Patient and Professional Education
PATIENT EDUCATION: Diabetes Is a Self-Care Disease

• Requires multiple self-care activities throughout the day that often change over time…

• Ongoing adjustments need to be made regarding meals, physical activity, medications & need for glucose monitoring

• This requires individualized education, motivation, and support over time, NOT on the day of discharge!
# Diabetes Teaching in the Hospital Setting

<table>
<thead>
<tr>
<th><strong>Barriers</strong></th>
<th><strong>Possible Solutions</strong></th>
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</thead>
<tbody>
<tr>
<td>Pain, nausea, fatigue</td>
<td>Keep sessions short</td>
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<tr>
<td>Interruptions, noise</td>
<td>Use blood glucose monitoring, insulin administration</td>
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<td>Not a priority:</td>
<td>and meal tray as teaching moments</td>
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<td>Diabetes often NOT</td>
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<td>reason for admission</td>
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<tr>
<td>Need for translation</td>
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<td>services</td>
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Assess Barriers to Self-Care

• Depression: up to 2x more common in diabetes patients
• Denial & despair around diagnosis
• Cultural and religious beliefs and practices—need for accommodations
• “I’ve got a little sugar”
• Lack of social support
• Lack of physical & cognitive ability to perform self care
• High cost of medications and supplies
Survival Skills Education: Should Be a Team Effort

Topics to Cover:

• **Basic Meal Planning**: Carbs that count, portion sizes, reading nutrition facts label

• **Diabetes Medication Regimen**: When, how, how much

• **Blood Glucose Monitoring**: When, how, targets, records

• **Hypo and hyperglycemia**: Sick day management, reducing risk
Lifestyle Always Comes First…

• Benefits of Meal Planning and Physical Activity
  – A1C reduction 1-2%
  – Weight loss
  – Decreased insulin resistance

• Suggest Educational Tools
  – APPS, Weight Loss Programs, Wearables
Insulin Pen Teaching

Safety

• RN Education: 
  *Be Aware: Don’t Share*

• **Barcoding** Including insulin type & PATIENT ID

• Pen is returned to patient specific drawer immediately post each use

Patient Education

• Supplies

• Generic Handouts for all pens

• Label Saline Pens: 
  “Do Not Inject”

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ISMP Newsletter, 2013, 2014
Patient’s Own Insulin Pump: Competency Must Be Evaluated

Vs.
Diabetes Teaching Resources

- Practice Pens
- Teaching Checklist In EMR
- Handouts in Multiple Languages
- Meters
Reasons Why Patients Don’t Want to Start Insulin

- Expected harm
- Illness Severity
- Restrictiveness
- Lack of Fairness
- Anticipated Pain
- Hypoglycemia
- Low Self Efficacy
- Personal Failure
- Permanence

On Average: 3.1 beliefs/patient

Staff Education

Joint Commission's Certificate of Distinction for Inpatient Diabetes Care and the American Diabetes Association Recommends:

- Specific staff education requirements
- Written blood glucose monitoring protocols
- Plans for treatment of hypoglycemia and hyperglycemia
- Data collection of incidences of hypoglycemia
- Patient education on self-management of diabetes
- Identified program champion or program champion team
Key Staff Education Topics

- Inpatient glycemic targets across settings
- T1DM vs. T2DM management principles
- Carbohydrate controlled meals planning and making substitutions
- Coordination of timing of blood glucose monitoring (BGM), insulin administration and meals
- Treatment of hypo and hyperglycemia
- Discharge planning strategies
- Patient Education: BGM & insulin self administration to patients (RNs, other members of team?)
Diabetes Champions

- Intensive then ongoing additional education for clinicians
- Focus on management AND education
- Champions can serve as unit or service based resource
- Most impact if house-wide & interdisciplinary
- Consider web-based learning, grand rounds, shadowing diabetes educator
Staff Education: Be Creative

• Unit Based Education
• Online learning
• Case Studies
• Grand Rounds
• Pocket Cards
• Team Web Sites
• MedHub
• Games
Prescriber Education

• Case-based training by specialty
• Real life scenarios for a variety of patient types e.g. T1DM, T2DM, NPO, eating
• How and when to initiate basal and bolus insulin
• Insulin dose titrations to achieve glycemic targets
• Transition from IV to subcutaneous insulin
• Special Situations: steroids, enteral feedings, perioperative, patients own insulin pump
Welcome to

Who Wants to be an Inpatient Glycemic Control Millionaire?
Which of the following is the most difficult patient barrier to overcome when initiating insulin therapy?

A: fear of pain with injection
B: fear of weight gain
C: fear of complications
D: loss of flexibility of life style
Insulin represents ___ % of medication errors that cause harm to the patient.

A: 22%  
B: 27%  
C: 39%  
D: 51%
$4,000 Question

Prandial Insulin Analogs Should Be Given _______.

A: 15 min before meal
B: 15 minutes after meal
C: At first bite
D: +/- 15 minutes of first bite
The best way to prepare the finger for BG monitoring is:

A: Purell
B: Alcohol Wipe
C: Warm Water & Soap
D: 3% Hydrogen Peroxide
$64,000 Question

In order for a pt to be safely sent home on insulin for the 1st time, which is the most important?

A: Order a Visiting Nurse
B: Have patient watch video of how to use insulin pen
C: Have CDE instruct pt
D: Have pt self administer insulin with RN
Your patient’s BG is 43 mg/dL but has no symptoms. What is the next thing you should do?

A: Give 15G tube glucose gel
B: Give 3 glucose tabs
C: Give 4 -6 oz juice
D: Re-check BG
The FDA currently requires glucose meters to be within ___% of the real value if BG is >75 mg/dl:

A: 7%  
B: 10%  
C: 15%  
D: 20%
Case Studies & Conclusion
Case 4

- 45 y/o male with newly diagnosed T2DM w/ A1C 8.3%. Denies polyuria, polydipsia or blurry vision.
- Home regimen – newly diagnosed
- A1C 8.3%
- Cr 0.85
- Weight 95 kg (BMI 30)

Other Considerations?

What is the most appropriate initial treatment regimen?
A. Lifestyle + metformin
B. Lifestyle + basal insulin at 50% of inpatient dose
C. Lifestyle + metformin + DPP-IV inhibitor
D. Lifestyle + SGLT-2 inhibitor
Case 5

• 45 y/o female with uncontrolled T2DM w/ A1C 10.2%, heartburn, HTN and hyperlipidemia needs medication escalation for T2DM, but is very concerned about weight gain and will not take any medication that will cause weight gain.

• Home regimen – metformin 1000mg bid
• A1C 12.2%
• Cr 0.6
• Weight 90 kg (BMI 34)

• Which of the following medication(s) should be added next?
  A. Lifestyle changes + GLP-1 RA + glipizide
  B. Lifestyle changes + SGLT-2 inhibitor + GLP-1 RA
  C. Lifestyle changes + Basal Insulin at 50% of inpatient dose + mealtime insulin at fixed dose
  D. Lifestyle changes + Basal Insulin at 50% of inpatient dose + GLP-1 RA

Other Considerations?
Case 6

- 65 y/o female with longstanding T2DM c/b retinopathy, neuropathy and nephropathy w/ chronic kidney disease (Cr 1.7) as well as coronary artery disease and congestive heart failure admitted to the hospital with CHF exacerbation and acute kidney injury, noted to have hypoglycemia at home 3x/week.
- Home regimen: glipizide 5mg bid
- A1C 7.2%
- Cr 2.2 (GFR 24)
- Weight 80 kg (BMI 28)

Other Considerations?

Which of the following medication adjustments is most appropriate?

A. No change necessary, A1C at goal given age and co-morbidities
B. Stop glipizide and start TZD
C. Stop glipizide and start DPP-IV inhibitor
D. Stop glipizide and start SGLT-2 inhibitor
E. Stop glipizide and start metformin
Stepwise Treatment of T2DM

Progressive deterioration of β-cell function

Lifestyle changes & metformin
Combination oral agents, ? GLP-1 RAs
Basal + ? GLP-1 OR: Add basal insulin and titrate
Basal Plus or Add prandial insulin at main meal or fixed meal doses
Basal Bolus Correction Calculate prandial doses based on current BG

Further intensification

Insulin Initiation

Intensification

Questions?
Thank you