

Table 2: Important steps in transitioning from insulin infusion to subcutaneous insulin

Step 1: Is patient stable enough for transition? Hypotension, active sepsis, pressors, and intubation are contraindications to transition due to unreliable subcutaneous insulin absorption and continued need for the most flexible dosing due to frequently changing insulin requirements.

Step 2: Does this patient need a transition to scheduled subcutaneous (SC) insulin?

Yes:

- All patients with Type 1 DM
- Type 2 DM patients on insulin as outpatient
- Type 2 DM patients with a recent mean infusion rate of $\geq 0.5^*$ units/hour

No:

- Type 2 DM patients with infusion rate $< 0.5^*$ units / hour
- Stress hyperglycemia or previously unrecognized DM if infusion rate < 1 unit/hour, or if HbA_{1c} near normal.
- Some institutions exclude *all* stress hyperglycemia patients from transition to a SC insulin regimen, regardless of drip rate.

Step 3: If transition is needed, calculate a Total Daily Dose (TDD) of insulin. The TDD is an estimate of the 24-hour insulin requirement when the patient is receiving full nutrition.

- Determine mean insulin infusion rate from last 6-8 hours.
- Calculate 24-hour insulin dose based on this, and reduce this 24-hour dose by some safety factor. There are several options for this step.
 1. Multiply hourly rate by 24, then multiply by 0.7 or 0.8 to arrive at a safety-adjusted 24 hour insulin dose. OR
 2. Multiply hourly infusion rate by 20 (80% of 24)
- Determine if this total is the TDD or basal dose based on current nutrition. There are several options for this step for you or your institution to choose.
 1. If infusion was serving basal AND nutritional needs of patient (such as a patient on 24 hour tube feedings) this will be your TDD. OR
 2. If the infusion insulin was not covering significant nutrition, this could be the BASAL insulin dose.

Step 4: Construct a basal / bolus regimen tailored to the patient's nutritional situation, building safeguards for any changes in nutritional intake and uncertainties about reliability of intake.

Several options are again available.

- Basal: should be ordered as basal glargine or detemir (these are preferred by SHM GCTF but NPH is also an option)
 1. Dose is 40-50% of TDD OR
 2. Adjusted 24 hour IV requirement given all as basal.
- Nutritional: The remainder of TDD is scheduled nutritional insulin in divided doses. In general, these doses need to be adjusted down for $< 100\%$ nutritional intake and the orders should allow for administering nutritional insulin just AFTER observed meal to allow an assessment of intake. There are several options for estimating the initial doses:
 1. Use 50% of the TDD as nutritional coverage and divide this amount by 3 to determine the scheduled meal dose. Hold if they don't eat more than 50% of their meal.
 2. Use a more conservative start of 0.1- 0.2 x basal dose for each meal
 3. Use carbohydrate counting to cover nutritional intake

Step 5: Be sure to give SC insulin BEFORE the infusion stops

- Basal glargine or detemir are ideally given at least 2 hours before infusion is discontinued.
- Shorter lead times (30 minutes) are possible if rapid acting insulin is given with basal insulin

*** Institutional cut-offs may vary. Some use 1-2 units per hour.**