Maximize Medication Adherence by Minimizing Barriers

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The University of Oklahoma School of Community Medicine: Internal Medicine
Tulsa, OK
Member and Supported by Harold Hamm Diabetes Center

William H. Polonsky, PhD, CDE
Associate Clinical Professor
University of California, San Diego
President
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San Diego, CA

Objectives

- Describe the economic, clinical and humanistic impact of poor medication adherence
- List multidimensional barriers affecting medication adherence
- Review the profiles of therapeutic options and the importance of appropriate medication selection
- Discuss the role of care teams in medication adherence
- Implement strategies to improve medication adherence in patients with diabetes

Faculty

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Disclosure to Participants

- Notice of Requirements For Successful Completion:
  - Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours
- Conflict of Interest and Financial Relationship Disclosures:
  - Presenter: Katherine S. O’Neal, PharmD, MBA, BCACP, CDE, BC-ADM, AE-C – Nothing to disclose
  - Presenter: William Polonsky, PhD, CDE – Served on Advisory Boards for Novo Nordisk, Sanofi, Eli Lilly and Company, Intarcia Therapeutics Inc., Dexcom, and Roche. He has also performed contracted research for Sanofi, Dexcom, and Insulet Corporation.
- Non-Endorsement of Products:
  - Accredited status does not imply endorsement by AADE, ANCC, ACPE or CDR of any commercial products displayed in conjunction with this educational activity
- Off-Label Use:
  - Participants will be notified by speakers to any product used for a purpose other than for which it was approved by the Food and Drug Administration.

Pre-test Question 1

Which of the following statements is TRUE regarding patients with diabetes and medication adherence?

A. With poor adherence, patients are 4 times more likely to be hospitalized due to diabetes
B. Improved adherence to diabetes medications could save $5 billion annually
C. A 10% increase in adherence corresponds to a 0.05% decrease in hemoglobin A1C
D. Poor adherence to diabetes medications increases mortality risk by 2.5 times

Pre-test Question 2

Please rate your ability to implement strategies to improve medication adherence in patients with diabetes?

A. Excellent
B. Good
C. Fair
D. Poor
A 57-year old woman with a 13 year history of T2DM visits you for her first diabetes education session. She has been successfully managed on metformin 1000mg/sitagliptin 50mg twice daily. In the past year, her A1C has jumped to 10.3%. She has private insurance and is the CFO of a large national bank. Six months ago, her PCP started her on 20 units basal insulin + 5 units bolus insulin with each meal. Her detailed blood sugar log shows a blood glucose range of 200-260 at all times of the day. A1C today is 10.6%. Which one of the following multidimensional barriers is most likely contributing to the patient’s poor glycemic control?

A. Social Factors
B. Healthcare System
C. Therapy Related Factors
D. Economic Factors

**Pre-test Question 3**

**Medication Adherence**

“Not taking medication as prescribed – taking either too little, or too much, for too short, or too long a period, at the wrong time or in an ineffective way – can have negative consequences for patients, healthcare, and the economy.”

World Health Organization

**Adherence Statistics**

- Half of all patients do not take their medications as prescribed
- More than 1 in 5 new prescriptions go unfilled
- To save money, 8% of adults don’t take their medication
- Average medication adherence 71%
- Adherence is lowest among patients with chronic illnesses
- Diabetes medications 43-73%

**DAWN Study**

<table>
<thead>
<tr>
<th></th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication adherence</td>
<td>83%</td>
<td>78%</td>
</tr>
<tr>
<td>Self-monitoring blood glucose</td>
<td>70%</td>
<td>64%</td>
</tr>
<tr>
<td>Keeping appointments</td>
<td>71%</td>
<td>72%</td>
</tr>
<tr>
<td>Diet</td>
<td>39%</td>
<td>37%</td>
</tr>
<tr>
<td>Exercise</td>
<td>37%</td>
<td>35%</td>
</tr>
</tbody>
</table>


**Medication Adherence vs. Persistence**

For every 100 prescriptions written...

- 15.20% are filled at pharmacy
- 25.30% are picked up from pharmacy
- 49.64% are taken properly
- 10.70% are refilled as prescribed

**IMPACT OF POOR MEDICATION ADHERENCE**

Adherence and A1C

- Morris and Colleagues
  - Studied pediatric patients aged 9-22 diagnosed with type 1 for 4-12 years
  - Adherence groupings (p<0.001)
    - Low: A1c 9.44 ± 1.7
    - Moderate: A1c 8.98 ± 1.5
    - Moderate-High: A1c 7.85 ± 1.4
    - High: A1c 7.25 ± 1.0

- Schectman and Colleagues
  - Studied 810 adult patients with type 2 diabetes
  - Each 10% increase in adherence corresponded to a 0.16% decrease in A1c (p<0.0001)


Adherence and Hospitalization

- Lau and Colleagues
  - Studied data from administrative claims from a managed care organization over 2 years
  - 900 patients with age range 19-94
  - 2.5 times more likely to be hospitalized
  - Adherence groupings (p=0.01)


Currie and Colleagues

- Studied data from The Health Improvement Network database of > 350 primary care practices in the UK
- 15,984 patients with type 2 diabetes age 50-76
- Clinic Non-attenders (1.16x increased mortality risk)
  - Smokers, younger in age, higher A1c, higher morbidity (p<0.001)
- Medication nonadherence (1.58x increased mortality risk)
  - Women (p=0.001)
  - Smokers (p=0.014)
  - Higher A1c (p=0.001)
  - Higher morbidity (p<0.001)


Adherence and Mortality

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  - 15,984 patients with type 2 diabetes age 50-76
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General Considerations


Economic Burden

- Estimated Impact of Improving Medication Adherence in USA

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<tr>
<th>Change</th>
<th>Patients at Risk</th>
<th>ED visits Avoided</th>
<th>Inpatient Visits Avoided</th>
<th>Total Costs of ED Visits ($)</th>
<th>Total Costs of Inpatient Visits ($)</th>
<th>Total Annual Economic Impact ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improving adherence</td>
<td>10.4</td>
<td>699,000</td>
<td>341,000</td>
<td>735 million</td>
<td>396 billion</td>
<td>4.68 billion</td>
</tr>
<tr>
<td>Avoiding loss of adherence</td>
<td>3.9</td>
<td>383,000</td>
<td>277,000</td>
<td>403 million</td>
<td>321 billion</td>
<td>3.61 billion</td>
</tr>
<tr>
<td>Total</td>
<td>14.3</td>
<td>1,082,000</td>
<td>618,000</td>
<td>1,138 million</td>
<td>716 billion</td>
<td>8.29 billion</td>
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<td>Medicare Population</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Improving adherence</td>
<td>4.3</td>
<td>290,000</td>
<td>141,000</td>
<td>377 million</td>
<td>184 billion</td>
<td>2.22 billion</td>
</tr>
<tr>
<td>Avoiding loss of adherence</td>
<td>1.6</td>
<td>162,000</td>
<td>116,000</td>
<td>208 million</td>
<td>150 billion</td>
<td>1.71 billion</td>
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<tr>
<td>Total</td>
<td>5.9</td>
<td>452,000</td>
<td>257,000</td>
<td>585 million</td>
<td>334 million</td>
<td>3.93 billion</td>
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General Considerations

- Greater Adherence To Diabetes Drugs Is Linked To Less Hospital Use and Could Save Nearly $5 Billion Annually

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MULTIDIMENSIONAL BARRIERS TO MEDICATION ADHERENCE

AADE16

**Five Dimensions of Adherence**

- Healthcare system and team
- Social and economic factors
- Condition-related factors
- Patient-related factors
- Therapy-related factors

**Patient Factors**

- Psychological (e.g., knowledge, perceived risk/benefit of treatment, confidence, motivation, alcohol/substance abuse, or frustration)
- Physical (e.g., visual or cognitive impairment, limited mobility)
- Low socioeconomic status
- Cultural
- Low levels of education
- High stress levels
- Depression
- Eating disorders
- Forgetfulness

**“Modifiable” Factors**

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<tr>
<th>Disease beliefs</th>
<th>% who are poorly adherent if agree with belief</th>
<th>% who are poorly adherent if disagree with belief</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have diabetes only when sugar is high</td>
<td>56</td>
<td>24</td>
<td>.005</td>
</tr>
<tr>
<td>Consequences of diabetes are low</td>
<td>36</td>
<td>19</td>
<td>.03</td>
</tr>
<tr>
<td>Symptoms of diabetes are minimal</td>
<td>39</td>
<td>16</td>
<td>.03</td>
</tr>
<tr>
<td>Have low control over diabetes</td>
<td>49</td>
<td>17</td>
<td>.003</td>
</tr>
<tr>
<td>Medication beliefs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Don’t need diabetes medicines when sugar is normal</td>
<td>53</td>
<td>25</td>
<td>.02</td>
</tr>
<tr>
<td>Worried about side-effects of medicines</td>
<td>42</td>
<td>18</td>
<td>.001</td>
</tr>
<tr>
<td>Worried about addiction to medicines</td>
<td>46</td>
<td>25</td>
<td>.04</td>
</tr>
<tr>
<td>Medicines are hard to take</td>
<td>74</td>
<td>18</td>
<td>.001</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little confidence in ability to control diabetes</td>
<td>46</td>
<td>18</td>
<td>.001</td>
</tr>
<tr>
<td>Significant depressive symptoms</td>
<td>40</td>
<td>23</td>
<td>.03</td>
</tr>
<tr>
<td>Diabetes interferes with social life</td>
<td>43</td>
<td>22</td>
<td>.01</td>
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</table>

**Healthcare System**

- Access to care
- Continuity of care
- Patient education material not written in plain language
- Restricted formulales

**Team**

- Lack of empathy
- Lack of positive reinforcement
- Disparity between beliefs of provider and patient
- Relationship
- Communication skills

**Condition/Therapy Factors**

- Duration of disease
- Frequent changes in regimen
- Treatment requiring mastery of technique
- Fear of needles
- Adverse effects
- Co-morbidities

- Lack of immediate benefit
- Medications with social stigma
- Concerns about long-term medication use
- Inconvenience
- Complexity of regimen
Impact of Dosing Frequency

<table>
<thead>
<tr>
<th>Dosing Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x/day</td>
<td>40%</td>
</tr>
<tr>
<td>2x/day</td>
<td>45%</td>
</tr>
<tr>
<td>3x/day</td>
<td>65%</td>
</tr>
<tr>
<td>4x/day</td>
<td>79%</td>
</tr>
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</table>

Overall p < 0.001

What is Health Literacy?

- The degree to which people obtain, process, and understand basic health information and services in order to make appropriate health decisions (Institute of Medicine)

Economic/Social Factors

- Health insurance
- Medication cost
- Transportation

Social

- Limited English proficiency
- Lack of family or social support
- Unstable living conditions
- Web-based information
- Low health literacy

What Does This Mean?

- The revocation by these Regulations of a saving on the previous revocation of a provision does not affect the operation of the saving in so far as it is not specifically reproduced in these Regulations but remains capable of having effect.


Why Care? With Diabetes...

- Drawing and measuring insulin with a syringe
- Identifying the correct dose on an insulin pen
- Working a glucometer
- Reading and comprehending blood sugars
- Reading education materials
- Calculating carbohydrates
- Calculating an insulin dose based on carbohydrates
- Understanding nutrition principles
- Understanding the role of exercise
- Medication adherence
- Taking medications appropriately
Schillinger and Colleagues

- n=408
- 2 times more likely to have worse glycemic control
  - A1c ≥ 9.5%(p=0.01)
- 2 times more likely to have nephropathy (p=0.01)
- 3 times more likely to have atherosclerotic disease
- 2 times more likely to have nephropathy
- 2.5 times more likely to have a lower extremity amputation
- 2 times more likely to have ischemic heart disease
- 2.5 times more likely to have worse glycemic control
- n=408
- A1c ≥ 9.5%(p=0.02)


**ADA/EASD 2015 Guidelines cont’d**

Currently Available Antidiabetic Medications

<table>
<thead>
<tr>
<th>Class</th>
<th>Drugs</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Biguanide</td>
<td>Metformin</td>
<td>Extensive experience, no hypoglycemia, ↓ body weight</td>
<td>GI AE, lactic acidosis, B12 deficiency</td>
<td>Low</td>
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<tr>
<td>SU</td>
<td>Glyburide, Glibizide, Glimepiride</td>
<td>Extensive experience, ↓ microvascular risk</td>
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<td>DPP-4-I</td>
<td>Sitagliptin, Saxagliptin</td>
<td>No hyperglycemia, ↓ body weight</td>
<td>Angioedema/urticaria and other immune-mediated effects, ↑ acute pancreatitis, ↑ Heart failure hospitalizations</td>
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<td>BAS</td>
<td>Metformin, Pioglitazone, Rosiglitazone, Thiazolidinediones</td>
<td>↓ body weight</td>
<td>GI A/E, ↓ body weight</td>
<td>High</td>
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<tr>
<td>SGLT-2I</td>
<td>Canagliflozin, Empagliflozin</td>
<td>No hyperglycemia, ↓ body weight, ↓ blood pressure</td>
<td>GI infections, polyuria, ↑ volume depletion / hypotension / diazoxide, ↑ LDL, transient / SCr</td>
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**ADA/EASD 2015 Guidelines**

Healthy eating, weight control, increased physical activity

**ADA/EASD 2015 Guidelines cont’d**

Currently Available Antidiabetic Medications (Cont’d)

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**BAS = biguanide analogues; SGLT-2i = sodium-glucose cotransporter 2 inhibitor; GLP-1 RA = glucagon-like peptide-1 receptor agonists; DPP-4-i = dipeptidyl peptidase 4 inhibitor; SGLT2-i = sodium-glucose cotransporter 2 inhibitor; GLP-1 RA = glucagon-like peptide-1 receptor agonists. **


**Schillinger and Colleagues.**

- 2 times more likely to have worse glycemic control
- A1c ≥ 9.5%(p=0.01)
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- n=408
- A1c ≥ 9.5%(p=0.02)


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<td>Canagliflozin, Empagliflozin</td>
<td>No hyperglycemia, ↓ body weight, ↓ blood pressure</td>
<td>GI infections, polyuria, ↑ volume depletion / hypotension / diazoxide, ↑ LDL, transient / SCr</td>
<td>High</td>
</tr>
</tbody>
</table>

**Schillinger and Colleagues.**

- n=408
- 2 times more likely to have worse glycemic control
- A1c ≥ 9.5%(p=0.01)
- 2 times more likely to have nephropathy (p=0.01)
- 3 times more likely to have atherosclerotic disease
- 2 times more likely to have nephropathy
- 2.5 times more likely to have a lower extremity amputation
- 2 times more likely to have ischemic heart disease
- 2.5 times more likely to have worse glycemic control
- n=408
- A1c ≥ 9.5%(p=0.02)

Currently Available Antidiabetic Medications (Cont’d)

<table>
<thead>
<tr>
<th>Class</th>
<th>Drugs</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 agonists</td>
<td>Exenatide, Exenatide ER, Liraglutide, Dulaglutide</td>
<td>No hypoglycemia; ↓ weight; ↓ post prandial glucose excursions; ↓ some cardiovascular risk factors</td>
<td>GI A/E; ↑ heart rate; ↑ Acute pancreatitis; C-cell hyperplasia/medullary thyroid tumors in animals, injectable</td>
<td>High</td>
</tr>
<tr>
<td>Amylin mimetic</td>
<td>Pramlintide</td>
<td>↓ weight; ↓ post prandial glucose excursion</td>
<td>Modest A1c lowering; GI A/E; hypoglycemia unless insulin is reduced; injectable</td>
<td>High</td>
</tr>
<tr>
<td>Insulins</td>
<td>Variable</td>
<td>Nearly universal response; theoretically unlimited efficacy; ↓ microvascular risk</td>
<td>Hypoglycemia, weight gain, injectable, patient reluctance</td>
<td>Variable</td>
</tr>
</tbody>
</table>


Cost of Antidiabetic Medications

<table>
<thead>
<tr>
<th>Low Cost</th>
<th>Moderate Cost</th>
<th>High Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biguanides (metformin)</td>
<td>500 mg (Qly 100) $71 OR $4 ($10) lists</td>
<td>Metformin (metformin)</td>
</tr>
<tr>
<td>Sulfonilureas (gliclazide)</td>
<td>5 mg (Qly 100) $25 OR $4 ($10) lists</td>
<td>Gliclazide</td>
</tr>
<tr>
<td>TZD (rosiglitazone)</td>
<td>15 mg (Qly 30) $210 OR $62</td>
<td>Rosiglitazone</td>
</tr>
</tbody>
</table>

ADA. Standards of Medical Care in Diabetes – 2016. Diabetes Care 2016; 39(1):S1-S112; Lexi-Comp

Objectives

- Describe the economic, clinical and humanistic impact of poor medication adherence
- List multidimensional barriers affecting medication adherence
- Review the profiles of therapeutic options and the importance of appropriate medication selection
- Discuss the role of care teams in medication adherence
- Implement strategies to improve medication adherence in patients with diabetes

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University of California, San Diego
President
Behavioral Diabetes Institute
San Diego, CA

Patient Assistance Programs

www.needymeds.org
Case Study: Mr. Reynolds

- Age 59, divorced, self-employed CPA
- T2D for 12 yrs, BMI 34, last A1C 8.8%
- After discussion, he admits that he often “forgets” his OHA’s and insulin; sees no reason to worry about this
- Rarely checks BG’s (“no point to it”)
- Knows diabetes can harm him, but has many other things to worry about that seem more pressing.

To Encourage Mr. R to Take His Medications, Where to Start?

- “Have you been feeling down, depressed or hopeless over the past few weeks?”
- “Don’t you understand that poorly controlled diabetes can be very harmful to your health?”
- “What do you think about the medications that have been prescribed for you?”
- “What could be done that might help you to remember to take your medications?”

Two Key Interventions

- Addressing problematic beliefs about medications
- Enhancing patient-provider trust

Patient Medication Beliefs

Perceived Costs
- Adverse effects
- Concerns about long-term adverse effects
- Represents “sickness”

Perceived Benefits
- Rarely apparent
- HCP may state that long-term risks are reduced
Challenging Harmful Beliefs: Three Messages for Our Patients

1. Out-of-control diabetes can harm you, even if you feel okay
2. Treatment should not be delayed

Case Example

<table>
<thead>
<tr>
<th>Back on Track Feedback</th>
<th>Name: Molly B.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests</td>
<td>Usual Goals</td>
</tr>
<tr>
<td>A1C 7.0% or less</td>
<td>8.7%</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>130/80</td>
</tr>
<tr>
<td>Lipids</td>
<td>100 or less</td>
</tr>
</tbody>
</table>

Critical Medication “Secrets”

• Taking your medications is one of the most powerful things you can do to positively affect your health
• Your medications are working even if you can’t feel it
• Needing more medication isn’t your fault
• More medication doesn’t mean you are sicker, less medication doesn’t mean you are healthier

A Diabetes Quiz

ROY takes 2 different diabetes pills and insulin, and his last A1C is 6.8%, SAM hasn’t been prescribed any diabetes pills, and his last A1C was 9.1%. Both patients have had diabetes for the same length of time. Who is doing better with his diabetes?

A. ROY. How healthy you are, and your risk of complications, is not determined by the type of treatment or how many pills you take. It is your metabolic results that matter.

Even if you are not taking pills or insulin, high blood sugars will likely lead to future problems.
The KEY Message

What we have missed:

• In a significant number of cases, patients avoid or quit medications because they are trying to be healthy.

• Patients and HCPs have the same goal (and often the same concerns) in mind, and we must take advantage of that.

Two Key Interventions

• Addressing problematic beliefs about medications
• Enhancing patient-provider trust

Communication and Refill Adherence

Prevalence of Poor Refill Adherence for Any Cardiometabolic Medication by Ratings of Communication with Clinicians in a Cohort of 9377 DM Patients

<table>
<thead>
<tr>
<th>Measure</th>
<th>Unadjusted Prevalence Difference % (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved you in decisions*</td>
<td>8 (4 to 11)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Understand your problems with treatment*</td>
<td>11 (6 to 15)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Put your needs first*</td>
<td>8 (4 to 13)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Confidence/trust in PCP*</td>
<td>11 (6 to 16)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

*Weighted to account for the survey design’s nonproportional sampling as well as survey nonresponse. Adjusted for patient characteristics (see article). Never or sometimes. Usually or always. Adapted from the Interpersonal Processes of Care Instrument. Adapted from the Trust in Physicians Scale.


HCP-Patient Relationship

<table>
<thead>
<tr>
<th>Consultation Variable</th>
<th>Unadjusted OR (95% CI)</th>
<th>Adjusted* OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust in Physician Scale score</td>
<td>1.07 (1.02-1.12)</td>
<td>1.04 (0.99-1.10)</td>
</tr>
<tr>
<td>Continuity of care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UPC Index</td>
<td>0.90 (0.97-1.01)</td>
<td>0.99 (0.97-1.02)</td>
</tr>
<tr>
<td>Usual source of care</td>
<td>2.87 (0.86-9.60)</td>
<td>5.98 (1.88-19.03)</td>
</tr>
<tr>
<td>Length of care with same doctor</td>
<td>0.94 (0.74-1.19)</td>
<td>0.86 (0.68-1.09)</td>
</tr>
<tr>
<td>Importance of seeing same doctor each visit</td>
<td>0.86 (0.56-1.30)</td>
<td>0.80 (0.51-1.25)</td>
</tr>
<tr>
<td>Establishment Index</td>
<td>1.03 (0.99-1.08)</td>
<td>1.05 (0.98-1.12)</td>
</tr>
<tr>
<td>Physician-patient concordance score</td>
<td>1.21 (1.05-1.39)</td>
<td>1.34 (1.04-1.72)</td>
</tr>
</tbody>
</table>

*Adjusted for patient characteristics (see article).
What Does “Trust” Mean?

- To what extent do you think the doctor understands why you came in today?
- How well do you think the doctor understood you today?
- To what extent did you and the doctor agree about the main problem or need today?
- To what extent did you and the doctor agree about what to do about the problem or need?

Thanks for Listening!

www.behavioraldiabetes.org

Which of the following statements is TRUE regarding patients with diabetes and medication adherence?

A. With poor adherence, patients are 4 times more likely to be hospitalized due to diabetes
B. Improved adherence to diabetes medications could save $5 billion annually
C. A 10% increase in adherence corresponds to a 0.05% decrease in hemoglobin A1C
D. Poor adherence to diabetes medications increases mortality risk by 2.5 times

Post-test Question 1

Which of the following statements is TRUE regarding patients with diabetes and medication adherence?

A. With poor adherence, patients are 4 times more likely to be hospitalized due to diabetes
B. Improved adherence to diabetes medications could save $5 billion annually
C. A 10% increase in adherence corresponds to a 0.05% decrease in hemoglobin A1C
D. Poor adherence to diabetes medications increases mortality risk by 2.5 times

Post-test Question 2

Please rate your ability to implement strategies to improve medication adherence in patients with diabetes?

A. Excellent
B. Good
C. Fair
D. Poor
A 57-year old woman with a 13 year history of T2DM visits you for her first diabetes education session. She has been successfully managed on metformin 1000mg/sitagliptin 50mg twice daily. In the past year, her A1C has jumped to 10.3%. She has private insurance and is the CFO of a large national bank. Six months ago, her PCP started her on 20 units basal insulin + 5 units bolus insulin with each meal. Her detailed blood sugar log shows a blood glucose range of 200-260 at all times of the day. A1C today is 10.6%. Which one of the following multidimensional barriers is most likely contributing to the patient's poor glycemic control?

A. Social Factors
B. Healthcare System
C. Therapy Related Factors
D. Economic Factors