Patient-focused Insulin Safety
Objectives

- State concerns related to safe insulin use
- Identify implementation strategies to reduce hypoglycemia
Health Consequences of Hypoglycemia

- Insulin 2nd most frequent reported drug for serious or disabling adverse events reported to FDA\(^1\)
- Seniors: Insulin 2\(^{nd}\) most common drug associated with ER visits\(^2\)

\(^1\)Moore, et al Arch Int Med, 2007

Poor Provider Response to Insulin-Induced Hypoglycemia in Hospitalized Patients

• Retrospective analysis of response to insulin-induced hypoglycemia
  – Mean BG at the time of dextrose administration for hypoglycemia was 52 mg/dL (range 31-68)
  – While insulin dose was held at the time of the hypoglycemic episode in all 52 patients, changes were subsequently made in the treatment of only 40% patients

VHA Insulin Subcommittee Goals

- Identify opportunities and drivers for future research, performance measures and clinical practice
- Develop consensus for Action Levels on inpatient blood glucose
- Facilitate development of standard evidenced-based protocols at medical centers
- Standardize data acquisition and reporting of hypoglycemia in ICUs and Acute Care for proper information capture
- Improve the quality and quantity of adverse reaction data related to insulin/hypoglycemia

Pogach & Aron
Committee Recommendations

- Action steps
  - Multidisciplinary Teams
  - Standardization of insulin protocols within facilities and across services
  - Look Alike, Sound Alike Insulins Identified as action plan
  - Special labeling U-500 Insulin
  - Pharmacy/Nutrition-Transport CPRS Linkages
  - Nutrition-insulin administration redesign
  - Education at transition points; inpatient to outpatient, starting insulin; emergency room
Challenges

- How to encourage formation of multidisciplinary teams to address insulin safety in inpatient and outpatient settings? Leadership roles for Nursing, Nutrition and Pharmacy?
- How to determine prevalence of serious hypoglycemia in the hospital, nursing home, ambulatory care and home settings?
- How to learn from ongoing root cause analyses or best practices?
- Implement IT solutions—from Class III to Class I
- How to document education of veterans at transition points?
Plans

- Incorporation of Inpatient Hypoglycemia into Guidelines
- Consideration of Directive vs. IL
- VACO Partnerships for Re-engineering Patient Care Services (FACs Hospitalists, Nutrition service, Endocrinology, Pharmacy Service); Office of Nursing Services; 10G (IPEC)

Pogach & Aron
Plans

- IPEC to issue ICU, hospital ward reports (under development). Continued development of “glucometrics”
- Consideration of continuous and weighted measures for glycemic control in ambulatory care setting (PCS, QUERI and OQP)
- Submission of templates to VHA IT
- Development of In-patient glycemia e-mail group using Collage

Pogach & Aron
Insulin Subcommittee Approach

- Determine what subgroups would benefit most from “tight” control of hyperglycemia in the hospital setting
  - e.g., SICUs, MICUs, non-acute Nursing Units
- Improve processes of care for delivery of insulin and coordination with nutrition
  - e.g. protocols for insulin infusions and subcutaneous injection; coordination with meals
- Metrics for hyperglycemia and hypoglycemia
  - Standardized definitions for monitoring and reporting

Pogach & Aron
Identification of Causes of Hypoglycemia

- Mismatch of insulin or oral medication with meals
- Too much insulin or oral medication given
- Unexpected NPO status
- Patient didn't eat expected meal
- Transport off nursing unit/ward
- Stacking of insulin
Insulin Subcommittee Workgroups

- IPEC to lead on data acquisition/monitoring in ICUs
- IPEC, COMFAG and Hospitalist FAC to lead on identifying protocols, and automating them
- Collaboration with VA ADERS (PBM) to:
  - standardize definitions and reporting
  - dissemination of root cause analyses of serious hypoglycemic related events

Pogach & Aron
Insulin Subcommittee Workgroups

- Nursing, Nutrition, and Pharmacy Services to recommend policy development on re-engineering of technology for:
  - data acquisition
  - basal, nutritional and correction insulin delivery
  - appropriate recognition and treatment of hypoglycemia
  - meal plan composition, food delivery,
  - CPRS safety features (e.g. links between pharmacy package and nutrition package).

Pogach & Aron
Protocol Development

- To be housed on the IPEC Website
- Web based data entry?
- Content will include:
  - VA Developed protocols for glycemic control
    - (e.g. Iowa City VAMC ICU protocol, Dayton VAMC/Yale insulin protocol, Puget Sound VA, etc)
  - Non-VA Web link resources (with disclaimer)
    - American Association of Clinical Endocrinologists
      - [www.aace.com](http://www.aace.com)
    - Society of Hospital Medicine
      - [www.hospitalmedicine.org/ResourceRoomRedesign/GlycemicControl.cfm](http://www.hospitalmedicine.org/ResourceRoomRedesign/GlycemicControl.cfm)

Pogach & Aron
INSULIN ASPART INJ

**Display Restrictions/Guidelines**

**Dosage / Rate**
- **CORRECTION ALGORITHM**
- ENTER DOSE IN UNITS OF 100UNIT/ML

**Route**
- SUBCUTANEOUS
- INTRAMUSCULAR
- INTRAVENOUS
- INTRA-ARTICULAR

**Schedule**
- Q6H
- Q7DAYS
- Q8H
- QAM
- QAM AFTER-BREAKFAST
- QAM BEFORE-BREAKFAST
- QAM WITH-BREAKFAST
- QDAY
- QDAY AC
- QDAY BEFORE-LUNCH
- QDAY WITH-LUNCH
- QDAY WM
- QHOUR
- QHS
- QHS PRN
- QHS WITH-SNACK
- QID

**Comments:** GIVE FOR BLOOD GLUCOSE OF 150-199: 1 UNIT; 200-249: 2 UNITS; 250-299: 3 UNITS; 300-349: 4 UNITS; >349: 5 UNITS.

**Give additional dose now**: [ ]

**Priority**: ROUTINE

**Accept Order**

**Quit**
INSULIN ASPART INJ

Display Restrictions/Guidelines

<table>
<thead>
<tr>
<th>Dosage / Rate</th>
<th>Complex</th>
<th>Route</th>
<th>Schedule</th>
<th>[Non-standard?]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORRECTION ALGORITHM</td>
<td></td>
<td>SUBCUTANEOUS</td>
<td>Q6H</td>
<td>PRN</td>
</tr>
<tr>
<td>ENTER DOSE IN UNITS OF 100UNIT/ML</td>
<td></td>
<td>INTRAMUSCULAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTRAVENOUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTRA-ARTICULAR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Comments: GIVE FOR BLOOD GLUCOSE OF 150-199: 1 UNIT; 200-249: 3 UNITS; 250-299: 5 UNITS; 300-349: 7 UNITS; >349: 8 UNITS.
<table>
<thead>
<tr>
<th>Dosage / Rate</th>
<th>Complex</th>
<th>Route</th>
<th>Schedule</th>
<th>(Non-standard?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORRECTION ALGORITHM</td>
<td></td>
<td>SUBCUTANEOUS</td>
<td>Q6H</td>
<td>PRN</td>
</tr>
<tr>
<td>ENTER DOSE IN UNITS OF 100UNIT/ML</td>
<td></td>
<td>SUBCUTANEOUS</td>
<td>Q6H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTRAMUSCULAR</td>
<td>Q7DAYS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTRAVENOUS</td>
<td>Q8H</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>INTRA-ARTICULAR</td>
<td>QAM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QAM AFTER-BREAKFAST</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QAM BEFORE-BREAKFAST</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QAM WITH-BREAKFAST</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QDAYS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QDAYS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QDAYS BEFORE-LUNCH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QDAYS WITH-LUNCH</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QDAYS WM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QHOURS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QHOURS</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QHOURS PRN</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QHOURS WITH-SNACK</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>QID</td>
<td></td>
</tr>
</tbody>
</table>

Comments: GIVE FOR BLOOD GLUCOSE OF 150-199: 2 UNITS; 200-249: 4 UNITS; 250-299: 7 UNITS; 300-349: 10 UNITS; >349: 12 UNITS.
Limitations

- Local VA facilities will need to be encouraged to do a local needs assessment
- Currently the IPEC Clinical Tools website is difficult to access
- Non-VA web resources may contain information that is not reliable
Systems Redesign: Nursing, Nutrition, and Pharmacy Services

- Change PBM formularies to allow for glargine/detemir in the inpatient setting
- Short acting insulin for administration at the time of meals
- Consistent carbohydrate (CHO) meal plan orders, e.g. 60, 75, 90 Gm CHO
- CPRS Re-engineering
  - Linkage between Pharmacy and Nutrition Packages; alert for NPO or change in orders
  - Flag for patients who are type 1 (ketosis prone)
  - Glucose monitor-CPRS interface
Immediate Next Steps

- Discussion Among Field Advisory Committees, especially:
  - Endocrinology, Nutrition, Nursing
  - Chiefs of Medicine, Surgery
  - Hospitalists
- Encourage a local “champion” to drive local improvement
- Requests to IT/CPRS

Pogach & Aron
Perceived Barriers to Management of Inpatient Hyperglycemia

- Knowing what insulin type or regimen works best
- Unpredictable timing of patient procedures
- Risk of causing patient hypoglycemia
- Knowing how to adjust insulin
- Unpredictable changes in patient diet and mealtimes
- Knowing best options to treat hyperglycemia
- Glucose management not adequately addressed on rounds
- Patient not in hospital long enough to control glucose adequately
- Lack of guidelines on how to treat hyperglycemia
- Preferring to defer management to outpatient care or to another specialty
- Knowing how to start insulin
- Knowing when to start insulin

General Principles

- Pt’s home regimen should be continued or may need to be modified to improve glycemic control.
- Caloric intake is controlled in hospital
- Insulin requirements ↑ with stress and ↓’d physical activity
- In future, more inpts will be treated with insulin
Multiple Daily Injections (MDI)  
NPH + Regular

NPH at AM and HS + Regular AC
Insulin Tactics
Multiple Daily Injections (MDI)
NPH + Mealtime Aspart

NPH at AM and HS + Aspart AC
Physiologic Insulin Delivery

Glargine at HS + Premeal Aspart

Insulin Effect

Aspart
Glargine

B
L
D
HS
All these regimens require:

- On-time consistent delivery of basal insulin
  - NPH a bkfst and @HS, OR glargine/detemir insulin q 24 h (same time)
- Synchronization of CBGM, prandial/mealtime insulin, and meals (or tube feeds)
  - CBGM → SQ insulin → meal
  - Regular insulin 30” ac, or lispro/aspart insulin 10” ac
  - On-time meal delivery
- Education of providers and patients about insulin
Inpatient Hypoglycemia
Nursing Journal Club Review

By
ONS Metabolic Syndrome/Diabetes FAC
2009
Objectives

- Review current evidence based findings for inpatient glycemic target levels
- Analyze the evidence based literature on hypoglycemia prevention
Conditions Creating High Risk for Hypoglycemia in Patients Receiving Scheduled Insulin

- Sudden NPO status or decreased oral intake
- Enteral feeding discontinued
- TPN or iv dextrose discontinued
- Premeal insulin given and meal not eaten
- Unexpected transport from nursing unit after rapid-acting insulin given
- Reduction in corticosteroid dose

Order:
Standing Orders for Hypoglycemia
   If BG is 50-70 mg/dl:
   1) Treat with 15 grams of carbohydrates (three 5 glucose tabs or non-diet soda) OR, if patient is unable to swallow, administer 25ml of 50% dextrose IV or, if no IV access, glucagon lmg IM and insert saline lock.
   2) Check BG in 15 minutes, and if not above 70 mg/dl, repeat treatment.
   3) If standing dose of basal and/or prandial insulin is due, call physician to confirm dose(s).

   If BG is less than 50 mg/dl:
   1) Treat with 30 grams of carbohydrates (8oz OJ or non-diet soda) OR, if patient is unable to swallow, administer 50ml of 50% dextrose IV or, if no IV access, glucagon lmg IM and insert saline lock.
   2) Check BG in 15 minutes:
      If repeat BG 50-70 mg/dl, follow procedure in #1.
      If repeat BG less than 50 mg/dl, administer 50ml of 50% dextrose IV* and call physician.
   3) If standing dose of basal and/or prandial insulin is due, call physician to confirm dose(s).
<table>
<thead>
<tr>
<th>Inpt. Med.</th>
<th>Order</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DEXTROSE 50% INJ, SOLN</strong></td>
<td>25-50 MLS OF 50% IV PRN If pt unable to swallow &amp; BG 50-70, give D50W 25ml IV, check BG in 15 min, MRX1 if&lt;70. If BG&lt;50 give D50W 50ml IV, check BG in 15 min, MRX1 if still&lt;50 and call HO. If scheduled insulin dose due call HO to check dose. <em>UNSIGNED</em></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCOSE TAB, CHEWABLE</strong></td>
<td>15-30GM PO PRN If BG&lt;50, give 6 tablets or 8oz juice or 8oz non-diet soda. Check BG in 15 min, if still&lt;50 give D50W 50ml IV and call HO. If BG 50-70 give 3 tablets or 4oz juice or 4oz soda, check BG in 15 min, MRX1 if BG 50-70. <em>UNSIGNED</em></td>
<td></td>
</tr>
<tr>
<td><strong>GLUCAGON INJ 1MG/VIAL</strong></td>
<td>1 ML IM PRN If BG&lt;70 and pt is unable to swallow and does not have IV access, give 1mg IM and insert saline lock. Check BG in 15 min, then follow D50W IV orders. <em>UNSIGNED</em></td>
<td></td>
</tr>
<tr>
<td><strong>METHOCARBAMOL TAB</strong></td>
<td>750MG PO QID PRN</td>
<td>Start: 02/17, 15:30  Stop: 04/10, 10:00</td>
</tr>
<tr>
<td><strong>COMPONDED RX MISCELLANEOUS</strong></td>
<td>APPLY SMALL AMOUNT TOP BID PRN Hydrocortisone cream / pt to use own supply</td>
<td></td>
</tr>
<tr>
<td><strong>ACETAMINOPHEN TAB</strong></td>
<td>650MG PO Q4H PRN</td>
<td>Start: 01/26, 17:38  Stop:</td>
</tr>
</tbody>
</table>
NPO Patients

- If the patient is made NPO:
  Give \( \frac{1}{2} \) of the basal insulin dose and **HOLD** the mealtime insulin, and Continue the correction dose. Monitor BG Q 6 hours and give corrective insulin as needed. Resume the previous regimen once the patient is eating again.
CASE

• JT is a 70 yo man with DM and CAD hospitalized with CHF. He is put on an sliding scale regimen with R insulin (201-250  4 units; 251-300 6 units; 301-350 8 units; 351-400 10 units, >400 10 units).
• His CBGM at 0530 is 450 mg/dL. He gets 12 units R.
• His CBGM at 0830 is 385 mg/dL. He gets 10 units R.
• His CBGM at 1130 is 252 mg/dL. He gets 6 units R.
• At 1500 he feels dizzy, shaky, and sweaty. His CBGM is 40 mg/dL.
Problem

- Giving R insulin q 3 hrs (peaks in 2-4 hrs and lasts 6-8 hrs) by sliding scale leads to “stacking” of insulin & hypoglycemia.
Solution

- Eliminate insulin sliding scale.
- Introduce concepts of basal and prandial (mealtime) insulin.
Maintaining physiologic insulin delivery in the hospital

- Basal insulin
- Mealtime insulin
- Supplemental or “stress” insulin
### Problem: Managing DM with Sliding Scale Insulin Only

<table>
<thead>
<tr>
<th>Problems</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactive, not proactive</td>
<td>Dosing based on inadequacy of previous dose</td>
</tr>
<tr>
<td>Goal is hyperglycemia</td>
<td>Starts at 200mg/dl</td>
</tr>
<tr>
<td>Does not account for previous regimen</td>
<td>“one size fits all”</td>
</tr>
<tr>
<td>Rarely reevaluated</td>
<td>Pt’s glucose control is rarely reevaluated</td>
</tr>
<tr>
<td>Little to no clinical thinking</td>
<td>Without clinical basis, endpoints, lack critical thinking</td>
</tr>
<tr>
<td>No basal insulin</td>
<td>Fasting, postprandial, nocturnal, and inter-meal glucose control</td>
</tr>
</tbody>
</table>
Basal-Bolus Insulin Regimen is Preferred Over Sliding Scale Insulin in the Management of Non-Critically Ill, Hospitalized Patients with Type 2 Diabetes

- Basal bolus insulin with glargine + glulisine
- Sliding scale insulin
  * $P < 0.01$
  †$P < 0.05$

Solution

- Eliminate insulin sliding scale.
- Introduce concepts of basal and prandial insulin.
- Can add a “supplemental insulin scale” to standing meal insulin (this is different from managing DM using sliding scale only)
  - Supplemental insulin = “stress” insulin
  - Short acting insulin given before meals = meal insulin + supplemental insulin
Solution

- Standardization of documentation
  - If doses of meds are omitted or changed, physician should be notified & a brief note made for documentation.
  - We may need to work on better ways of documenting CBGMs and insulin doses.
Solution

- Patient empowerment
  - Patients on intensive insulin regimens should be able to manage them in the hospital (QA issues to be worked out).
  - Patients should be able to remind RNs if their insulin doses are due.
Components for Safe Diabetes Self-Management in the Hospital

- Do simultaneous lab-measured capillary or venous blood test and pt-performed CBGM. CBGM should be within 15% of lab value.
- Demonstration that the pt can self administer insulin accurately.
- Pt is alert and able to make appropriate decisions on insulin dose.
- All insulin administered by pt and nurse is recorded in the medical record.
- Physician writes order that the patient may perform insulin self-management

Should We Add to or Expand Our Admission Diabetes Assessment?

- Document type, duration of DM, and current Rx
- Assess pt’s need for diabetes & nutrition education
- Assess of patient’s “competency” to perform SMBG
- Determine need for meter/meter teaching
- Assess patient’s “competency” to manage diabetes medications and/or insulin
- Check recent A1c
Transition to Discharge

- Does patient have a meter for home use? If not arrange for one
- Does patient know how to inject insulin and how to prevent and to treat HYPOGLYCEMIA?
- Is the patient clear about the diabetes therapy after D/C? Arrange for a home care f/u visit to assure patient safety
- Does the patient need more diabetes education? Refer for further education
- Does the patient have appropriate outpatient F/U appointment with primary care or specialist?
What does it take to achieve excellent glycemic control for hospitalized DM patients?
Predictors of CV Death

Hazard Ratio (HR Lower CL, HR Upper CL) P Value

- Hypoglycemia: 4.042 (1.449, 11.276) 0.01
- HbA1c: 1.213 (1.038, 1.417) 0.02
- HDL: 0.699 (0.536, 0.910) 0.01
- Age: 2.090 (1.518, 2.877) <0.01
- Prior Event: 3.116 (1.744, 5.567) <0.01

Duckworth et al. VADT. ADA June, 2008
Intensive Control Patient Safety Concerns in Ambulatory Care

- Generalization to individuals with multiple complex conditions who would have been excluded from studies
- Multiple medications in persons with co-existing illness
- No system monitoring system for hypoglycemia
- A1c of 7% can represent range of 6.5 to 7.5% in practice in commercial laboratories:
- Confusion of measures with guidelines
Practicum For RNs and LPNs Taking Care of Patients With Diabetes

Module 1: Basic Facts about Diabetes
PBM Bulletin on Glyburide

- 2\textsuperscript{nd} bulletin
- Use of glyburide in pts >65 yoa and elevated creatinine
- Compared change from 1\textsuperscript{st} bulletin
ADA/EASD Consensus Algorithm for Management of Type 2 Diabetes

Diagnosis

Lifestyle Intervention + Metformin

A1C ≥7%

Consider for A1C >8.5% or hyperglycemic symptoms

Add Basal Insulin
- Most effective

A1C ≥7%

Add Sulfonylurea
- Least expensive

A1C ≥7%

Add Glitazone
- No hypoglycemia

A1C ≥7%

Add Sulfonylurea

Intensify Insulin

A1C ≥7%

Add Glitazone*

A1C ≥7%

Add Basal Insulin

A1C ≥7%

Add Basal or Intensify Insulin

A1C ≥7%

Intensive insulin + Metformin +/- Glitazone

A1C tests
Every 3 mo if A1C >7%:
Every 6 mo if A1C <7%

Insulin Requirements in Type 2 Diabetes

Pharmacological Therapy

- **Sulfonylureas/Meglitinides:** stimulate insulin secretion
- **Biguanide (metformin):** reduces hepatic glucose production
- **Alpha-glucosidase Inhibitors (acarbose):** slow carbohydrate absorption
- **Insulin:** promotes glucose disposal and inhibits hepatic glucose production
- **Incretins:** increase insulin, gastric emptying, decrease glucagon, increase satiety
- **Amylin:** slows gastric emptying, suppresses glucagon
- **Thiazolidinediones (pioglitazone):** increase peripheral glucose utilization
- **Alpha-glucosidase Inhibitors (acarbose):** slow carbohydrate absorption
Exercise/Activity: Guidelines

- Always warm up and cool down
- Don’t inject insulin into a limb that will be exercising
- Avoid becoming exhausted
- Don’t exercise in extreme weather
Exercise/Activity: Guidelines

- Hypoglycemia - carry fast-acting CHO, medical ID
- Hyperglycemia → DKA - type 1, don’t exercise if glucose >300 mg/dl
- Sensory peripheral neuropathy
  - Wear well fitted footwear
  - Examine feet closely
- Retinopathy - avoid exercises that put pressure on eyes.
## Putting it Together

Week Starting: November 9

<table>
<thead>
<tr>
<th>Day</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
<th>Bedtime</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun</td>
<td>84</td>
<td>77</td>
<td>114</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Mon</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tues</td>
<td>150</td>
<td>55</td>
<td>200</td>
<td>180</td>
<td>walked</td>
</tr>
<tr>
<td>Wed</td>
<td>140</td>
<td>60</td>
<td>180</td>
<td>160</td>
<td>walked</td>
</tr>
<tr>
<td>Thurs</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fri</td>
<td>140</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Insulin regimen:** Regular and NPH before breakfast and dinner
People don’t follow clinicians’ advice and recommendations

- 50% don’t follow long term medication regimens
- > 80% don’t follow advice to change health behaviors
- 20 to 30% don’t complete curative medication regimens

(Hayes et al, 1979; Meichenbaum and Turk, 1987; DiMatteo et al, 1994; Clark & Becker, 1998)
The Greyhound Paradigm

Leave the driving to us
The Hertz Paradigm

Let us put you in the driver’s seat
Healthy eating
Being active
Monitoring
Taking medication
Problem-solving
Healthy coping
Reducing risks

Discover and discuss the patient’s conviction

- How important is this change to you?
- How committed are you to making this change?
Assessing Conviction: Scaling

“On scale of 0 - 10, how convinced are you that it is important to increase your activity level?”

Responses

“Oh, a 4.”
“I’m curious, what led you to say 4 and not zero”? “What would have to happen to make it to a 6?”
Discover and discuss the patient’s confidence

- “How confident are you that you can make this change?”
- “How likely do you think it is that you will make this change?”
Assessing Confidence: Scaling

“On scale of 0 - 10, how confident are you that you can exercise regularly?”

Responses

“Oh, a 6.”
“What led you to rate your confidence a 6?”
“What would you need to get to a 7 or 8?”
“What could I do to help you to feel more confident?”
Questions?
Discussion

[Image of a stick figure scratching their head]