Medication Management and Discharge Planning

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I **do not** have a financial interest in commercial products or services related to the subject of this lecture.

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Objectives

Review insulin errors & strategies for safe and effective insulin administration

- Identify hospital policies and features of insulin order sets that help reduce diabetes adverse drug errors
- Discuss key considerations for individualized discharge planning that improve quality of care & prevent readmission
- Case Studies

Insulin Errors

• According to a 2021 National Health Service report: *Two-fifths of people taking insulin have experienced one or more insulin errors during a hospital stay*



https://pharmaceutical-journal.com/article/opinion/hospital-insulin-errors-remain-high-but-we-can-improve-the-safety-of-inpatients-with-diabetes

Why is Insulin a *High-Alert* Medication?

- A high-alert medication has a greater risk of causing significant patient harm if there is an error
- Consequences of an error are more devastating to patients e.g. hypoglycemia
- Insulin is prescribed often and in frequent doses (e.g. 4x/day and continuous infusions), thus increasing the chance of error



Types of Insulin Errors



Zhao, Rui-yi, et al. "A stewardship intervention program for safe medication management and use of antidiabetic drugs." *Clinical interventions in aging* 10 (2015): 1201.

Strategies to Reduce Insulin Errors: Roles of Prescribers, Pharmacists & Nurses

- Avoid look-alike sound-alike insulins
- Barcode scanning when dispensing and administering
- Standardized dosing using electronic order sets (EHR)
- Set maximum dose alerts when possible
- Use medication event reports to identify root causes of errors & seek system-wide solutions

T1D Reminder for Basal Insulin Orders

- Pts with Type 1 DM (T1D) always require basal insulin even when NPO- to prevent DKA
- Always order basal insulin (glargine) if patient has T1D
- Basal insulin may also be given via patient's own insulin pump or intravenous insulin drip

Basal/Bolus
Sensitive - Use for Type 1 diabetes, lean body type, elderly, renal insufficiency, pancreatectomy
Does this patient have Type 1 Diabetes?
• Yes
Basal Insulin
Patients with Type 1 Diabetes Mellitus must be administered long acting insulin (eg, glargine) daily. IF NO WEIGHT, estimate weight and consider dose of: 0.1 unit/kg daily if poor intake (< 50% of tray), elderly, Type 1 DM, lean body type, renal insufficiency, pancreatectomy 0.2 unit/kg daily if average or overweight body type 0.3 unit/kg daily if obese body type or taking steroid
 insulin glargine (LANTUS) injection 0.1 Units/kg 0.1 Units/kg, Subcutaneous, Nightly, First Dose today at 2100, For 30 days Indications: Diabetes Mellitus
 Reason for not ordering glargine insulin Once, Starting 12/5/19
○ No

NYP Wait 4 Lispro Policy

ACTION PLAN



- Before administering lispro, RN checks time of prior dose in MAR
- If > 4 hours, RN should proceed with dose
- If < 4 hours, RN should contact the primary team to ask for an order for a dose reduction OR change in administration time
- This Strategy CAN PREVENT HYPOGLYCEMIA

Insulin Concentrations: units/ml

U100: glulisine lispro + lispro-aabc aspart regular human insulin (RHI) Humalog[®] Mix 50/50 Humalog[®] Mix 75/25 Novolog[®] Mix 70/30 Humulin[®] 70/30 Novolin[®] 70/30 NPH glargine detemir degludec

U200:

lispro + lispro aabc

degludec

U300:

glargine

U500: RHI



Pens







Afrezza ® (inhalation)

American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes 2022. Diabetes Care* 1 January 2022; 45 (Supplement 1): S125–S143

ISMP (2017) Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults

Guideline Sections

- Prescribing of Subcutaneous Insulin
- Pharmacy Management and Distribution of Subcutaneous Insulin
- Administration and Monitoring of Subcutaneous Insulin
- Safe Transitions of Care for Patients Receiving Subcutaneous Insulin



2017 ISMP Guid Optimizing Insulin Use

ISMP Guidelines for Optimizing Safe Subcutaneous Insulin Use in Adults





Inpatient Insulin Therapy



Actions of Injectable Insulins in U.S.

Rapid Acting: aspart, U100/U200 lispro, glulisine, faster aspart (Fiasp[®]), lispro-aabc (Lyumjev[®]): up to 4 hrs Short Acting: U100 Regular (RHI) up to 8 hrs, U500 RHI up to 24 hrs Intermediate Acting: NPH: up to 12 hours PLASMA INSULUN LEVELS

Long Acting: -U100 detemir: up to 24 hours -U100 glargine: up to 24 hours -U300 glargine: ~ 36 hours -U100 & U200 degludec: ~ 42 hours



American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: Standards of Medical Care in Diabetes— 2022. Diabetes Care 1 January 2022; 45 (Supplement 1): S125–S143.

Inpatient Basal, Prandial & Correction Insulins

Prescriber and RN Guidance for Insulin Administration

Insulin Type	Insulin Action	Insulin Name	Times Taken	Notes
Basal	Long Acting	glargine (Lantus, Basaglar OR Semglee)	Give once or twice a day	 Keeps blood glucose (BG) in range between meals and overnight Most patients take glargine once/day Give at the same time(s) each day Do NOT hold if patient is NPO
Prandial	Rapid Acting	lispro (Admelog, Humalog) OR aspart (Novolog)	Give +/- 15 minutes of first bite of meal BG order AC & HS	 Most patients receive standard (same) dose with each meal Give only if patient is eating Hold if patient is skipping meal or NPO Prandial insulin order allows RN to hold insulin without contacting team if patient is not eating or is NPO If BG <70 or <100 mg/dl with symptoms, hold prandial insulin and treat hypoglycemia first, then give prandial insulin with meal
Correction	Rapid Acting	lispro (Admelog, Humalog) OR aspart (Novolog)	Give to "correct" hyperglycemia BG order AC &HS if prandial insulin is ordered, or q6 hrs	 Give correction insulin to "correct" hyperglycemia even if patient is NOT eating If patient is eating, give correction according to BG together with standard prandial dose in single injection If patient is not eating, give correction dose alone

Insulin Secretion

Normal Physiology = 50% Basal + 50% Bolus



Figure 2. Dynamic nature of normal endogenous insulin secretion. Main components are basal insulin and postprandial insulin.

American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes* 2022. *Diabetes Care* 1 January 2022; 45 (Supplement_1): S125–S143.

Basal/Bolus Insulin Therapy: NYP Formulary = U100 glargine & lispro

Insulin Effect



B = breakfast L = lunch D = dinner

Dosing Insulin Based on Weight & Expected Insulin Sensitivity Total Daily Starting Dose (TDD) ~ 0.4-0.6 units/kg Divide Total Daily Dose into: ½ Basal, ½ Bolus

Total Daily Dose 0.4-----0.6-----0.6------0.8 units/kg

INSULIN SENSITIVE: T1DM, Thin, Elderly Renal Insufficiency, Pancreatectomy Sensitive ORDER SET Basal calc 0.1 u/kg

INSULIN AVERAGE: Overweight T2DM Average ORDER SET Basal calc 0.2 u/kg INSULIN *RESISTANT*: Infection, Steroids

Pregnancy Morbid Obesity *Resistant* ORDER SET Basal calc 0.3 u/kg Inpatient Insulin Order Sets

Comprehensive Insulin Order Sets

	1
Hypoglycemia Management	
dextrose (GLUCOSE) 40 % oral gel 15 g (\$) 15 g, Oral, Every 15 Minutes PRN, blood glucose < 70, BG<70 or<100 with symptoms if PO diet and able to swallow. Juice 4 oz (apple preferred) may be substituted for glucose gel based on patient preference., Starting today at 1924, For 30 days Indications: Diabetes Mellitus	
✓ Juice for hypoglycemia treatment only 118 mL (4oz) oral <u>Until discontinued, starting today at 1925, Until Specified</u> <u>q 15 min PRN BG< 70 or < 100 with symptoms. Give if patient refuses glucose gel</u> <u>and on PO diet, able to swallow</u>	
 dextrose 50 % injection 25 g (\$\$) 25 g, Intravenous, Administer over 5 Minutes, Every 15 Minutes PRN, BG<70 or <100 with symptoms if NPO and has IV access, Starting today at 1924, For 7 days VESICANT. Central line preferred. Indications: Nutrition Disorder 	
glucagon injection 1 mg (\$\$\$) 1 mg, Intramuscular, Administer over 2 Minutes, Every 15 Minutes PRN, BG<70 or <100 with symptoms if NPO and has no IV access, Starting today at 1924, For 30 days Indications: OTHER	
 Give snack or next scheduled meal containing 15-20 grams of carbohydr. protein when BG >80 mg/dL Until discontinued, starting today at 1925, Until Specified if next scheduled meal is not due within 1 hour 	ate with
POCT fingersticks	
POC Whole Blood Glucose 4 times daily before meals and at bedtime, First occurrence today at 2200, Until Specified Release to patient: Immediate	
✓ POC Whole Blood Glucose As needed, starting today at 1924, Until Specified Release to patient: Immediate Notify prescriber for BG < 70 or < 100 with symptoms or > 400	
Laboratory	
✓ HEMOGLOBIN A1C (\$\$\$) starting today at 1924, Until Specified Release to patient: Immediate	ccept X Cance
Nutrition	
Carb Controlled Diet 45gm Starting 6/22/21	
Carb Controlled; Carb Controlled Diet 60gm/Meal Diet effective now, starting today at 1925, Until Specified Diet: Carb Controlled Carb Controlled Diet Type: Carb Controlled Diet 60gm/Meal	
Carb Controlled Diet 75gm Starting 6/22/21	

Insulin Order Sets



Basal/Bolus

O Sensitive - Use for Type 1 diabetes, lean body type, elderly, renal insufficiency, pancreatectomy

OAverage - Use for average or overweight body type

Resistant - Use for obese body type, taking steroids

Custom

○ Fasting NPO

🔿 Tube Feedings





✓ <u>A</u>ccept

Basal Insulin is Auto-Calculated in Insulin Order Sets



Sensitive 0.1 units/kg Average 0.2 units/kg Resistant 0.3 units/kg

Insulin Order Sets

- Prandial (mealtime) and *correction* insulin orders (to correct hyperglycemia) are two <u>separate</u> orders
- Order both prandial & correction insulin for basalbolus regimen

Pr	randial Insulin
	 insulin lispro (ADMELOG) injection 2 Units (\$) 2 Units, Subcutaneous, Administer over 0.5 Minutes, 3 Times a Day With Meals, First Dose tomorrow at 0800, For 30 days Hold if patient skipping meal or is NPO If BG <70 or <100 with symptoms hold prandial insulin, TREAT hypoglycemia first, then administer prandial insulin with meal Notify prescriber for BG <70 or <100 with symptoms as indicated in hypoglycemia protocol or >400 High Alert. Look-alike sound-alike - Do not confuse with other insulins. Indications: Diabetes Mellitus
C	orrection insulin - to correct Hyperglycemia (CORRECTION FACTOR 1:50)
	insulin lispro (ADMELOG) injection 1-4 Units (\$) 1-4 Units, Subcutaneous, Administer over 0.5 Minutes, 3 Times a Day With Meals, First Dose tomorrow at 0800, For 30 days Mealtime Correction: If BG=200-250 give 1 units. If BG=251-300 give 2 units. If BG=301-350 give 3 units. If BG>350 give 4 units. Give the dose in addition to meal dose if patient is eating, or alone if patient is not eating. Notify prescriber for BG < 70 or < 100 with symptoms as indicated in hypoglycemia protocol or BG > 400 High Alert. Look-alike sound-alike - Do not confuse with other insulins. Indications: Diabetes Mellitus
	Insulin lispro bedtime (\$) 1-3 Units, Subcutaneous, Bedtime, Bedtime Correction: If BG=300-350 give 1 unit. If BG=351-400 give 2 units. If BG>400 give 3 units. If BG <70 or <100 with symptoms hold prandial insulin, TREAT hypoglycemia first, then administer prandial insulin with meal Notify prescriber for BG <70 or <100 with symptoms as indicated in hypoglycemia protocol or >400

Vellanki, Priyathama, et al. "Efficacy and Safety of Intensive Versus Nonintensive Supplemental Insulin With a Basal-Bolus Insulin Regimen in Hospitalized Patients With Type 2 Diabetes: A Randomized Clinical Study." *Diabetes Care* (2022).

Intensifying Insulin Therapy

NYP Basal/Bolus Insulin Order Set Dosing

Basal/Bolus Insulin Dosing for EPIC					
	Sensitive	Average	Resistant		
Indication	Use for type 1 DM,	Use for average or	Use for obese		
	lean body type,	overweight body	body type,		
	elderly, renal	type	taking steroids		
	insufficiency,				
	pancreatectomy				
Correction	1:50	1:50	1:25		
Factor: how					
much 1 unit of					
insulin will					
lower BG					
Glargine	0.1 unit/kg	0.2 unit/kg	0.3 unit/kg		
Defaulted Point	AC (with meals)	AC (with meals)	AC (with		
of Care BG	and bedtime	and bedtime	meals) and		
frequency			bedtime		
	Defaulted Insulin lispro Doses				
Prandial	2 units: 3 times a	4 units: 3 times a	6 units: 3		
Insulin*	day before meals	day before meals	times a day		
Compation	Den see 1.4 servite	Deners 1.5 mmite	before meals		
Lorrection	Range: 1-4 units	Range: 1-5 units	Range: 2-10		
150 200	Qumita	1 unita	2 units		
201 250		1 units	2 units		
201-230	2 units	2 units	4 units		
201 250	2 units	5 units	o units		
>250	5 units	4 units	o units		
~>>>U	Hunits	Dongos 1 4	TO UNITS		
Correction Insuling	Range: 1-3 units	Range: 1-4 units	Kange: 2-8		
Insum: Dodtime DC					
250_300	Qupits	1 unite	2 units		
301_350	1 units	2 units	2 units		
251 400	2 units	2 units	4 units		
>100	2 units	J units	8 units		
~400	1 5 utilis	1 4 units	i o units		

Insulin Titration Algorithm

WHICH INSULIN NEEDS ADJUSTMENT?

If AM fasting BG is too high or low:	Adjust glargine			
If pre-lunch, pre-dinner or bedtime is too high or low:	Adjust <i>lispro</i>			
HOW TO ADJUST When BG is <100 or >180 mg/dl				
If BG is less than 50: If BG is 50-69:	Deduct 50% Deduct 20%			
If BG is 70-99:	Deduct 10%			
If BG is 181-250: If BG is >250:	Add 10% Add 20%			

Managing Patients on Enteral Feedings & Steroids

Fasting NPO & Tube Feeding Order Sets

Order Panel	Insulin Type	Instructions
Fasting NPO Order Panel	<mark>lispro</mark> BG order q6 hours	 For patients that are <u>NPO</u>, give correction insulin (lispro) only based on current BG This order set has no relation to eating status
Tube Feedings Order Panel	Regular human insulin (RHI) BG order q6 hours	 Give regular human insulin every 6 hours Hold <u>standing</u> regular insulin dose every 6 hours if <u>tube feedings</u> are not running If held, continue <u>correction</u> regular insulin orders Correction insulin is given if needed based on current BG even if tube feeds are not running

PATIENT RECEIVING ENTERAL TUBE FEEDINGS

	TYPE 1 DN (STRONGLY CON ENDOCRINE COI	N SIDER NSULT)	TYPE 2 DM OR "NEW" HYPERGLYCEMIA*
BASAL INSULIN	<u>Continuous feeds</u> Insulin glargine: either home dose OR weight-based in Insulin Order Set		<u>Continuous feeds</u> Check insulin glargine box in Insulin Order Set
	Overnight feeds Insulin NPH 0.05-0.15 unit/kg when feeding starts AND MUST take basal: either home dose (consider decrease by 20%) OR weight-based glargine in Insulin Order Set		Overnight feeds Insulin NPH 0.05-0.15 unit/kg when feeding starts If patient with history of basal insulin use at home or in hospital, MUST take basal: either home dose (consider decrease by 30%) OR weight-based in Insulin Order Set
CORRECTION and/or PRANDIAL INSULIN	Continuous feeds: Overnight feeds: Eating:	Insulin regular Q 6 hours Not eating: Insulin lispro NPO scale q 6 hours Insulin lispro prandial + correction	

* Patients with BG > 180 mg/dL x 2 in 24 hours

PATIENT RECEIVING STEROIDS

	TYPI (STRONGLY CON CO	E 1 DM SIDER ENDOCRINE NSULT)	TYPE 2 DA	A OR "NEW" HYPE	RGLYCEMIA
	NPO	EATING		NPO	EATING
	Prednisone	Prednisone	Insulin naïve and BG <180	No basal	No basal
BASAL	Decrease home basal dose by 20% + Insulin NPH 0.1 units/kg at time of prednisone dose	Use home basal dose + Insulin NPH 0.15 units/kg at time of prednisone dose	Insulin naïve and BG >180 x2 in 24 h	Prednisone once daily Insulin NPH 0.15 units/kg with prednisone dose 24 hour steroid coverage Insulin glargine 0.15 unit/kg Q 9am OR Q 9pm	Prednisone once daily Insulin NPH 0.2 units/kg with prednisone dose 24 hour steroid coverage Check insulin glargine box in Insulin Order Set to calculate dose
	24 hour steroid coverage Use home basal dose	24 hour steroid coverage Increase basal by 10-20%	Recent history of basal insulin	Continue previous hospital regimen OR Check insulin glargine box in Insulin Order Set to calculate dose	Increase previous hospital regimen by 10-20% OR Check insulin glargine box in Insulin Order Set to calculate dose <u>AND</u> increase by 10-20%
ORRECTION and/or PRANDIAL INSULIN	Insulin lispro NPO correction scale	Increase insulin lispro prandial scale to the next level		Insulin lispro NPO correction scale	Increase insulin lispro prandial scale to the next level

- A.B. is a 56-year-old woman with a history of T2D admitted to the hospital for an asthma exacerbation
- At home, she takes the following medications: montelukast (Singulair[®]) 10 mg q evening, metformin 1000 mg BID
- Height 5'5", Weight 90 kg, BMI 33
- A1C 8.2%

A.B. is started on Prednisone 40 mg daily. By the 2nd day of hospitalization, A.B.'s BG levels are as follows:

	Breakfast	Lunch	Dinner	Bed
Day 1	139	204	264	217
Day 2	152	184	220	214

What insulin regimen would you order for A.B. in the hospital?

Transitioning Diabetes Medications at Time of Discharge

Revised T2D Discharge Insulin Algorithm

Choosing a T2D Discharge Regimen Based On *A1c* or *Time in Range* (TIR)

A1C < 8% or TIR >55%

Re-start outpatient regimen (evaluate any new medical conditions that may prevent use of certain agents or require dose adjustments)

A1C 8%-10% or TIR 25-55%

> Re-start outpatient regimen and consider glargine once daily at 50% of hospital dose

A1C >10% or TIR <25%

D/C on basal/bolus at same hospital dose. *Alternative*: Re-start outpatient regimen, consider glargine once daily at 80% of hospital dose

Adapted from Umpierrez et al, Diabetes Care. 2014 Nov;37(11):2934-9.

Galindo RJ, Dhatariya K, Gomez-Peralta F, Umpierrez GE. Safety and Efficacy of Inpatient Diabetes Management with Non-insulin Agents: an Overview of International Practices. Curr Diab Rep. 2022 Jun;22(6):237-246.

Factors to Consider when Choosing Pharmacological Agent(s) for Diabetes

- Current A1C
- Duration of diabetes
- Body weight & distribution (BMI, abdominal obesity)
- Age of patient
- Co-morbidities
- Cost of medication
- Convenience / complexity of regimen

American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes*— 2022. *Diabetes Care* 1 January 2022; 45 (Supplement_1): S125–S143. Galindo RJ, Dhatariya K, Gomez-Peralta F, Umpierrez GE. Safety and Efficacy of Inpatient Diabetes Management with Non-insulin Agents: an Overview of International Practices. Curr Diab Rep. 2022 Jun;22(6):237-246. Gregory, N. S., Seley, J. J., Dargar, S. K., Galla, N., Gerber, L. M., & Lee, J. I. (2018). Strategies to Prevent Readmission in High-Risk Patients with Diabetes: The Importance of an Interdisciplinary Approach. *Current diabetes reports*, *18*(8), 54. Initiating Insulin: 4 Main Options
Basal Alone: 1 shot/day
Basal Plus: 2 shots/day
Mixtures: 2 shots/day
Basal-Bolus: 4 shots/day



Pharmacologic Approaches to Glycemic Management: Standards of Medical Care in Diabetes - 2022. Diabetes Care 2022;45(Suppl. 1):S125-S143.

Novolog Mix 70/30[®] or Humalog Mix 75/25[®] Insulin Mixtures Not Formulary at NYP!!!!



American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes*—2022. Diabetes Care 1 January 2022; 45 (Supplement_1): S125–S143.

Converting Basal/Bolus Insulin Regimen to an Insulin Mixture

 Look at current glargine dose (18 units) + average lispro pre-meal doses for past 2 days. Example:

Breakfast	Lunch	Dinner	Total
5 lispro	6 lispro	4 lispro	15
6 lispro	2 lispro	3 lispro	11

- Average total premeal lispro dose: 15 +11= 26 ÷ 2 = ~13 units lispro per day
- Add 13 lispro + 18 glargine = 31 TOTAL DAILY DOSE (TDD)
- To convert to Novolog Mix 70/30[®]:
 - Give 2/3rd of dose in am to cover breakfast & lunch, and 1/3rd of dose at dinner to cover dinner and overnight
- Home Dose: 20 units pre-breakfast & 10 units pre-dinner

Alternatives to Basal/Bolus Insulin Discuss Simpler Plans with Patient/Family

Basal + Fixed Dose Meal Boluses

- Basal Plus (basal once daily + one meal bolus at largest meal)
- Pre-mixed insulin before breakfast & dinner, stress importance of eating meals on time
- Basal insulin once daily + repaglinide with meals
 Basal insulin once daily + DPP-IV once daily
 Basal insulin daily + GLP-1 daily or weekly to cover prandial needs
 Basal/GLP-1 QD combo: Xultophy[®] & Soliqua[®]

American Diabetes Association; 9. Pharmacologic Approaches to Glycemic Treatment: *Standards of Medical Care in Diabetes*— 2022. *Diabetes Care* 1 January 2022; 45 (Supplement_1): S125–S143. Galindo RJ, Dhatariya K, Gomez-Peralta F, Umpierrez GE. Safety and Efficacy of Inpatient Diabetes Management with Non-insulin Agents: an Overview of International Practices. Curr Diab Rep. 2022 Jun;22(6):237-246.

Biosimilar Insulins & Cost Savings

Biosimilar insulin: very similar to reference product, considered safe and effective.

Ex: Admelog[®] (lispro), Basaglar[®] (glargine)

Interchangeable biosimilar insulin: Biosimilar insulin that is further tested and found to be so similar to the reference product that each one can be switched for the other. Ex: Semglee[®] (Lantus)

Follow-on (Non-branded or un-branded) biologic insulin: is exactly the same as the brand-name product, but the brand name is not on the label. Ex: insulin aspart, insulin aspart protamine/aspart Mix 70/30, Novolin R Reli-On[®], Novolin N Reli-On[®], Novolin 70/30 Reli-On[®], insulin lispro.

ADA Cost of Insulin Support: Insulinhelp.org

Diabetes Meds Discharge Order Set

Outpatient Diabetes Prescription Orders	ccep
Patients Using Insulin Pens	
Patients Using Insulin Vials	
✓ Blood Glucose Testing Supplies	
Blood Glucose testing Supplies (NOTE)* Please enter ICD 10 Code & insulin-dependent (IDDM) or non-insulin dependent (NIDDM) for all testing supplies (NOTE)*	
Alcohol Swab (Rx)*	
Glucose Test Strip (Rx)*	
glucose blood Strip Take 1 Each by Other route in the morning and 1 Each at noon and 1 Each in the evening. Use As Directed to Check Blood Sugar Indications: Diabetes • Disp-100 Each, R-0 • ePrescribe	
① This medication will not be e-prescribed. Invalid items: Patient	
Bayer Contour Test Strip Disp-100 Each, R-0, or insurance-covered chem strips, ICD10 Code:	
Bayer Contour Next Test Strip Disp-100 Each, R-0, or insurance-covered chem strips, ICD10 Code	
FreeStyle Lite Test Strip Disp-100 Each, R-0, or insurance-covered chem strips, ICD10 Code	
OneTouch Verio Test Strip Disp-100 Each, R-0, or insurance-covered chem strips, ICD10 Code:	
Glucose Meter (Rx)*	
Lancets (Rx)*	
Lancing Devices (Rx)*	

Inpatient Diabetes Self-Management Education (DSME)

- Proper insulin dose measurement and selfadministration including injection & site rotation
- Ability to use a blood glucose meter or CGM to check glucose and understand the result
- Proper use and disposal of pen needles, syringes, lancets and insulin pump supplies
- Basic knowledge of carbohydrate counting or Plate Method to plan meals
- Hypo- and Hyperglycemia symptoms, treatment and prevention

Effective Discharge Planning

Prior to hospital discharge:

- Educate patients & family about any changes in home medication list prior to admission, highlight discontinued or newly prescribed medications
- Provide patient with verbal & up-to-date written instructions of diabetes management plan
- Ensure patients have or will obtain the diabetes medications and supplies needed, reconcile if needed
- Have a follow-up plan within two weeks to adjust diabetes meds and continue DSME

- C.K. is a 52-year-old man with a long history of T1D. He is admitted to the hospital with nausea and vomiting thought to be due to an exacerbation of gastroparesis. He is started on a clear liquid diet.
- Home Medications:
 - glargine (Lantus[®]) 18 units q10 pm
 - lispro (Humalog[®]) pre-meals (usually 4-6 units)
- Height 6'1", Weight 78 kg, BMI 22.7
- A1C 7.9%

 C.K. is NPO after midnight for a GI procedure the next day. How would you adjust his insulin regimen?

 C.K.'s BG is 68 mg/dL at 9 PM. Would you hold the glargine considering C.K.'s hypoglycemia?

- J.C. is a 72-year-old man presenting to the ED with fever and cough for 3 days.
- He has no known medical history, but he admits it has been many years since he has seen a healthcare provider.
- ROS: fever, cough, increased thirst, waking up several times per night to urinate.
- Random BG is 312 mg/dl at 2 PM
- Height 5' 3", weight 84 kg, BMI 32.8

- J.C. is started on antibiotics for pneumonia and planned for discharge home from the ED.
- Labs: serum creatinine 1.9, normal bicarbonate, normal anion gap, normal LFTs, A1C 9.7%.
- What is the next step in the management of this patient's diabetes? What factors would you consider in making this decision?

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