An emotional, yet factual, appeal to reconcile and reconsider at discharge.

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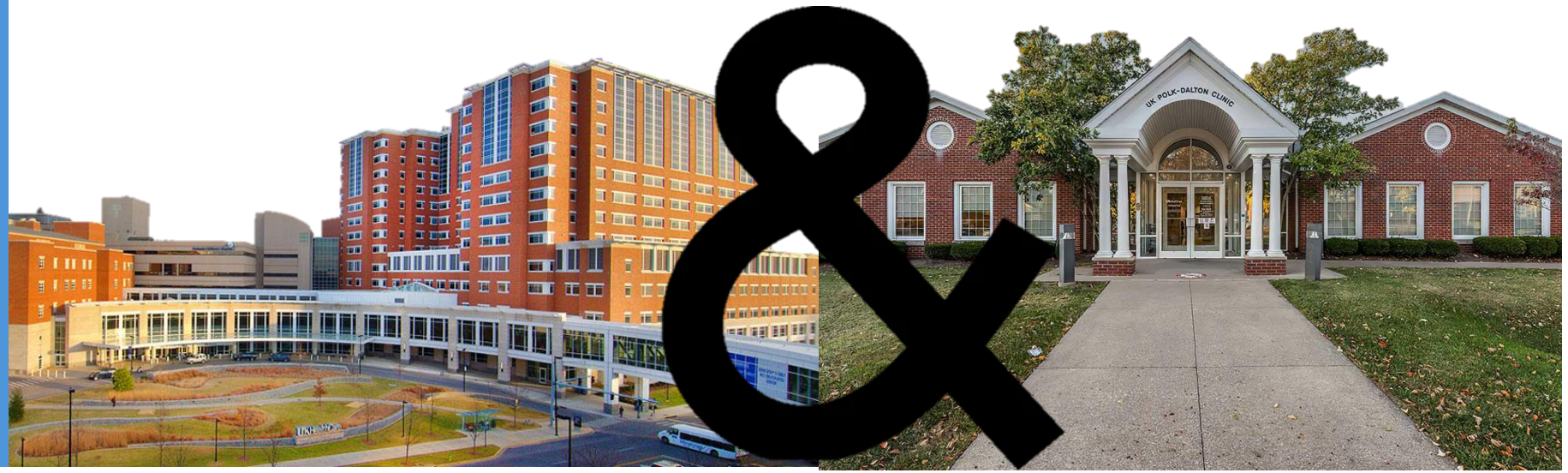
Faculty Disclosure

- No disclosures

Educational Need/Practice Gap

Transitions of care are among the highest-risk period for medication related harm. Medication reconciliation should be a thoughtful clinical review. Prescribing decisions at discharge should consider risk of adverse drug events in the outpatient arena and timeliness of follow up with their outpatient providers.

Why I Care



Objectives

Upon completion of this educational activity, you will be able to:

- Identify patients at high risk for medication-related adverse events during transitions of care
- Apply strategies for safe discharge prescribing of higher-risk medications [specifically diabetes management and antihypertensives]
- Perform medication reconciliation as a clinical safety intervention

Medication Reconciliation Case

Will insert interactive medication reconciliation case here; to be completed prior to discussion

Medication Errors = Re-presentation = Potential/Realized Harm

- **6.1 ED visits per 1,000 people annually**
  (95% CI: 4.8–7.5)
    - *Based on 96,925 medication-related harm cases (2017–2019).*
- **Medication-related admissions occur in about 1 in 5 hospitalized, and most appear to be preventable (69%).**

	30-day readmission rate
Heart Failure Hospitalization	20-25%
COPD exacerbation	10-22%
Acute Myocardial Infarction	14-18%

Budnitz DS, Shehab N, Lovegrove MC, Geller AI, Lind JN, Pollock DA. US Emergency Department Visits Attributed to Medication Harms, 2017-2019. JAMA. 2021;326(13):1299–1309. doi:10.1001/jama.2021.13844

El Morabet N, Uitvlugt EB, van den Bemt BJF, van den Bemt PMLA, Janssen MJA, Karapinar-Çarkit F. Prevalence and Preventability of Drug-Related Hospital Readmissions: A Systematic Review. J Am Geriatr Soc. 2018 Mar;66(3):602-608. doi: 10.1111/jgs.15244. Epub 2018 Feb 22. PMID: 29468640.

Highest risk patients:

- Adults >65 years old with 5 or more cardiometabolic medications
- Medication classes
  - Antihypertensives
  - Insulin and oral diabetes medication
  - Anticoagulants
  - Opioids
- Cognitive impairment
- Functional impairment and frailty
- Lack of caregiver support

- Discharge to skilled nursing facilities
- Incomplete medication discharge planning and counseling

High Risk Medication Management

- Antihypertensives
- Insulin and other oral diabetes medications
- Anticoagulants
- Opioids

Antihypertensives

In Hospital

- ‘As needed’ treatment of asymptomatic blood pressure elevation while inpatient is associated with greater risk of AKI, rapid drop in blood pressure and a composite outcome of stroke MI and death[1]
  - Excludes patients admitted for hypertension related reason

1. Canales MT, Yang S, Westanmo A, et al. As-Needed Blood Pressure Medication and Adverse Outcomes in VA Hospitals. JAMA Intern Med. 2025;185(1):52–60. doi:10.1001/jamainternmed.2024.6213

Antihypertensives

At Discharge

- Intensification of antihypertensive regimen at discharge, inpatients hospitalized for non-cardiac conditions, does not reduce cardiovascular events (or blood pressure) at 1 year but **DOES** increase rate of re-admission and serious adverse events at 30d

Rachoin J-S, Cerceo E, Anderson TS. *Things We Do for No Reason™: Intensifying antihypertensive medications for hospitalized patients at the time of discharge. J Hosp Med*. 2024; 19: 219-222. doi:10.1002/jhm.13185

Anderson TS, Jing B, Auerbach A, et al. Clinical Outcomes After Intensifying Antihypertensive Medication Regimens Among Older Adults at Hospital Discharge. JAMA Intern Med. 2019;179(11):1528–1536. doi:10.1001/jamainternmed.2019.3007

What to do instead?

- Review outpatient trends
- Consider contributory anxiety, substance withdrawal, pain
- Discuss the readings with the patient and recommend periodic checks prior to followup with PCP
- Provide handoff to PCP, even written in discharge summary

Intensify When
• BP plays an important role in current exacerbated pathology (CHF, CVA, ACS) • patient has pre-existing AMBULATORY hypertension

Insulin and oral diabetes medications

In Hospital

- Continue to strive for previously established glycemic targets with continuous, basal or basal-bolus insulin. Home medications continued case-by case basis
    - Noncritically ill: 100–180 mg/dL
    - Critically ill: 140–180 mg/dL


WARNING
HOT TAKE

ED visits and hospitalizations for insulin-related hypoglycemia

- Basal insulin alone: ~12.4 per 1,000 persons/year
- Basal + bolus insulin: ~36.1 per 1,000 persons/year
- Age ≥75 years substantially increases risk (IRR 1.56 vs. age 18–44)
- Overall among all diabetes patients: ~9.1 per 1,000 persons/year

Hot Take:

Insulin is a dangerous medication; effort should be made to maximize benefit from non-insulin agents at discharge even if it temporarily leave blood glucose uncontrolled

At discharge- *Reconsider Insulin*

STEP 1

Can Insulin be Omitted?

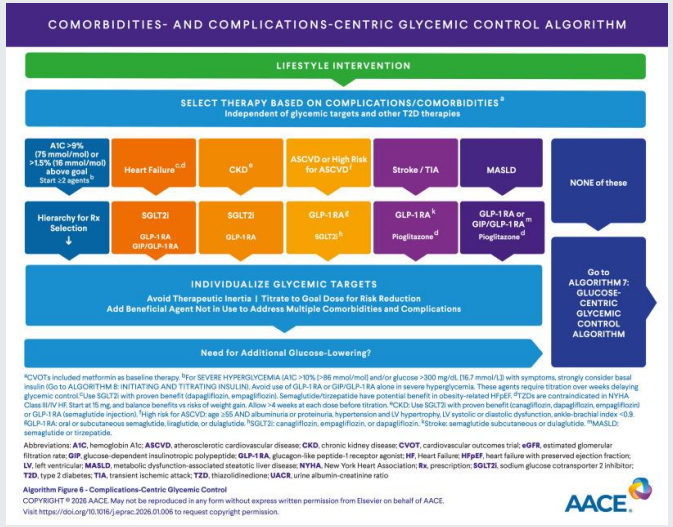
Potentially	Unlikely
-A1c <10% -No home insulin -low basal dose only (<25u/day) -Stable oral intake -GFR >30	-A1c >10% -Glucose persistently >300 - Evidence of glucose toxicity (weight loss -Pancreatogenic diabetes (pancreatic infiltration, etc.) -Steroid dependency -Inability to start a GLP-1 receptor agonist in a timely fashion after discharge
	Absolutely Not
	- Type 1 Diabetes mellitus

At discharge- *Reconsider Insulin*

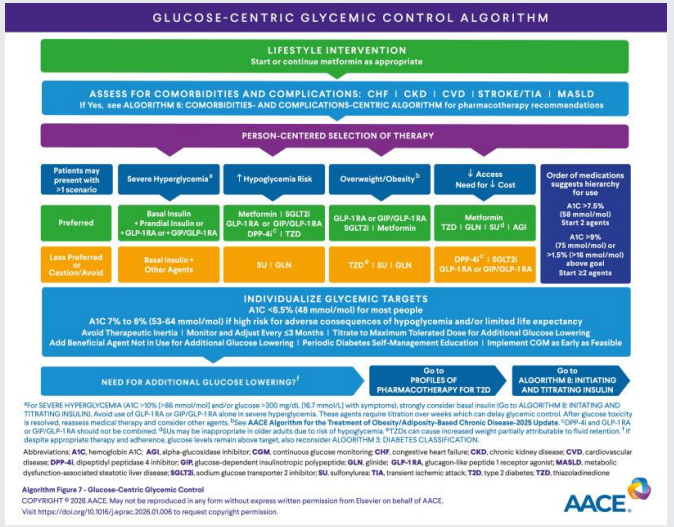
STEP 2

Build the non-insulin regimen

Comorbidities and Complications



Glucose Centric



COMORBIDITIES- AND COMPLICATIONS-CENTRIC GLYCEMIC CONTROL ALGORITHM

LIFESTYLE INTERVENTION

SELECT THERAPY BASED ON COMPLICATIONS/COMORBIDITIES[a]

Independent of glycemic targets and other T2D therapies

A1C >9% (75 mmol/mol) or >1.5% (16 mmol/mol) above goal Start ≥2 agents[b]	Heart Failure[c,d]	CKD[e]	ASCVD or High Risk for ASCVD[f]	Stroke / TIA	MASLD	NONE of these
Hierarchy for Rx Selection ↓	SGLT2i GLP-1 RA GIP/GLP-1 RA	SGLT2i GLP-1 RA	GLP-1 RA[g] SGLT2i[h]	GLP-1 RA[k] Pioglitazone[d]	GLP-1 RA or GIP/GLP-1 RA[m] Pioglitazone[d]	Go to ALGORITHM 7: GLUCOSE-CENTRIC GLYCEMIC CONTROL ALGORITHM

INDIVIDUALIZE GLYCEMIC TARGETS

Avoid Therapeutic Inertia | Titrate to Goal Dose for Risk Reduction
Add Beneficial Agent Not in Use to Address Multiple Comorbidities and Complications

Need for Additional Glucose-Lowering?

AACE

GLUCOSE-CENTRIC GLYCEMIC CONTROL ALGORITHM

LIFESTYLE INTERVENTION
Start or continue metformin as appropriate

ASSESS FOR COMORBIDITIES AND COMPLICATIONS: CHF | CKD | CVD | STROKE/TIA | MASLD
If Yes, see ALGORITHM 6: COMORBIDITIES- AND COMPLICATIONS-CENTRIC ALGORITHM for pharmacotherapy recommendations

PERSON-CENTERED SELECTION OF THERAPY

Patients may present with >1 scenario	Severe Hyperglycemia[a]	↑ Hypoglycemia Risk	Overweight/Obesity[b]	↓ Access Need for ↓ Cost	Order of medications suggests hierarchy for use
Preferred	Basal Insulin + Prandial Insulin or + GLP-1 RA or + GIP/GLP-1 RA	Metformin | SGLT2i GLP-1 RA or GIP/GLP-1 RA DPP-4i[c] | TZD	GLP-1 RA or GIP/GLP-1 RA SGLT2i | Metformin	Metformin TZD | GLN | SU[d] | AGI	A1C >7.5% (58 mmol/mol) Start 2 agents A1C >9% (75 mmol/mol) or >1.5% (>16 mmol/mol) above goal Start ≥2 agents
Less Preferred or Caution/Avoid	Basal Insulin + Other Agents	SU | GLN	TZD[e] | SU | GLN	DPP-4i[c] | SGLT2i GLP-1 RA or GIP/GLP-1 RA	

INDIVIDUALIZE GLYCEMIC TARGETS
A1C <6.5% (48 mmol/mol) for most people
A1C 7% to 8% (53-64 mmol/mol) if high risk for adverse consequences of hypoglycemia and/or limited life expectancy
Avoid Therapeutic Inertia | Monitor and Adjust Every ≤3 Months | Titrate to Maximum Tolerated Dose for Additional Glucose Lowering
Add Beneficial Agent Not in Use for Additional Glucose Lowering | Periodic Diabetes Self-Management Education | Implement CGM as Early as Feasible

AACE

Drug Class	Examples	A1c Reduction (average, monotherapy)	Notes	Renal Considerations	Hepatic Considerations
Biguanides	Metformin	1.0-1.5%	Weight neutral, low hypoglycemia risk	Dosing adjustments/contraindications starting at eGFR of 45	Use with caution in advanced cirrhosis
Sulfonylureas	Glipizide, glimepiride, glyburide	1.0–1.5%	Hypoglycemia risk **, weight gain	Dosing adjustments/contraindications starting at eGFR of 50-60	Lower starting dose in patients with liver disease
SGLT-2 inhibitors	Empagliflozin, dapagliflozin, canagliflozin	0.6–1.0%	Weight loss; BP reduction; CV and renal benefits; genital mycotic infection risk	Can initiate down to eGFR of 20	No dose adjustment
DPP-4 inhibitors	Sitagliptin, linagliptin, saxagliptin	0.6–0.8%	Weight neutral; well tolerated; less 'potent' than metformin or SUs	Dosing adjustments/contraindications starting at eGFR of 45 or lower	No dose adjustment for most
Injectable GLP-1 RAs (long-acting)	Liraglutide, dulaglutide, exenatide, semaglutide	1.0–1.8%	CV benefits (liraglutide, dulaglutide) CV and renal benefits (semaglutide), low hypoglycemia risk, weight loss	Dose adjustment only for exenatide at eGFR <45	No dose adjustment
Dual GLP-1/GIP agonist	Tirzepatide (Mounjaro)	1.9–2.3%		No dose adjustment even if ESRD	No dose adjustment
Thiazolidinediones	Pioglitazone, rosiglitazone	0.8–1.1%	weight gain; fluid retention/HF risk	No dose adjustment needed, avoid if fluid retention in CKD is a concern	Contraindicated if ALT >2.5x ULN

**Arguably safer than insulin, however...

At discharge- *Reconsider Insulin*

STEP 3	Insulin.. If you must
	Goal: Avoid hypoglycemia, bridge to optimization of non-insulin regimen (hopefully)
	Conservatively dosed basal insulin only: **0.2 U/kg/day | 80% of inpatient basal dose**

Samson SL, Vellanki P, Blonde L, Hirsch IB, Hoang TD, Isaacs SD, Izuora KE, Low Wang CC, Ooi CP, Padilla BI, Schulman-Rosenbaum R, Twining CL, Umpierrez GE, Valencia WM. American Association of Clinical Endocrinology Consensus Statement: Algorithm for Management of Adults With Type 2 Diabetes - 2026 Update. Endocr Pract. 2026 Apr;32(4):473-518. doi: 10.1016/j.eprac.2026.01.006. Epub 2026 Mar 17. Erratum in: Endocr Pract. 2026 Jun 12:S1530-891X(26)01004-9. doi: 10.1016/j.eprac.2026.05.025. PMID: 41842862.

Medication Reconciliation- Post Case

Medication Reconciliation Framework

Helpful Admission Hints

Insurance Fill Information

More to be added