Transition of Care for Hospitalized Patients With Diabetes

Module C
Learning Objectives

• Differentiate patients with stress hyperglycemia, previously undiagnosed diabetes, and diabetes out of control
• Identify patients who may require intensification of their diabetes regimen at discharge
• Provide individuals who have diabetes with appropriate skills and connections to outpatient care and follow-up to ensure positive outcomes
29.1 million people or 9.3% of the US population have diabetes

- Diagnosed: 21 million
- Undiagnosed: 8.1 million

Estimated diabetes costs in the United States (2012)

- Total (direct and indirect): $245 billion
  - Direct medical costs: $176 billion (2.3x higher than for people without diabetes)
  - Indirect (disability, work loss, premature death): $69 billion

Prevalence of Diabetes in Hospitals Is High and Increasing

Number of discharges with diabetes as first-listed diagnosis: 635,000

Average length of stay: 4.6 days

How many patients discharged from your hospital have diabetes?

Prevalence of Hyperglycemia/Hypoglycemia in the Hospital Setting

- Study evaluating ~50 million point-of-care BG levels
  - ~13 million ICU
  - ~37 million non-ICU

<table>
<thead>
<tr>
<th>BG Levels</th>
<th>ICU</th>
<th>Non-ICU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean BG</td>
<td>167 mg/dL</td>
<td>166 mg/dL</td>
</tr>
<tr>
<td>Hyperglycemia &gt;180 mg/dL</td>
<td>32.2%</td>
<td>32%</td>
</tr>
<tr>
<td>Hypoglycemia &lt;70 mg/dL</td>
<td>6.3%</td>
<td>5.7%</td>
</tr>
</tbody>
</table>

BG = blood glucose; ICU = intensive care unit.
Causes of Hospital-related Hyperglycemia

- Known diabetes (uncontrolled, undertreated)
- Undiagnosed diabetes
- Stress hyperglycemia (transient physiologic response to the stress of acute illness or injury)
- Iatrogenic (corticosteroids, catecholamines, parenteral and enteral nutrition, reduced exercise)
Case Study:
Mrs. Perez, 83-year-old Hispanic Female

Chief complaint: chest pain
- ECG: NSR with HR 94 bpm
- 85mm Hg/palp
- Glucose 459 mg/dL

Past medical history
- Type 2 diabetes mellitus, uncontrolled
- Hypertension
- Hypercholesterolemia
- Coronary artery disease
- Prior history of bypass surgery

*Patient was sent to the ED for further assessment of her problem*
- ECG and cardiac enzymes x 1 were negative
- Current BP 98/60 mm Hg; BP medications are on hold
- Current glucose: 376 mg/dL with insulin infusion initiated
- Transferred to the critical care unit for treatment and further observation

BP = blood pressure; ED = emergency department; ECG = electrocardiogram; HR = heart rate; NSR = normal sinus rhythm.
"Care transitions is a team sport, and yet all too often we don't know who our teammates are, or how they can help."

Eric A. Coleman, MD, MPH

Who are your teammates?
Multidisciplinary Approach to Managing Inpatient Hyperglycemia Across Patient Transitions

- Hospitalist/Endocrinologist
- Nurse
- Patients/Their family
- Pharmacist
- Care Coordinator
- Diabetes Educator/Dietition
- Primary Care Physician
What Is “Coordination of Care”? 

• Occurs at multiple levels
  – Within settings
    • Primary care ↔ specialty care
    • ICU ↔ ward
  – Between settings
    • Hospital ↔ subacute facility
    • Ambulatory clinic ↔ Long-term care facility
    • Hospital ↔ home
  – Across health states
    • Curative care ↔ palliative care/hospice
    • Personal residence ↔ assisted living
What Is “Transition of Care”?

• A set of actions designed to ensure the coordination and continuity of health care as patients transfer between different locations or different levels of care within the same location

• Based on a comprehensive care plan and availability of well-trained practitioners who have current information about the patient's goals, preferences, and clinical status

• Includes:
  – Logistical arrangements
  – Education of the patient and family
  – Coordination among the health professionals involved in the transition

Care Coordination for Patients With Hyperglycemia/Diabetes

- Create a collaborative team
- Identify patients with hyperglycemia/diabetes
- Develop an individualized treatment plan for each patient
- Determine transition and discharge strategy
- Monitor progress

Care Coordination Beginning With Admission

Identify hyperglycemic patients and patients with diabetes
- Care coordination team must be prepared for next steps for patients with newly recognized hyperglycemia

Create a collaborative team
- Physicians, nurses, diabetes educators, dietitians, case/care managers, pharmacists, and discharge planners

Fully assess patients
- Learn about patients’ lifestyles; access to health care services; available support; culture; health literacy; knowledge of diabetes and treatment recommendations; and financial stability (including ability to pay for SMBG supplies, medications, and healthful foods)

Develop an individualized plan
- Include family members, adopt a patient-centered approach
- Planning and implementing protocols for BG control are critical steps

SMBG = self-monitoring of blood glucose.
Coordination of Care

- Interdisciplinary team approach with patient/family-centered model across care continuum
- Collaborating closely with other disciplines
- Establishing means of communicating the status of diabetes
- Self-management education, plan of care, and medication reconciliation to next provider
- Empowering patient and caregivers to actively participate in care from hospital to home

Use of Glycemic Management Team Improves Outcomes

Impact of a dedicated diabetes team approach to hospital glycemic management and transition to ambulatory care

- Improving inpatient glycemic control before discharge \(^1,^2\)
- Improving A1C levels after discharge\(^1\)
- Decreasing length of stay\(^1,^3\)

Diabetes “Experts” Play Key Role

Interdisciplinary teams can facilitate

- Comprehensive staff diabetes education
- BG data surveillance
- Hypoglycemia screening and monitoring protocols
- Aggressive hyperglycemia insulin protocols
- Smooth transitions from hospital to home
- Safety of insulin therapy

### Medications
- Glipizide 10 mg po bid
- Metformin 1 g po bid
- Sitagliptin 100 mg qd

### Laboratory Findings
- **BG:** 459 mg/dL
- **BUN:** 18 mg/dL
- **Creat:** 0.6 mL/min
- **GFR:** 58 mL/min/1.73 m²
- **A1C:** 8.9%

### Vital Signs
- **BP:** 98/60 mmHg
- **HR:** 94 bpm
- **BMI:** 25 kg/m²
Admissions Checklist for Patients With Diabetes

- Clearly identify diagnosis of diabetes in the medical record
- Order BG monitoring
  - Results should be available to all members of health care team
- Establish a plan for treating hypoglycemia
  - Episodes of hypoglycemia should be tracked
- Obtain A1C level if results of testing in previous 2–3 months not available
- Establish BG targets and implement a plan to achieve them using appropriate therapy
- Develop diabetes education plan including “survival skills education”

Transitions of Care: Hospital Setting

Challenges

- Care is complex
- Care is uncoordinated
- Information is often not available to those who need it when they need it
- Patients often do not get care they need or get care they don’t need
Transition Issues Dramatically Impact Patient Care

- Patient
  - ED
  - ICU
  - Inpatient
  - Skilled nursing facility
  - Assisted living facility

OUTPATIENT:
- Home
- Provider
- Specialty
- Pharmacy
- Case Manager
- Caregiver

Ineffective Transitions Lead to Poor Outcomes

Wrong treatment

Delay in diagnosis

Severe adverse events

Patient complaints

Increased health care costs

Increased length of stay

Medication Safety: Hypoglycemia

- Causes 5 million ED visits annually, with 25% of the visits resulting in hospital admission
- Severe hypoglycemia <40 mg/dL is associated with increased risk of death. Whether it is a marker of poor prognosis or an independent cause for mortality is inconclusive
- It is associated with increased length of stay
- Tighter glucose control in the hospital setting increases the risk of severe hypoglycemia

Why Should Oral Hypoglycemic Drugs Be Discontinued Upon Hospitalization?

- Insulin is cornerstone of inpatient glycemic management
- Usually oral medications are discontinued upon hospitalization because:
  - Difficult to titrate
  - Patients may be NPO
  - Contraindications may exist during acute illness
    - eg, metformin and renal impairment, use of contrast media; TZDs and heart failure

NPO = nothing by mouth; TZDs = thiazolidinediones.
Use of Insulin Is Unsafe Without Routine Glycemic Protocols

• Insulin management in the hospital setting is complex due to factors affecting BG

• Physicians do not have the time, or in some cases, the expertise to manage all patients on complex insulin regimens, insulin pumps or other aspects of complex daily issues related to glycemic care

• AACE and ADA recommend glycemic expert providers to manage diabetes care and oversee patient safety

• Advanced practice nurses are often utilized to manage diabetes care

Medication Errors Due to Inadequate Medication Reconciliation

Medication Errors

- Occurred at time of discharge
- Occurred during the patient's admission to the facility
- Occurred during the patient's transition of transfer to another level of care

Effective medication reconciliation at each hospital transition point can help reduce errors.

Using Medication Reconciliation to Prevent Errors

Medication reconciliation: process of comparing patient’s current medication orders to medications patient has been receiving

Should be done at every transition of care in which:

- New medications are ordered
- Existing medication orders are rewritten

Transitions in care requiring medication reconciliation include changes in:

- Setting
- Service
- Practitioner
- Level of care

Initiating IV Insulin Infusion

• Optimize care by initiating IV insulin infusion according to established protocol
• Features of a good protocol include:
  – Effective with minimal risk of hypoglycemia
  – Easily used in all hospital units, including any outpatient unit
  – Easily prescribed
  – Easily implemented
  – Cost-effective

ICU:
Treatment goal
BG <140-180 mg/dL

IV = intravenous.
Case Study: Critical Care Course

Continuous Insulin Infusion

**BG x 24 hours:**
105–459 mg/dL

**TDD:** 45 units

**BG x last 12 hours:**
105–167 mg/dL

**Average insulin drip rate:**
1.25 units/hour

Patient will start eating.

*How will you transition this patient to SC insulin?*

24 hours after admission, Mrs. Perez’s BP is stable, she denies chest pain, and all cardiac enzymes x 3 are negative. Patient has orders to transfer out of critical care.

SC = subcutaneous; TDD = total daily dose.
Steps to Transitioning From Insulin Infusion to SC Insulin

**Is patient stable enough for transition?**
- Contraindications: hypotension, active sepsis, vasopressors, intubation

**Does this patient need a transition to scheduled SC insulin?**
- **Yes:** all T1DM, T2DM on insulin as outpatient, T2DM with recent mean infusion rate of ≥0.5 U/kg
- **No:** T2DM with insulin infusion rate <0.5 U/kg, stress hyperglycemia or previously unrecognized DM if infusion rate <1 U/hour or A1C near normal

If transition needed, calculate an insulin TDD. TDD is an estimate of 24-hour insulin requirement when patient is receiving full nutrition.

Construct a regimen tailored to patient’s nutritional situation, building in safeguards for changes in nutritional intake.

Be sure to give SC insulin BEFORE the infusion stops.

Converting From IV to SC Insulin

Endocrine Society Guidelines conservatively recommend the following:

• TDD is estimate of 24-hr insulin requirement when patient is receiving full nutrition
• Establishing the 24-hour insulin requirement by averaging the IV insulin dose required over the previous 6–8 hours
• Using a fraction of that (ie, 75%–80%) as the TDD of SC insulin
  – Giving half of that as basal and dividing the other half among short- or rapid-acting insulin before meals

Clinical trial data support using 80% of the TDD to achieve 80–140 mg/dL

SC Insulin Administration

“Scheduled”

(Bslading-scale insulin only uses this component)

Basal + Nutritional + Correction = Total daily insulin needs

Correction

Basal + Nutritional

Long-acting insulin

Rapid-acting insulin

Case Study: SC Insulin Regimen
TDD: 45 Units

- Basal insulin ~ 18 units qhs
  - (calculated from 50% of TDD)
  - Patient came initially with severe hyperglycemia with higher insulin requirements
  - Last 12 hours of CII average rate was 1.25 units/hour
- Prandial insulin ~6 units with meals plus correction scale
  - Remaining 20 units from TDD not used for basal insulin, divided by 3 for 3 meals
  - Add correction scale
Patients Who May Require Intensification of Their Diabetes Regimen

- Long-standing diabetes related to declining beta-cell function
- OADs maximized; A1C level >8%
- Basal insulin already maximized; A1C level >8%
  - Consider postprandial hyperglycemia
- High dose glucocorticoid usage

OADs = oral antidiabetic drugs.
Challenges in Transition From Inpatient to Outpatient Care for Patients on Insulin

- Comfortable with SMBG before discharge: 100%
- Comfortable with doing SMBG at home: 100%
- Instruction in insulin administration: 100%
- Instruction in hypoglycemia treatment: 100%
- Written insulin instructions at discharge: 96%
- Patient was discharge on glucocorticoids: 85%
- Insulin instructions were easy to understand/follow: 81%
- Insulin plan at discharge: 81%
- Insulin plan reviewed at discharge: 60%
- If on steroid taper, specific instruction given to adjust insulin: 45%
- Instruction to SMBG: 38%

Challenges in Transition From Inpatient to Outpatient Care for Patients on Insulin

Postdischarge Prescription and Glucose Management Issues: Patients Responding Yes (%)

- Need to go to the pharmacy for diabetes medication or supplies since discharge: 57%
- Problems obtaining medications: 21%
- Patient perception that glucose control was good: 79%
- Physician perception that glucose control was good: 53%
- Blood glucose <70 mg/dL after discharge: 30%
- If hypoglycemia tried to contact someone for assistance: 15%
- Blood glucose levels >300 mg/dL: 49%
- Given a contact specifically for diabetes-related questions after discharge: 74%
- If given contact, did you need to contact them: 17%
- Had follow-up appointments scheduled for your prior to discharge: 77%

Case Study: Considerations for Discharge

Years with diabetes
- >20 years with type 2 diabetes on OADs

Medication compliance
- Takes her OADs when she remembers on most days of the week

BG monitoring
- Daily but unable to recall frequency.
- BG results are ~120–180 mg/dL in the morning and sometimes ~200 mg/dL in the evenings

Hypoglycemia
- Occasional hypoglycemia BG <70 mg/dL, especially when patient skips meals
### T2DM Anti-hyperglycemic Therapy: General Recommendations

#### Healthy eating, weight control, increased physical activity

- **Metformin**
  - Efficacy: high
  - Low risk
  - Glycemia: neutral / loss
  - GI: lactic acidosis
  - Low

If needed to reach individualized HbA1c target after ~3 months, proceed to 2-drug combination (order not meant to denote any specific preference):

<table>
<thead>
<tr>
<th>Metformin</th>
<th>Sulfonylurea</th>
<th>Thiazolidinedione</th>
<th>DPP-4 Inhibitor</th>
<th>GLP-1 receptor agonist</th>
<th>Insulin (usually basal)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>high</td>
<td>high</td>
<td>intermediate</td>
<td>high</td>
<td>highest</td>
</tr>
<tr>
<td></td>
<td>moderate risk</td>
<td>low risk</td>
<td>low risk</td>
<td>low risk</td>
<td>high</td>
</tr>
<tr>
<td></td>
<td>gain</td>
<td>edema, HF, tx’s</td>
<td>neutral</td>
<td>neutral</td>
<td>high</td>
</tr>
<tr>
<td></td>
<td>hypoglycemia</td>
<td>high</td>
<td>rare</td>
<td>GI</td>
<td>high</td>
</tr>
</tbody>
</table>

If needed to reach individualized HbA1c target after ~3 months, proceed to 3-drug combination (order not meant to denote any specific preference):

<table>
<thead>
<tr>
<th>Metformin</th>
<th>Sulfonylurea +</th>
<th>Thiazolidinedione +</th>
<th>DPP-4 Inhibitor +</th>
<th>GLP-1 receptor agonist +</th>
<th>Insulin (usually basal) +</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TZD</td>
<td>SU</td>
<td>DPP-4</td>
<td>SU</td>
<td>TZD</td>
</tr>
<tr>
<td>or</td>
<td>DPP-4-I</td>
<td>or</td>
<td>or DPP-4-1</td>
<td>or GLP-1-RA</td>
<td>or GLP-1-RA</td>
</tr>
<tr>
<td>or</td>
<td>GLP-1-RA</td>
<td>or</td>
<td>or GLP-1-RA</td>
<td>or Insulin</td>
<td>or Insulin</td>
</tr>
<tr>
<td>or</td>
<td>Insulin</td>
<td>or</td>
<td>or Insulin</td>
<td>or Insulin</td>
<td>or Insulin</td>
</tr>
</tbody>
</table>

If combination therapy that includes basal insulin has failed to achieve HbA1c target after 3-6 months, proceed to a more complex insulin strategy usually in combination with 1-2 non-insulin agents:

- **Insulin**
  - Multiple daily doses
Glycemic Control Algorithm

LIFESTYLE MODIFICATION
(Including Medically Assisted Weight Loss)

ENTRY A1c < 7.5%

MONOTHERAPY*
- Metformin
- GLP-1 RA
- DPP4-i
- AG-i
- SGLT-2 **
- TZD
- SU/GLN

If A1c > 6.5% in 3 months add second drug (Dual Therapy)

ENTRY A1c ≥ 7.5%

DUAL THERAPY*
- GLP-1 RA
- DPP4-i
- TZD
- ** SGLT-2
- Basal insulin
- Colesevelam
- Bromocriptine QR
- AG-i
- SU/GLN

If not at goal in 3 months proceed to triple therapy

TRIPLE THERAPY*
- GLP-1 RA
- DPP4-i
- TZD
- ** SGLT-2
- Basal insulin
- Colesevelam
- Bromocriptine QR
- AG-i
- SU/GLN

If not at goal in 3 months proceed to or intensify insulin therapy

ENTRY A1c > 9.0%

NO SYMPTOMS
- DUAL THERAPY
- TRIPLE THERAPY

SYMPTOMS
- INSULIN ± OTHER AGENTS

ADD OR INTENSIFY INSULIN

* Order of medications listed are a suggested hierarchy of usage
** Based upon phase 3 clinical trials data

LEGEND
- Few adverse events or possible benefits
- Use with caution

# Profiles of Antidiabetic Medications

<table>
<thead>
<tr>
<th>HYPO</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Neutral</th>
<th>Moderate/Severe</th>
<th>Moderate to Severe</th>
<th>Neutral</th>
<th>Neutral</th>
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</thead>
<tbody>
<tr>
<td>WEIGHT</td>
<td>Slight Loss</td>
<td>Neutral</td>
<td>Loss</td>
<td>Gain</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Gain</td>
<td>Gain</td>
<td>Loss</td>
<td>Loss</td>
</tr>
<tr>
<td>GI Sx</td>
<td>Moderate</td>
<td>Neutral</td>
<td>Moderate</td>
<td>Neutral</td>
<td>Moderate</td>
<td>Mild</td>
<td>Moderate</td>
<td>Neutral</td>
<td>Neutral</td>
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<td>Moderate</td>
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<tr>
<td>CHF</td>
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<td>Neutral</td>
<td>Neutral</td>
<td>Moderate</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>CVD</td>
<td>Benefit</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Safe</td>
<td>?</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
</tr>
<tr>
<td>BONE</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Moderate Bone Loss</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>Neutral</td>
<td>? Bone Loss</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

- **Neutral**: Few adverse events or possible benefits
- **Yellow**: Use with caution
- **Red**: Likelihood of adverse effects

Gaps in US Hospital Discharge Planning and Transitional Care

Adults with any chronic condition hospitalized in past 2 years

Percentage who did NOT:

- Know who to contact for questions about condition or treatment: 8%
- Receive written plan for care after discharge: 9%
- Receive instructions about symptoms and when to seek further care: 12%
- Have arrangements made for follow-up visits with any doctor: 28%
- Have any discharge gap: 38%

Data collection: Harris Interactive, Inc.
Source: 2008 Commonwealth Fund International Health Policy Survey of Sicker Adults.
Hospital Discharge Planning Challenges

- Pressures to discharge patient early
- Shorter hospital stays
- Competing priorities
- Lack of primary care physician
- Nursing workload
- Lack of diabetes specialist educator
- Weekend discharges

Transition From Hospital to Outpatient Care

- Preparation for transition to the outpatient setting should begin at the time of hospital admission
- Clear communication with outpatient providers is critical for ensuring safe and successful transition to outpatient management
- Collaboration between the patient and/or significant other with entire interdisciplinary team is crucial in successful discharge planning

Domains of Patients’/Caregivers’ Experiences Transitioning From Hospital to Home

- Translating knowledge into safe, health-promoting actions at home
- Inclusion of caregivers at every step of the transition process
- Having readily available problem-solving resources
- Feeling connected to and trusting providers
- Transitioning from illness-defined experience to “normal” life
- Anticipating needs after discharge and making arrangements to meet them

Case Study: Interview and Fact Finding

Pt. has dementia and hand tremors; needs mild to moderate assistance with ADLs

Lives on the 1st floor of an apt. building with elderly husband who has multiple chronic conditions

Daughter Veronica and family live in the same apt. complex on the 2nd floor. She checks on her parents twice a day

Psychosocial considerations for discharge planning

ADLs = activities of daily living.
Appropriate DMSM Education Improves Outcomes

- Diabetes mellitus self-management education, a component of the chronic care and health promotion models, has been shown to improve:
  - Patient knowledge
  - Self-care behaviors
  - Clinical outcomes
  - Reduce health care costs

DMSM = diabetes mellitus self-management.
## Guidelines for Inpatient Education for All Health Care Professional

<table>
<thead>
<tr>
<th>Performing</th>
<th>Learning needs assessments to include health literacy and to set and prioritize goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating and updating</td>
<td>Prior diabetes knowledge</td>
</tr>
<tr>
<td>Focusing on survival skills</td>
<td>Meal planning, safe medication administration, BG monitoring, and hypoglycemia treatment</td>
</tr>
<tr>
<td>Documenting</td>
<td>Status of self-management education after each session to communicate to other health care professionals</td>
</tr>
<tr>
<td>Structuring</td>
<td>Learning environment to optimize learning (eg, focused short sessions)</td>
</tr>
<tr>
<td>Providing</td>
<td>Referrals to community resources to continue diabetes self-management education</td>
</tr>
</tbody>
</table>

### “Survival Skills” to Be Taught Before Discharge

<table>
<thead>
<tr>
<th>Topic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>How and when to take medication/insulin</td>
<td>• What to expect from the medication</td>
</tr>
<tr>
<td>How/when to test BG (SMBG)</td>
<td>• What are target glucose levels</td>
</tr>
<tr>
<td>Basics on meal planning</td>
<td></td>
</tr>
<tr>
<td>How to treat hypoglycemia</td>
<td></td>
</tr>
<tr>
<td>Sick-day management plan</td>
<td></td>
</tr>
<tr>
<td>Date/time of follow-up visits</td>
<td>• Including diabetes education</td>
</tr>
<tr>
<td>When and who to call on the health care team</td>
<td>• What community resources are available</td>
</tr>
</tbody>
</table>

Transition of Care: Patient Rights

- You have the right to be treated fairly and with respect during your transition of care
- You have the right to care transition that fits your situation
- You have the right to know why care transition is needed
- You have the right to say what you want and need during care transitions
- You have the right to take part in planning care transitions for yourself and your loved one
- You have the right to know the costs relate to care transitions
- You have the right to know the next steps during care transitions
- You have the right to privacy and your health care information during care transitions
- You have the right to get help when care transitions don’t go well
Discharge Preparation Checklist

**Before I leave the care facility, the following tasks should be completed:**

- I have been involved in decisions about what will take place after I leave the facility.
- I understand where I am going after I leave this facility and what will happen to me once I arrive.
- I have the name and phone number of a person I should contact if a problem arise during my transfer.
- I understand what my medications are, how to obtain them and how to take them.
- I understand the potential side effects of my medications and whom I should call if I experience them.
- I understand what symptoms I need to watch out for and whom to call should I notice them.
- I understand how to keep my health problems from becoming worse.
- My doctor or nurse has answered my most important questions prior to leaving the facility.
- My family or someone close to me knows that I am coming home and what I will need once I leave the facility.
- If I am going directly home, I have scheduled a follow-up appointment with my doctor, and I have transportation to this appointment.

This tool was developed by Dr. Eric Coleman, UCHSC, HCPR, with funding from the John A. Hartford Foundation and the Robert Wood Johnson Foundation.
Case Study

- Patient speaks only Spanish but understands a little English; same is true of her husband. Their daughter Veronica and grandson Roberto speak very good English and are able to translate into Spanish
- There is a small window of opportunity to make a difference in this patient’s transition from hospital to home
Case Study: Education
Provider discussed with patient changes to diabetes regimen for home.
Family taught diabetes regimen with return demo.

Written instructions provided on discharge plan in print (font size 14)

- New diabetes treatment regimen
  - Basal insulin 20 units SC daily
  - Initiated DPP-4 inhibitor and metformin XR combination
  - Discussed action and side effects
  - Sulfonylurea discontinued
  - Repeated verbally that diabetes regimen will now include “one shot and one pill a day”
- 1800-kcal diet, carbohydrate restricted (limit rice, potatoes, bread, pasta, tortilla to ½-cup serving at any meal)
- Increase moderate activities daily up to 30 minutes/day
- Check blood sugar before meals, 3x/day
- Follow up with PCP for blood sugar concerns
Key Learnings

1. Diabetes is a common diagnosis in the hospital setting; hospitalization provides an opportunity to identify and improve glycemic control.

2. The many transitions of care during hospitalization and back to the outpatient setting can create challenges to glycemic control.

3. A team approach, medication reconciliation, and policies to manage hyperglycemia and insulin therapy can improve diabetes care.

4. Patients with diagnosed diabetes or newly diagnosed diabetes may require changes to or intensification of therapy and appropriate education.
Where Can Patients go to Find More Information About Diabetes?

ndep.nih.gov/resources/diabetes-healthsense.
Where can Hispanic Patients go to Find More Information About Diabetes?