient education to identify cause of lows and corrective action
- Review of medication regimen, self-management, target goals, patient education
- Routine management and continued surveillance
Action Plan Approach

• Surveillance: Federal surveillance resources and data to assess the health burden

• Prevention: Share existing evidence based prevention tools across federal agencies and with other non-federal care providers
  – Account for the greatest number of measurable harms
  – Can be effectively measured
  – Are considered largely preventable
  – The 3 drug classes addressed in the Action Plan are anticoagulants, diabetes agents, and opioids.
“Targeting” high risk patients for population management becomes particularly compelling when there is an effective but costly intervention to possibly prevent hypoglycemia

- Identify higher risk patients
- Intervene
2. VHA Support Service Center (VSSC in the office of Organizational Excellence. April 2017)