

**Example 11 — Banner Good Samaritan Medical Center CABG IV Insulin Protocol
(unpublished)**

Submitted by Dr. Cheryl O'Malley; shows transition to subcutaneous insulin built into IV infusion order set.

PHYSICIAN ORDERS				
	Critical Care Insulin Orders (do not use for diabetic ketoacidosis)			1 of 2
	(Orders with blanks/boxes apply only if completed. All others apply unless crossed out.)			
TARGET	BLOOD GLUCOSE LEVEL 70–110 mg/dL			
Insulin solution	100 units regular insulin in 100 mL of 0.9% NaCl to be titrated based on grid(s) below.			
Initial infusion	<ul style="list-style-type: none"> • Start nondiabetic patients at level I; start diabetic patients at level II. • Do not initiate insulin infusion unless blood glucose > 110 mg/dL or _____ mg/dL. • For patients with IV insulin from surgery, use level 3 for determining insulin rate. 			
Monitoring	Check blood glucose prior to start of insulin infusion. Check blood glucose every hour thereafter. <ul style="list-style-type: none"> • When glucose is 80–110 mg/dL for 3 hours, check glucose every 2 hours. • Resume monitoring every hour if blood glucose > 120 mg/dL for 2 hours. 			
Laboratory	Post-op CV surgery orders or daily CBC, CMP, A1C if not ordered previously			
Blood glucose < 80 mg/dL	If patient has blood glucose < 80 mg/dL: 1. Refer to regular insulin infusion rate column in tables below for management instructions. 2. If necessary to reinstate insulin infusion, start one level below previous level. 3. Call physician for symptomatic hypoglycemia or blood glucose < 50 mg/dL, even if treated.			
LEVEL 1 Start nondiabetic patients (Advance to level 2 if TARGET range not reached after 2 hours on level 1.) Do not initiate insulin drip unless blood glucose > 110 mg/dL or other value in initial infusion orders.	Blood glucose result	Regular insulin bolus	Regular insulin infusion rate	
	< 70	Give ½ amp of 50% dextrose	HOLD insulin infusion x 60 minutes and check blood glucose every 15 minutes until ≥ 80	
	70–79	0	HOLD insulin infusion x 60 minutes and check blood glucose every 15 minutes until ≥ 80	
	80–110	0	1.5 units/hour	
	111–149	0	2 units/hour	
	150–179	0	3 units/hour	
	180–209	0	4 units/hour	
	210–239	0	6 units/hour	
	240–269	5 units IV push	8 units/hour	
	270–299	5 units IV push	10 units/hour	
	300–329	5 units IV push	12 units/hour	
	330–359	5 units IV push	14 units/hour	
360–400	5 units IV push	16 units/hour		
> 400	Notify physician			
LEVEL 2 Start diabetic patients (Advance to level 3 if TARGET range not reached after 2 hours on level 2.) Do not initiate insulin drip unless blood glucose > 110 mg/dL or other value in initial infusion orders.	Blood Glucose Result	Regular Insulin Bolus	Regular Insulin Infusion Rate	
	< 70	Give ½ amp of 50% dextrose	HOLD Insulin Infusion x 60 minutes and check blood glucose every 15 minutes until ≥ 80.	
	70–79	0	HOLD insulin infusion x 60 minutes and check blood glucose every 15 minutes until ≥ 80.	
	80–110	0	2 units/hour	
	111–125	0	3 units/hour	
	126–149	0	4 units/hour	
	150–165	0	5 units/hour	
	166–179	0	6 units/hour	
	180–209	0	8 units/hour	
	210–239	10 units IV push	12 units/hour	
	240–269	10 units IV push	16 units/hour	
	270–299	10 units IV push	20 units/hour	
300–350	10 units IV push	25 units/hour		
> 350	Notify physician			
	Physician Signature	Print Name Date/Time		
	PHYORD (8/8/2006)			
DO NOT WRITE BELOW THIS LINE				
PHYSICIAN ORDERS				

Critical Care Insulin Orders (do not use for diabetic ketoacidosis) **2 of 2**
 (Orders with blanks/boxes apply only if completed. All others apply unless crossed out.)

LEVEL 3 Use for patients on insulin infusion from surgery Do not initiate insulin drip unless blood glucose > 110 mg/dL or other value in initial infusion orders.	Blood glucose result	Regular insulin bolus	Regular insulin infusion rate
	< 70	Give ½ amp of 50% dextrose	
70–79	0		HOLD insulin infusion x 60 minutes and check blood glucose every 15 minutes until ≥ 80.
80–90	0		2 units/hour
91–100	0		3 units/hour
101–110	0		5 units/hour
111–120	0		7 units/hour
121–130	0		10 units/hour
131–150	0		15 units/hour
151–180	0		18 units/hour
181–200	10 units IV push		20 units/hour
201–250	10 units IV push		25 units/hour
251–280	10 units IV push		30 units/hour
281–300	10 units IV push		35 units/hour
301–350	10 units IV push		40 units/hour
> 350	Notify physician		

To discontinue insulin infusion

Discontinue IV insulin when one of the following criteria is met:

- Physician order to discontinue IV insulin drip for blood glucose management.
- Transfer orders to non-ICU unit.
- Taking nourishment/meals (greater than clear liquids) *and* blood glucose is 80–110 mg/dL x 3 hours
Insulin management orders — unless prescriber writes differing orders

When stopping insulin drip:

- Calculate total daily dose of insulin** (sum of last 6 hours of insulin drip ____ x 4 = ____ units)
- If patient is known diabetic on oral diabetic medication, or A1C > 6.5, start subcutaneous insulin orders using total daily dose calculated (see #1); otherwise refer to sliding scale (C, below)
 - Initial daily basal dose of insulin glargine (Lantus) = Total daily dose divided by 2 = ____ units**
 - Give initial daily dose of Lantus subcutaneously 2 hours prior to stopping insulin drip, then every 24 hours at the same time each day. Please note time to be given _____.
 - Check glucose with discontinuation of insulin infusion, then ac and hs or every 6 hours if not eating meals.
 - Rapid-acting insulin (Humalog or Novolog) meal dose = total daily dose multiplied by 0.15 = ____ units to be administered 0–15 minutes before each meal (round to nearest unit)**
 - Hold if patient NPO, on clear or full liquids, or eating less than 50% of meal.
 - Supplemental rapid-acting insulin sliding scale orders:** Administer with scheduled meal rapid-acting insulin dose (see #2) when taking oral diet + sliding-scale coverage when indicated.
 - BG to be checked ac and HS; do not administer sliding-scale coverage if HS sugar elevated
 - Administer sliding scale coverage below based on results in addition to meal doses.

Coverage:	For blood glucose	Rapid-acting insulin subcutaneously
	111–130	2 units
	131–150	4 units
	151–170	5 units
	171–190	6 units
	191–210	8 units
	211–250	10 units
	251–300	12 units and notify physician
	301–350	14 units and notify physician
	351–400	16 units and notify physician
	Greater than 400	20 units and notify physician

Contact prescriber for orders for blood glucose > 200 mg/dL x 2 or 250 mg/dL x1

Physician Signature: _____ Print Name: _____ Date/Time: _____

PHYORD (8/8/2006)

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