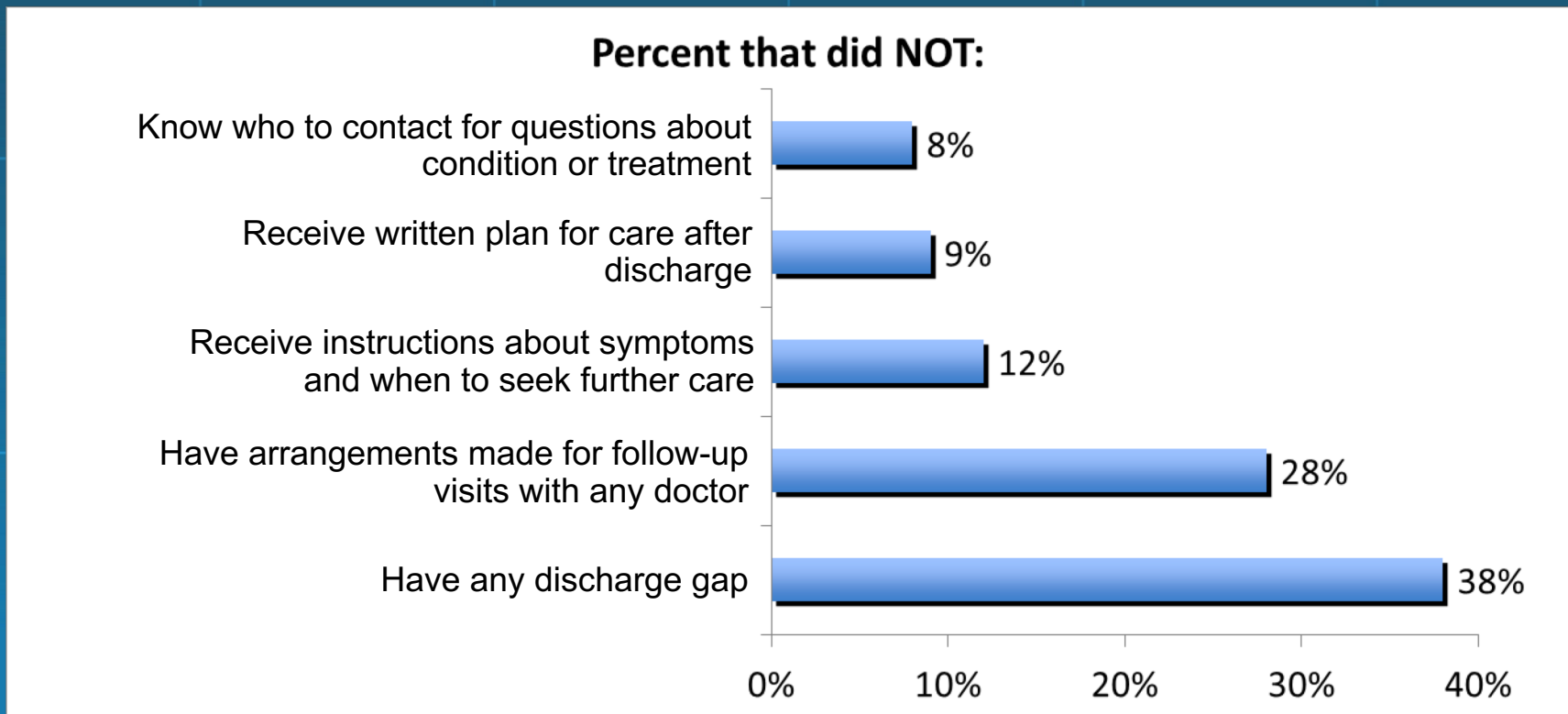


Strategies for Effective Discharge Planning for Hospitalized Patients With Diabetes



Gaps in US Hospital Discharge Planning and Transitional Care

Base: Adults with any chronic condition hospitalized in past 2 years



Data collection: Harris Interactive, Inc.

Source: 2008 Commonwealth Fund International Health Policy Survey of Sicker Adults. EL3, survey.

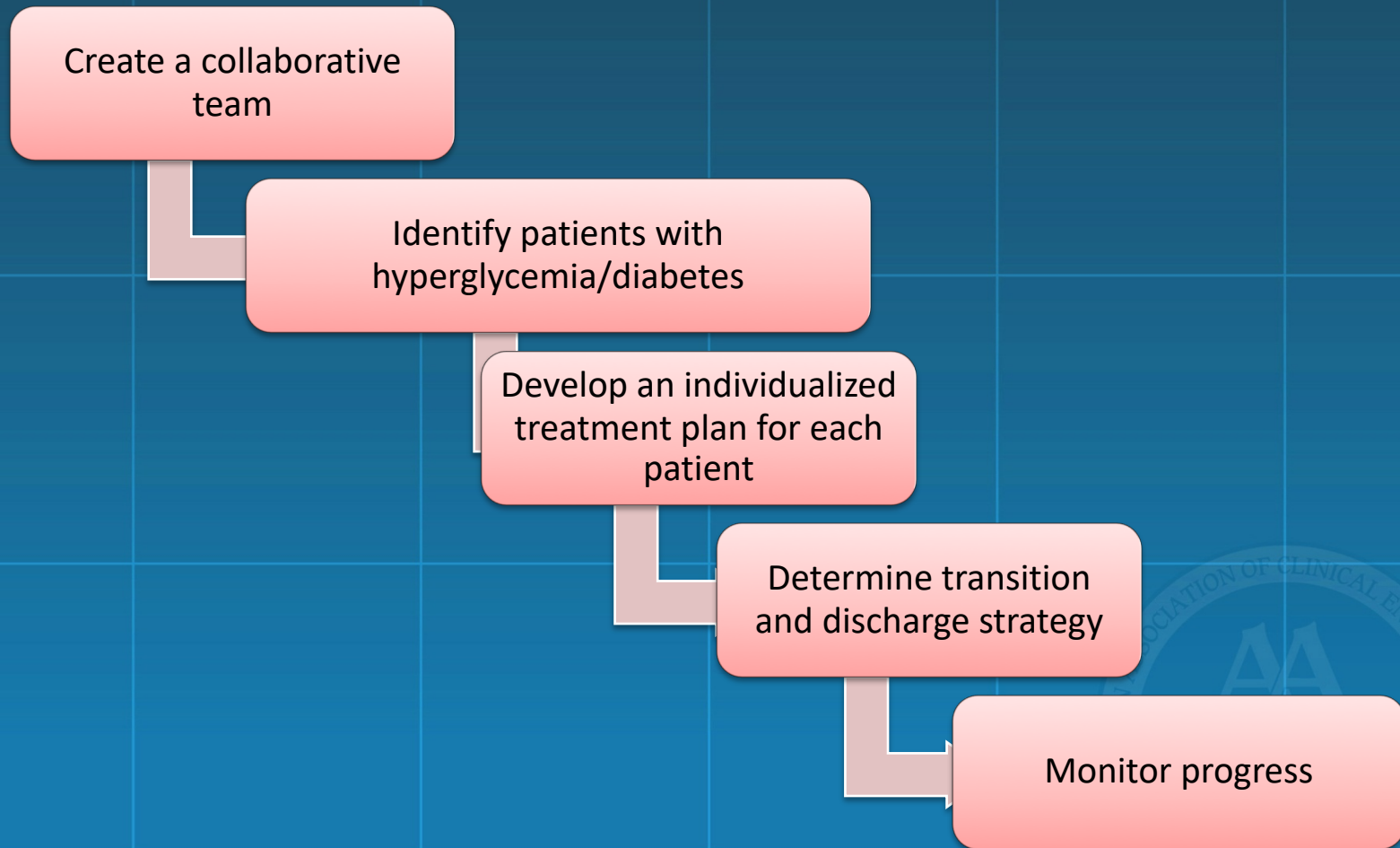
AACE Inpatient Glycemic Control Resource Center

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



Care Coordination for Patients With Hyperglycemia/Diabetes



Transition From Hospital to Outpatient Care

- Preparation for transition to the outpatient setting should begin at the time of hospital admission
- Multidisciplinary team
 - Bedside nurse
 - Clinical pharmacist
 - Registered dietitian
 - Case manager
- Clear communication with outpatient providers is critical for ensuring safe and successful transition to outpatient management

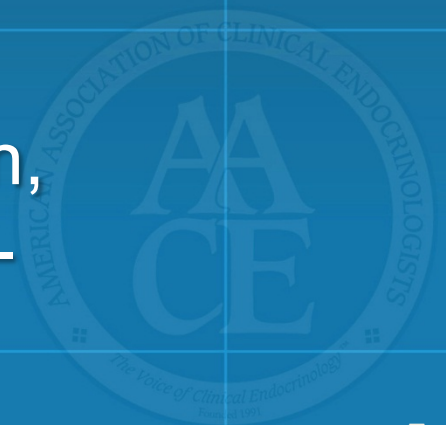
Discharge Considerations

- What are your discharge plans for this patient?
- Will they be discharged on insulin therapy?
- When and where will follow-up take place?
- What education do they need prior to discharge?



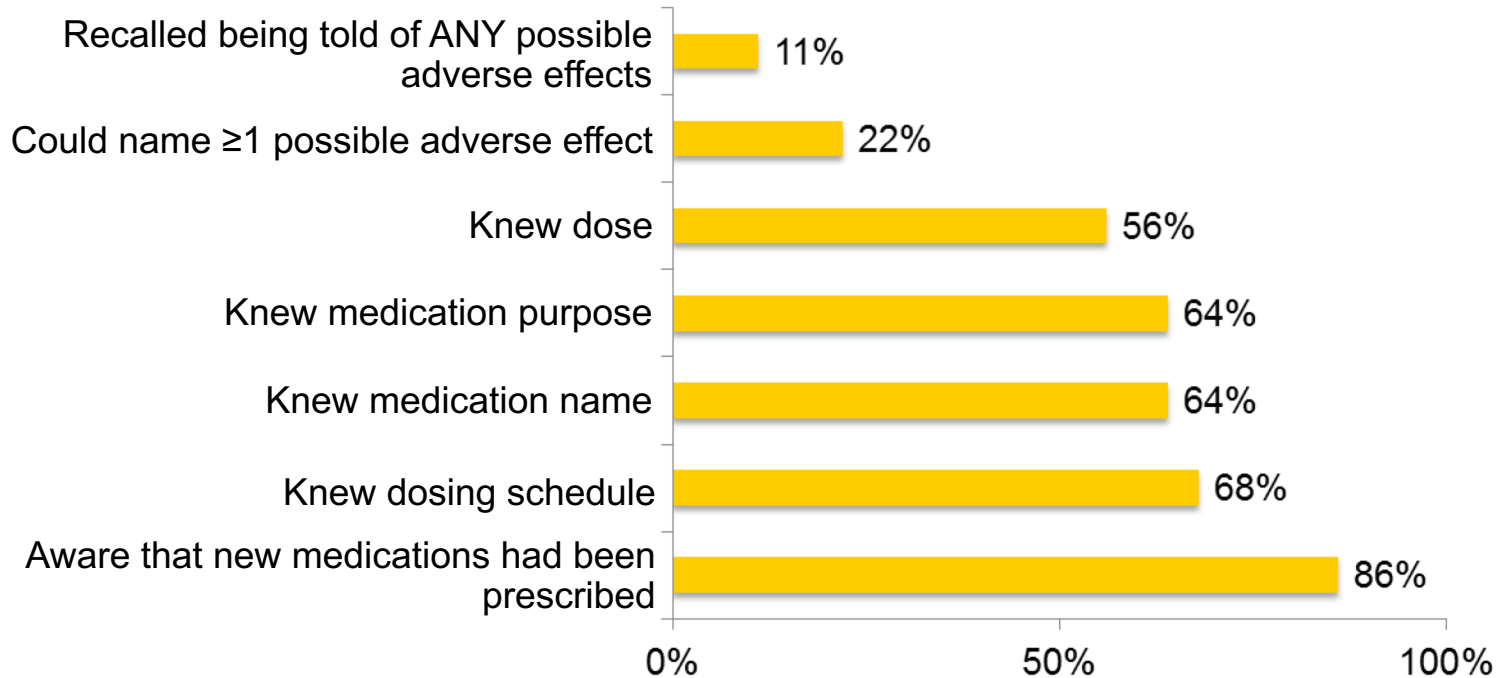
Preadmission Factors to Be Considered in Discharge Planning

- Physical/self-care limitations: blindness, stroke, amputation, dexterity
- Socioeconomic factors: insurance coverage, family support
- Access to follow-up care: PCP, other HCPs
- Degree of glycemic control prior to admission and severity of hyperglycemia
- Learning issues: language, cognition, competence related to diabetes self-management



Functional Health Literacy and Understanding of Medications at Discharge

172 patients discharged from community-based teaching hospital with prescriptions for 1 or more new medications



Relationship Between Inpatient and Outpatient Diabetes Management

Care received in the outpatient setting can affect need for hospitalization

Outpatient

Compliance with glycemic goals depends on the patient

Inpatient

Compliance with glycemic goals depends on physicians, nursing, and hospital staff

Lessons learned in the hospital can impact patient self-care behavior at home

Predischarge Checklist

- Diet information
- Monitor/strips and prescription
- Prescription for/supplies of medications, insulin, needles
- Treatment goals
- Contact phone numbers
- Medi-alert bracelet
- Survival skills training



Nursing + Care Coordination: Survival Skills to Be Taught Before Discharge

- How and when to take medication/insulin
 - Effects of medication
- How/when to test blood glucose (SMBG)
 - Target glucose levels
- Meal planning basics
- How to treat hypoglycemia
- Sick-day management plan
- Date/time of follow-up visits
 - Including diabetes education
- When and whom to call on the healthcare team
 - Available community resources

Discharge Planning Depending on Etiology of Hyperglycemia

Inpatient Hyperglycemia

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graph TD; A((Inpatient Hyperglycemia)) --> B[Temporary Hyperglycemia]; A --> C[Previously Undiagnosed Diabetes]; A --> D[Previously Diagnosed Diabetes];
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Temporary Hyperglycemia

- Resolves in hospital
- Requires follow-up testing

Previously Undiagnosed Diabetes

- Plan to confirm diagnosis, implement therapy and education

Previously Diagnosed Diabetes

- Assess level of control
- Adjust therapy as needed
- Assess for complications
- Outpatient follow-up



A1C Is Helpful in Determining Post-discharge Treatment

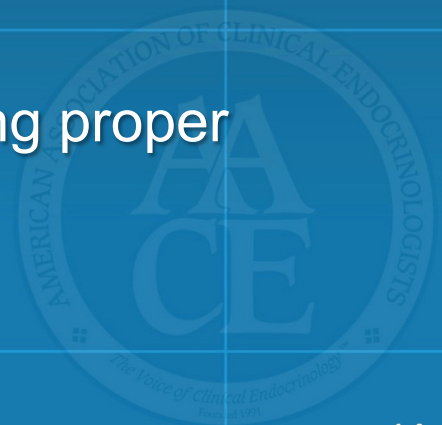
Patients Without Previously Diagnosed Diabetes

A1C	Indication
≥6.5%	<ul style="list-style-type: none">• Incipient diabetes• Refer to diabetes educator to begin self-management education prior to discharge
5.5%-6.4%	<ul style="list-style-type: none">• Increased risk for diabetes• Prior to discharge, address implementation of lifestyle interventions that promote weight loss and increased activity

- Differentiation between hospital-related hyperglycemia and undiagnosed diabetes requires follow-up testing (FPG, 2-h OGTT) once patient is metabolically stable using established criteria

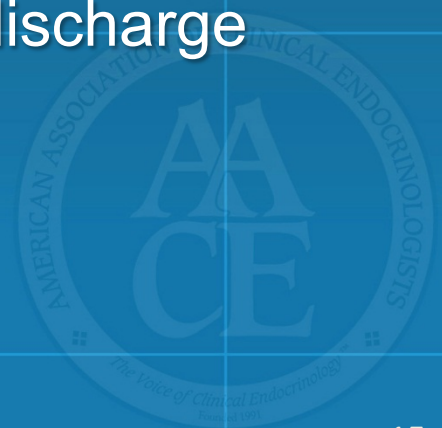
Patients Newly Diagnosed With Diabetes During Hospitalization

- Develop a diabetes education plan prior to hospital discharge that addresses the following:
 - Understanding of the diagnosis of diabetes
 - SMBG and explanation of home blood glucose goals
 - Definition, recognition, treatment, and prevention of hyperglycemia and hypoglycemia
 - Identification of healthcare provider who will provide diabetes care after discharge
 - Information on consistent eating patterns
 - When and how to take medication, including proper disposal of needles and syringes
 - Sick-day management



Discharging Patients With Previously Diagnosed Diabetes

- Resume preadmission diabetes regimen at time of discharge for patients with acceptable preadmission glycemic control and no contraindication to prior therapy
- Modify preadmission therapy for patients identified as being in poor control
- Provide patient and family members/caregivers with written and oral instructions regarding glycemic management regimen at time of hospital discharge



A1C Is Helpful in Determining Post-discharge Treatment

Patients With Previously Diagnosed Diabetes

A1C	Indication
6.5%-7.5%	Options: <ul style="list-style-type: none">• Increase dose of home noninsulin agents• Add third agent• Add basal insulin at bedtime
7.6%-9.0%	<ul style="list-style-type: none">• If already on 2 noninsulin agents, add once daily basal insulin at bedtime
≥9%	<ul style="list-style-type: none">• Discharge home on basal and bolus insulin regimen<ul style="list-style-type: none">• May use amount of basal insulin required in hospital as once daily glargine/detemir or twice daily NPH dose• Continue multiple daily doses as started in the hospital if appropriate• Twice daily premixed insulin may be considered for less complex insulin regimens, particularly in elderly patients

LIFESTYLE THERAPY (Including Medically Assisted Weight Loss)

Entry A1C < 7.5%

Entry A1C ≥ 7.5%

Entry A1C > 9.0%

MONOTHERAPY*

- ✓ Metformin
- ✓ GLP-1 RA
- ✓ SGLT-2i
- ✓ DPP-4i
- ⚠ TZD
- ✓ AGi
- ⚠ SU/GLN

If not at goal in 3 months proceed to Dual Therapy

DUAL THERAPY*

MET
or other
1st-line
agent

+

- ✓ GLP-1 RA
- ✓ SGLT-2i
- ✓ DPP-4i
- ⚠ TZD
- ⚠ Basal Insulin
- ✓ Colesevelam
- ✓ Bromocriptine QR
- ✓ AGi
- ⚠ SU/GLN

If not at goal in 3 months proceed to Triple Therapy

TRIPLE THERAPY*

MET
or other
1st-line
agent +
2nd-line
agent

+

- ✓ GLP-1 RA
- ✓ SGLT-2i
- ⚠ TZD
- ⚠ Basal insulin
- ✓ DPP-4i
- ✓ Colesevelam
- ✓ Bromocriptine QR
- ✓ AGi
- ⚠ SU/GLN

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

SYMPTOMS

NO

YES

DUAL
Therapy

OR

TRIPLE
Therapy

INSULIN
±
Other
Agents

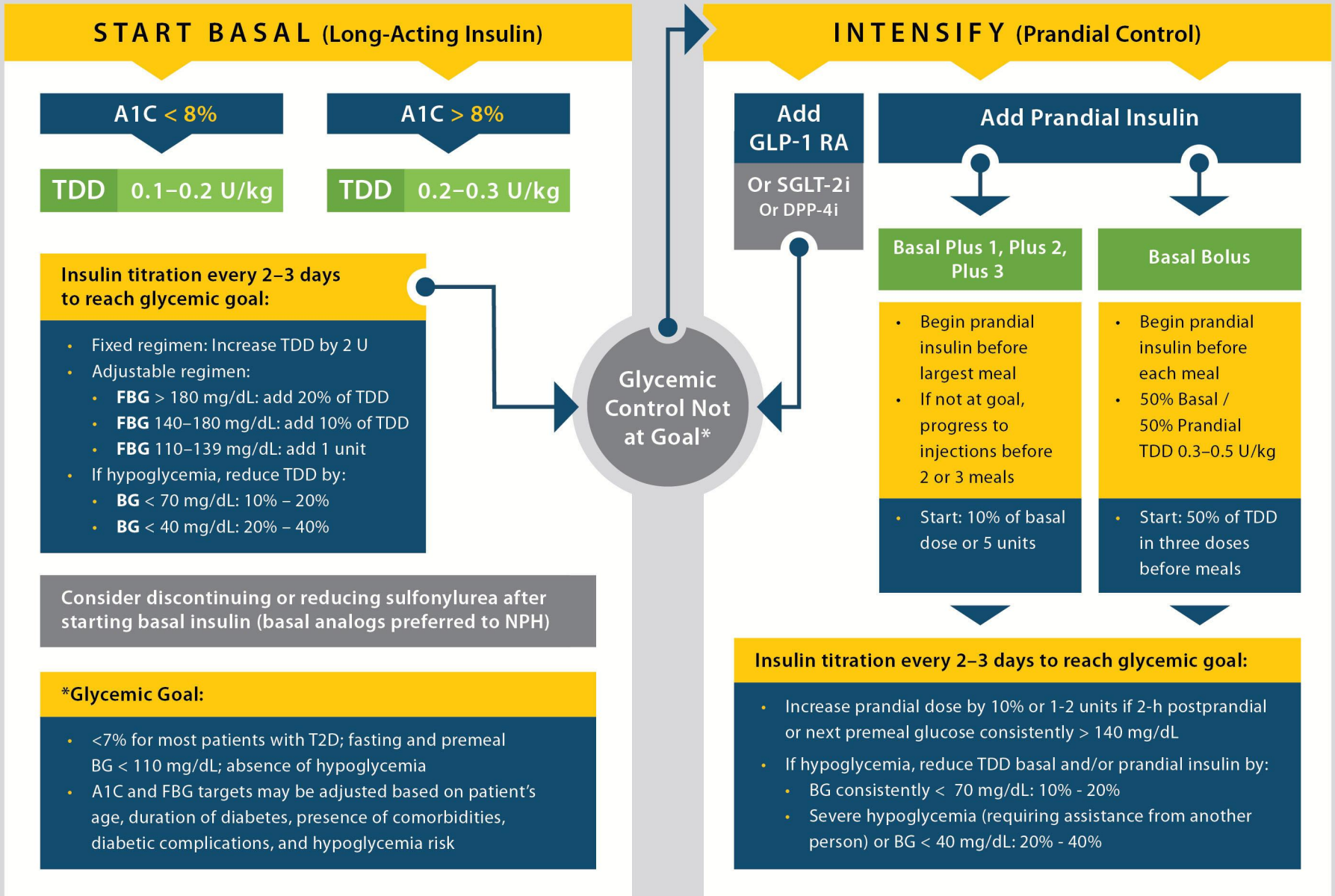
**ADD OR INTENSIFY
INSULIN**
Refer to Insulin Algorithm

LEGEND

- ✓ Few adverse events and/or possible benefits
- ⚠ Use with caution

PROGRESSION OF DISEASE

* Order of medications represents a suggested hierarchy of usage; length of line reflects strength of recommendation





PROFILES OF ANTIDIABETIC MEDICATIONS

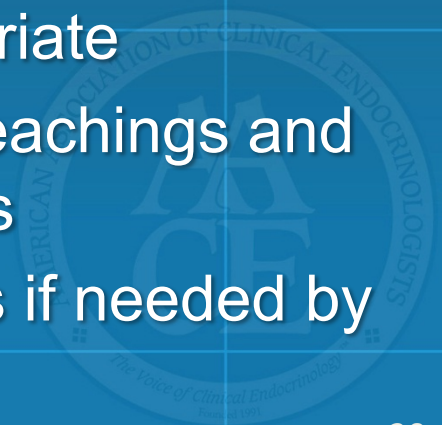


	MET	GLP-1 RA	SGLT-2i	DPP-4i	AGi	TZD (moderate dose)	SU GLN	COLSVL	BCR-QR	INSULIN	PRAML
HYPO	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral	Moderate/ Severe Mild	Neutral	Neutral	Moderate to Severe	Neutral
WEIGHT	Slight Loss	Loss	Loss	Neutral	Neutral	Gain	Gain	Neutral	Neutral	Gain	Loss
RENAL/ GU	Contra- indicated CKD Stage 3B,4,5	Exenatide Not Indicated CrCl < 30	Not Effective with eGFR < 45 Genital Mycotic Infections	Dose Adjustment Necessary (Except Linagliptin)	Neutral	Neutral	More Hypo Risk	Neutral	Neutral	More Hypo Risk	Neutral
GI Sx	Moderate	Moderate	Neutral	Neutral	Moderate	Neutral	Neutral	Mild	Moderate	Neutral	Moderate
CHF CARDIAC	Neutral	Neutral	Possible Benefit	Neutral	Neutral	Moderate	Neutral	Neutral	Neutral	Neutral	Neutral
ASCVD	Benefit					Neutral	?				
BONE	Neutral	Neutral	Neutral	Neutral	Neutral	Moderate Fracture Risk	Neutral	Neutral	Neutral	Neutral	Neutral

■ Few adverse events or possible benefits
 ■ Use with caution
 ■ Likelihood of adverse effects
 ■ ? Uncertain effect

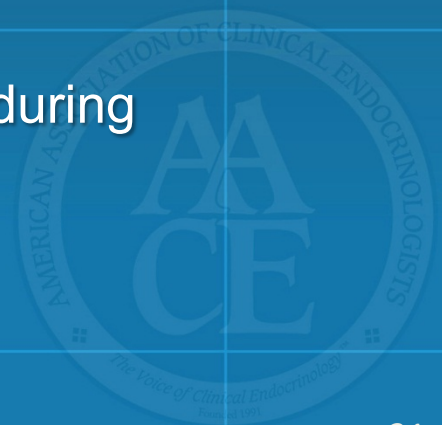
Recommended Educational Strategies for Inpatients Prior to and at Discharge

- Begin education on day 1 or as soon as the patient is able to participate
- Initiate inpatient diabetes educator consult as early as possible
- Nursing to reinforce the education as many times as possible utilizing every opportunity (medications, BG result, diet, etc.)
- Involve family members whenever appropriate
- Provide education materials to reinforce teachings and provide community and Web resource lists
- Continue education on an outpatient basis if needed by referring through appropriate channels



Continuum of Care: Patients New to Insulin

- Refer to an outpatient diabetes education program shortly after discharge to discuss ongoing diabetes control
- Provide discharge information
 - When to check BG
 - Timing of insulin administration
 - When to call PCP (eg, symptoms of hypoglycemia)
- Communicate with patient's PCP
 - Changes made to patient's treatment regimen during hospitalization
 - Complete medication list
- Assess need for home health care



Timely Discharge Information Required by the Receiving PCP

- Primary and secondary diagnoses and diagnostic findings
- Dates of hospitalization, treatment provided, and a summary of hospital course
- Discharge medications
- Patient or family counseling
- Tests pending at discharge
- Details of follow-up arrangements
- Name and contact information of the responsible hospital physician



Failure to Restart Diabetes Medications and Outcomes in Older Patients After Acute MI

8751 Medicare beneficiaries with diabetes and AMI admitted on antihyperglycemic therapy

7581 discharged **ON** antihyperglycemic therapy

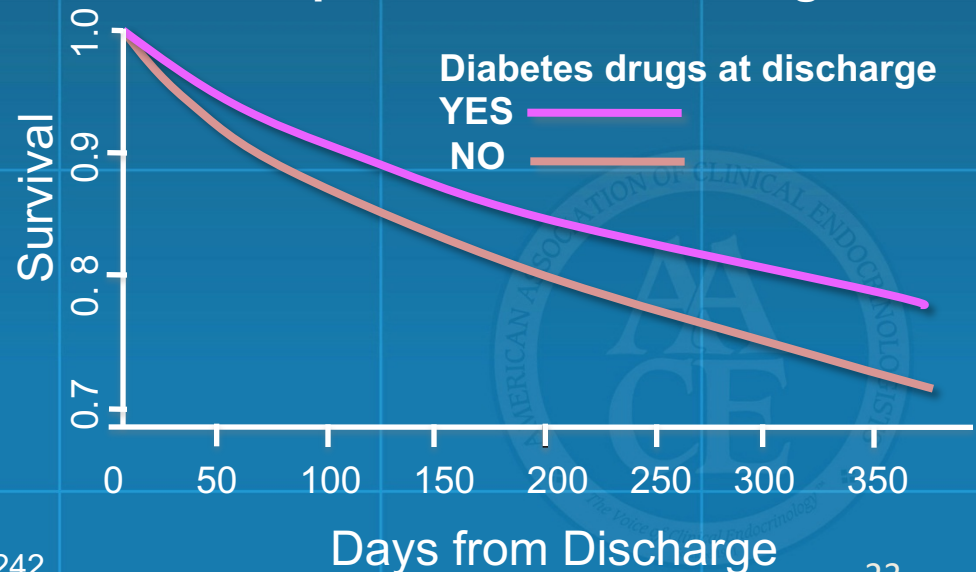
1170 discharged **OFF** antihyperglycemic therapy

Mortality at 1 year

Unadjusted		Adjusted	
HR	P	HR	P
1.47 (1.32-1.64)	<0.001	1.29 (1.15-1.45)	<0.001

Patients discharged OFF vs. discharged ON antihyperglycemic therapy

Cox Proportional Hazards Regression



Summary

Discharge Checklist for Patients with Inpatient Hyperglycemia

- Patient's need for diabetes education has been assessed (preferably upon admission)
- Patient has received the necessary skills and training
- Patient is provided with post-discharge plan for diabetes
- Patient has received clear instructions about medications
 - Name
 - Dosage
 - When to take them
- Patient has a scheduled follow-up appointment at time of discharge
- Written documentation for PCP is completed at time of discharge

