INPATIENT DIABETES MANUAL

SUNY UPSTATE MEDICAL UNIVERSITY

SYRACUSE, NY

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INPATIENT TEAM

CALL FELLOW TO INFORM OF THE CONSULT: PLEASE SEE AMION OR CALL THE OPERATOR

ATTENDING NAME		PAGER/CELL
Runa Acharya, MD	**Director of Inpatient Services**	315-424-4716
Ruban Dhaliwal, MD		917-238-0678
Yanping Kong, MD		603-716-6789
Rachel Hopkins, MD		315-467-0090
Marisa Desimone, MD		315-213-1168
Roberto Izquierdo, MD		315-559-0316
Barbara Feuerstein, MD		315-569-7684

ANCILLARY TEAM CONTACT INFORMATION

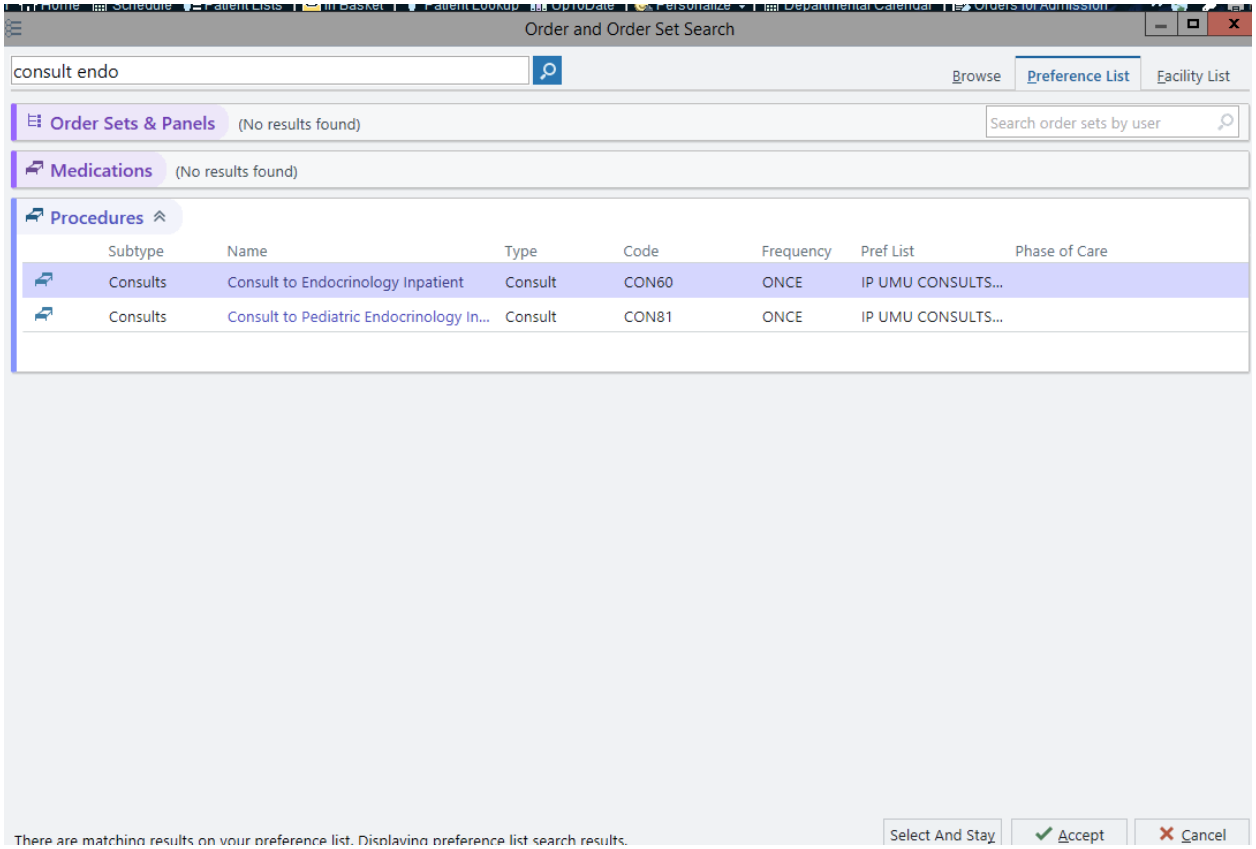
NAME	ROLE	PAGER
Dana Lonis, FNP-BC	**Glycemic/Endocrine NP**	(315)441-0449p (315)727-9399c
Peter Rosher, R-Ph	**Inpatient Diabetes Pharmacist**	(315)464-4210
Lori Gordon, RN	**Diabetes Educator**	Vocera-1st please (315)464-2600

CONSULTS

Receiving Consults:

- New consults are sent via Upstate paging system (amion.com)
- Consults go to personal pager for the fellow listed on amion
    - To find fellow on-call: go to amion.com → search “UPSTATE” → “ENDOCRINOLOGY ADULT”
- Consults for pregnant patients should be deferred to the high-risk OB-GYN service
- Consults for diabetic education only should be deferred to the clinical diabetes educator

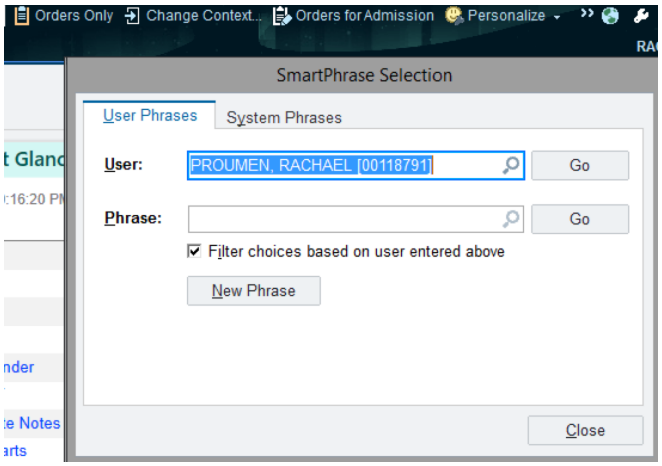
How consults appear in EPIC:



DOCUMENTATION

Epic smartphrases for documentation:

- To obtain a colleague's smartphrase, go the "PERSONALIZE" tab on the epic toolbar at the top of the screen→ select "Smartphrase manager" → in the search bar, type the user name of the person who owns the smartphrase (i.e. endocrine fellow, etc.)



Note Templates:

- **NEW NON-DIABETES ENDOCRINE CONSULT:**
  - .IPENDOCONSULT
- **ENDOCRINE FOLLOW-UP:**
  - No specific note template; typically use new endocrine consult template and edit as desired
- **NEW DIABETES CONSULT:**
  - .IPDMCONSULT
- **DIABETES FOLLOW-UP:**
  - .IPDMFOLLOWUP

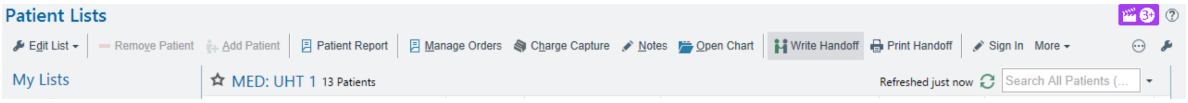
Key HPI Components for the evaluation of the patient with diabetes:

- See below an example of key information that should be included in the presentation/evaluation of patient with Diabetes

Name_____Age___T1___T2___DxDate_____Admission date_____ Days in Hospital_____
Followed by_____A1C____Date_____
GFR_____ BMI_____WT KG_____ Beta Hydroxybutyrate_____ Gap_____ FS_____ GLUC B___ L____ D___ BT____
Reason for admission and hospital course: Brief_____
_____
Current insulin regimen: Basal_____ SS @ 130___+___ Oral Medications_____
HDSS/MDSS/LDSS NPO/EATING/TF/TPN Correction Scale_____ Time_____
Blood Sugar monitor at home_____ Pump Y/N Settings Basal_____ Bolus_____ Carb Ratio_____
On insulin drip: Time Date started_____ Past 3H_____6H_____8H_____24H_____
Steroids: Y___ TYPE_____ DOSE_____ Taper? _____
Hypo/Hyper Glycemic Events_____ Threshold_____ Symptoms_____
Diet_____ CARB CONST or_____ Home Diet _____
Snacks_____ Additional notes_____
Appetite_____ _____
IV fluids with D5_____ _____
Tube feed-Type_____ Cyclical (Time)_____/Cont rate_____ _____
Trends. Fasting_____ mealtimes _____Bedtime_____ _____
Other Endocrine: TSH_____T4_____
Assessment: _____
Patient's sugars are well controlled fasting but mealtime sugars are high_____
Although the sugars are good right now, concerned about the insulin regimen as it is off from the recommended 50/50 basal bolus regimen. Under excellent control. Patient on a reasonable regimen-continue it.
Plan: _____
If changing regimen,
Justify Your plan for basal: I want to give ___ for basal because _____
Justify your plan for bolus: I want to change bolus to___ because_____
Modified plan after discussing with attending if different: _____

Sign-out:

- Navigate to the "HANDOFF" page to locate sign out:
  - On the "PATIENT LIST" page, select the patient of interest → select "WRIGHT HANDOFF"
  - The handoff tab will populate on the sidebar → in the search bar, type "DIABETES/ENDOCRINOLOGY"



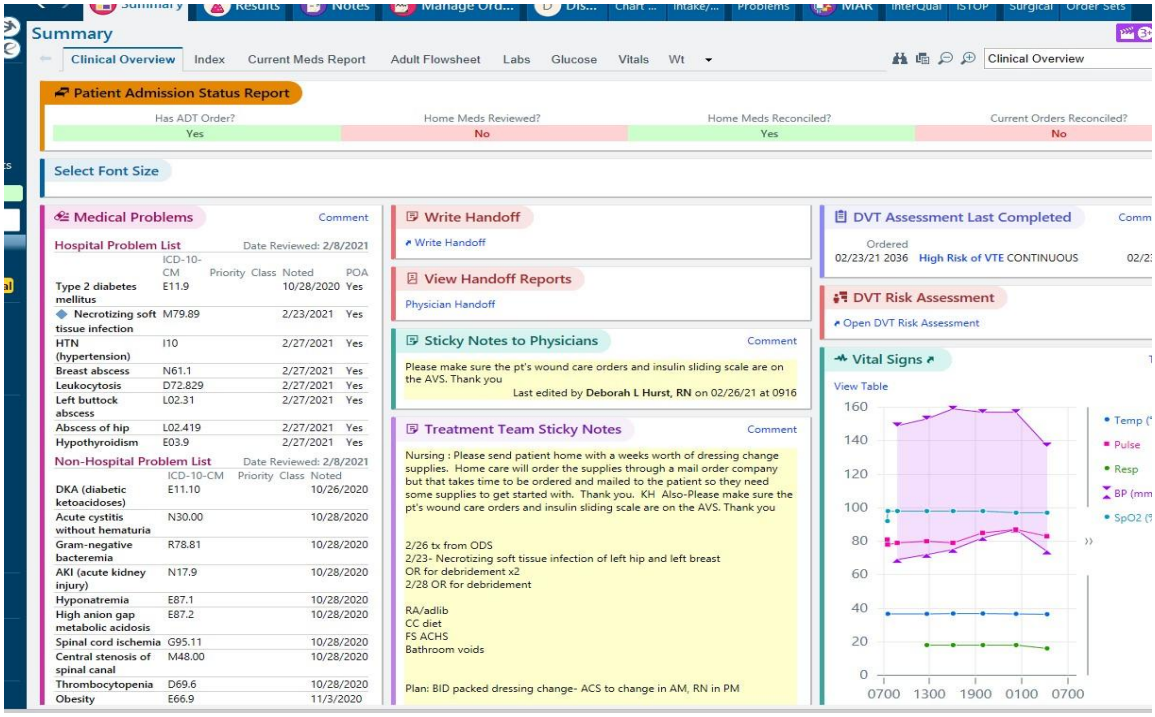
- On the handoff, ensure to include the following:
  - **Summary**: Brief description of the patient and reason for consult
  - **Action items:** Patient's home medication regimen, current regimen, A1c, glucose log
    - To include glucose log, use the following smart phrase: **.glucose** (you may have to obtain this smartphrase from another user as above)
    - On the glucose log you can chart the patient's blood glucose values throughout their inpatient stay.

  - **Contingency Planning:**

- List the date and the changes made to regimen that day
- Items to follow overnight; this will be signed out to overnight fellow

Endocrinology Service Patient List:

- Patient list is a private, shared list (“Hospital Consults”) amongst the attendings and fellows
- To obtain access to the list, you must be invited by the fellows or attendings
- ICD-10 codes for diagnoses are listed on each patient’s chart in the Clinical Overview



RESIDENT AND NP RESPONSIBILITIES

Resident Responsibilities:

- The day prior to your rotation, page the endocrine fellow scheduled for your rotation period to discuss rotation expectations including meeting time and location.
- You are expected to be present during rounds (virtual via Webex/Zoom) and in-person, if indicated by attending
- The fellow will contact you daily with new consults
- Residents should round on patients prior to rounds with attending
- Previous patients should be seen daily and a progress note should be written according to plan as discussed on rounds with attending. Do not sign the note until after discussion with attending during rounds.

Mid-level (NP/PA) Responsibilities:

- NP will provide inpatient follow-up care to patients (primarily diabetes consults) who are assigned. NP will round on the inpatient service with the team Monday through Friday.

- Patients covered by the NP service will be seen everyday or every other day as medically appropriate.

- On weekends, the **fellow and rounding attending will be responsible for covering NP service patients on both Saturday AND Sunday.** Chart review for blood glucose data should be done both days. Patients may be seen at the discretion of the attending if needed.

- NP will provide an updated sign-out to the on-call fellow for phone coverage overnight (including weekdays and weekends) via email

- On holidays, the on-call attending will cover NP service patients with the fellow. This includes when a holiday falls on a weekday or weekend.

- NP will be involved in educating other services and residents regarding diabetes through “Diabetes Pearl of the day” along with the endocrine fellows. She will also be responsible for QI projects under inpatient endocrine med safety team’s guidance.

- NP will do inpatient consults for patients with diabetes that are not already being followed by the Endocrine consult service.

Transfers To NP Service:

- To prevent fellow services from becoming overloaded with diabetes follow ups, appropriate patients may be transferred to NP.

- Patients can be transferred on <u>Monday through Thursday.</u>

- New transfers should be emailed to NP preferably at the end of the work day but no later than 8am the next day. Please include the patient's name and medical record number. Sign-out should be provided if there are any unusual circumstances, otherwise, generally handoff will be adequate.

- NP can call the endocrine attending on call if they have any questions.

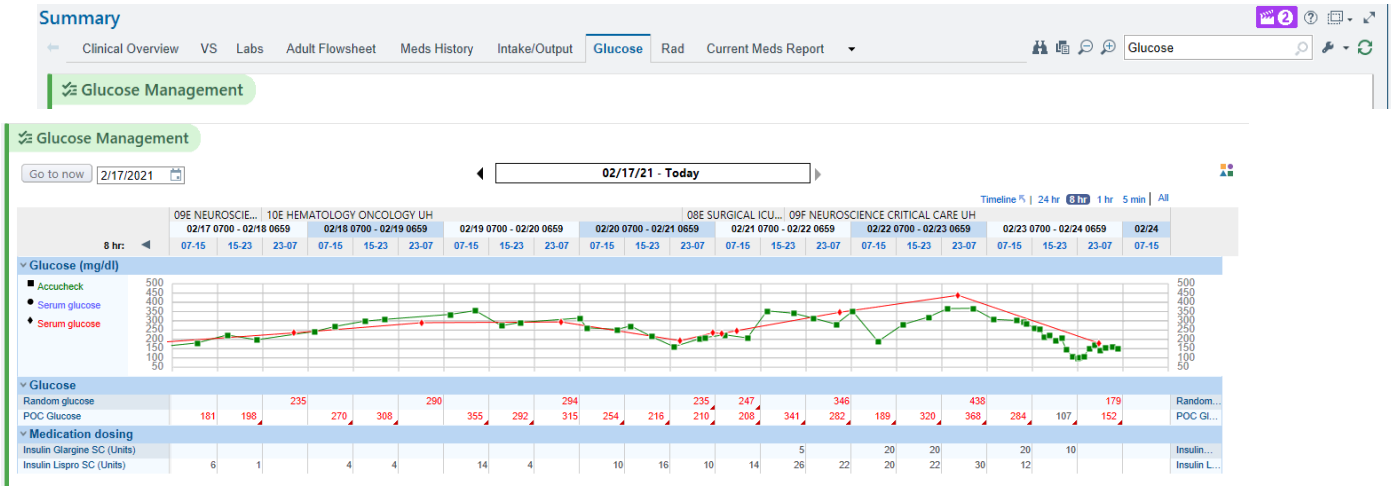
Rounding:

-Contact the fellow on call for time/location of rounds

INPATIENT DIABETES CHART REVIEW

VIEWING INPATIENT BLOOD GLUCOSE VALUES/SUBCUTANEOUS INSULIN DOSE:

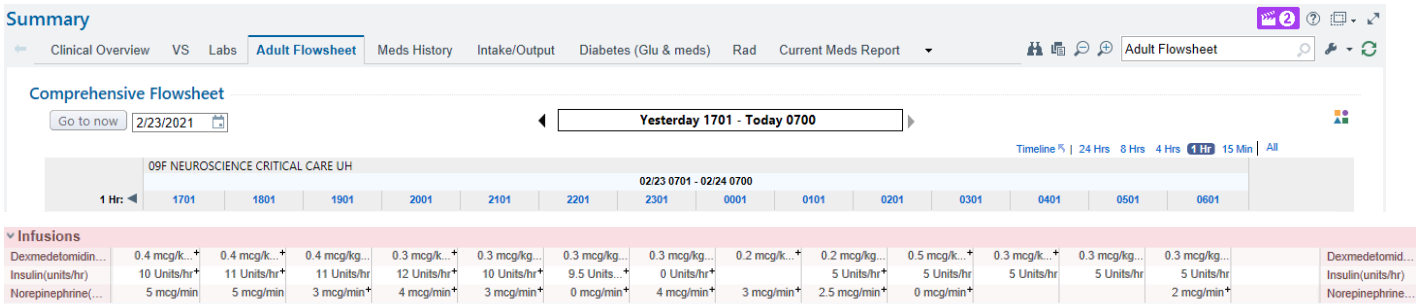
- There are several ways in EPIC to view point-of-care (POC) glucose values and subcutaneous (SQ) insulin dosing, but an easy, efficient way is via the “GLUCOSE” section on the “SUMMARY” tab, seen below.



- On this view, the POC glucose value and SQ insulin given (at a specified time) is shown, with a graph to visualize the glucose trend; you can view the values over a variety of time periods (24 hours, 8 hours, 1 hour)
- Hovering over the dots in the graph provides a specific glucose value for that time
- If you want to see specific time of insulin coverage, you can adjust to the table view to 1,4,8 or 24-hour view or you can hover over insulin dose and it will show the specific time when the insulin was administered
- Below the POC glucose levels, you will also find the amount of insulin given to the patient at that time, both long-acting (lantus, detemir) and short acting (lispro or aspart)
- Changing the table view to 24-hours allows you to visualize the total daily dose (TDD) of insulin.

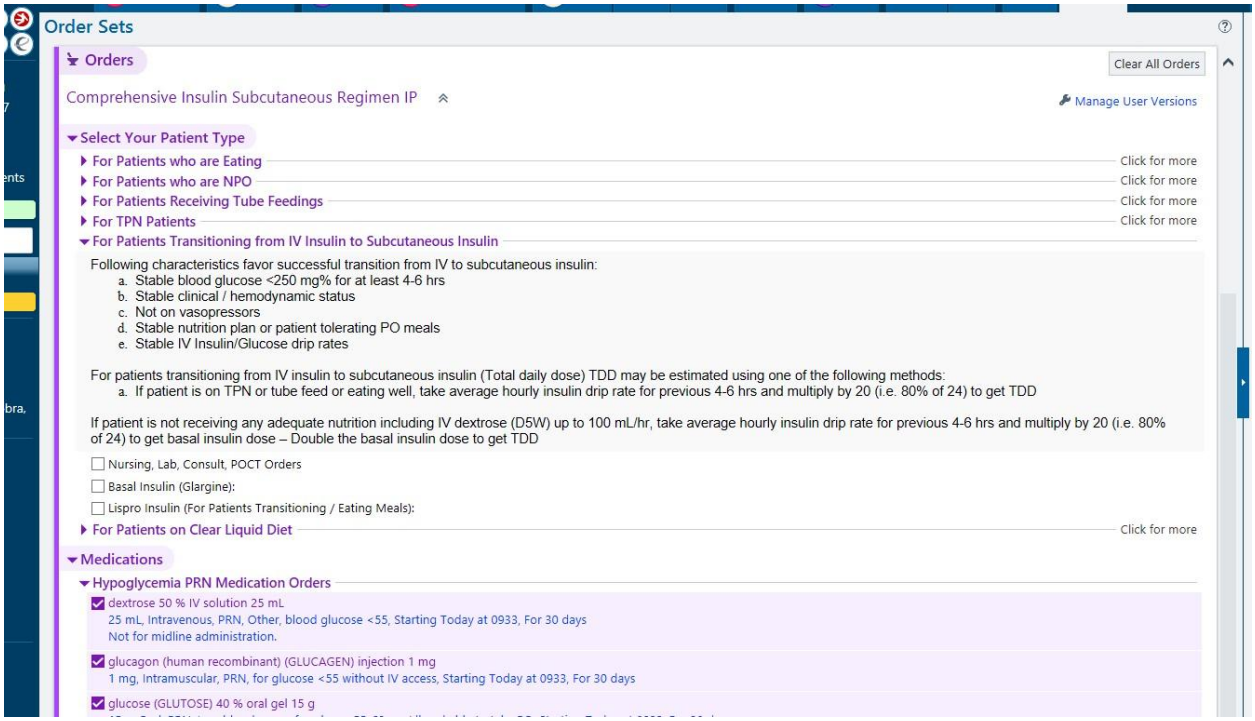
IV INSULIN (FOR USE IN ICU):

- At UUH, IV insulin is only given in the ICU (MICU, SICU, CCU)
- If the patient is on an insulin drip, the coverage should be viewed under “ADULT FLOWSHEET” on the summary tab as seen below
- For the best viewing, ensure that the table view is set to ‘1 hour’
- The ‘1 hour’ view allows you to see the current hourly insulin drip rate and calculate total IV insulin dose.



Transitioning from IV to SQ insulin:

- Utilize the order set in Epic to calculate the dose of basal insulin to be given to the patient(see below).
- Give the basal insulin 1 hour prior to stopping insulin drip so that there is enough time for transition.



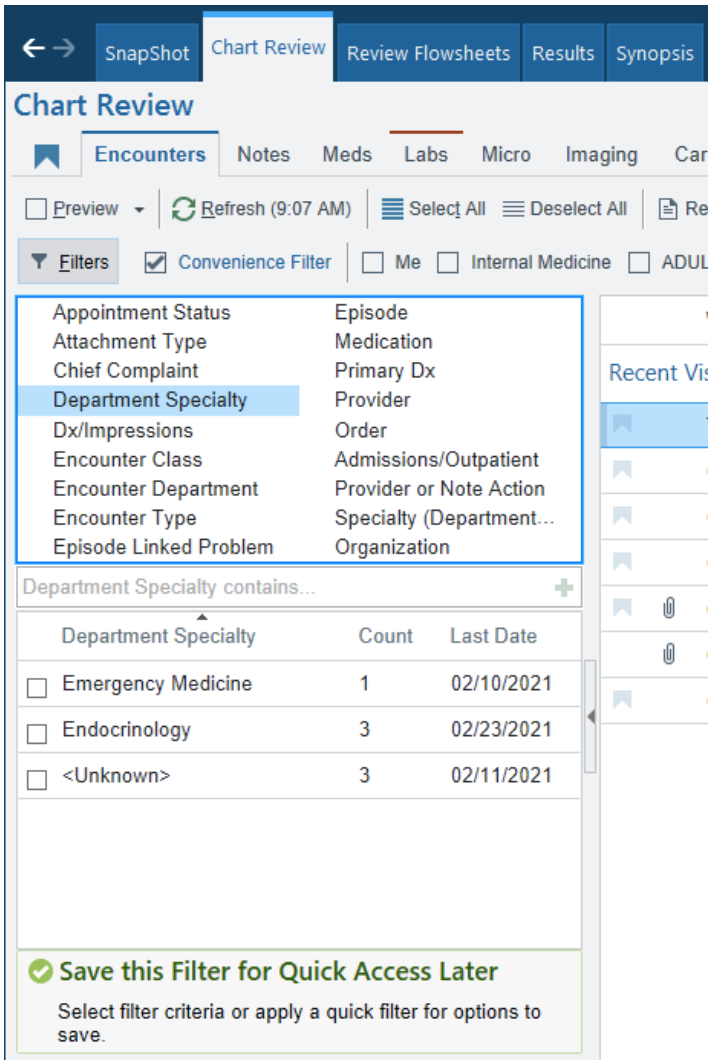
Oral Anti-Hyperglycemic Agents:

- Upon admission, oral agents and non-insulin injectables are discontinued per hospital policy, and patients are transitioned to basal-bolus therapy.
- Upon discharge or upon transfer to rehabilitation services, patients can be resumed on their previous oral agents if appropriate.

- If a non-endocrine service orders oral hypoglycemic agents, they are first informed by the pharmacy that this is not recommended. If the primary team still wants to order, they are directed by pharmacists to call an endocrine fellow on call for approval.

Other Helpful Information:

- To view the patient's previous endocrinology notes, if they are followed at UUH, this can be viewed under CHART REVIEW→ NOTES→ FILTERS--> DEPARTMENT SPECIALTY--> ENDOCRINOLOGY
- To view outside records, please go to the “CARE EVERYWHERE” tab which can be found on the main EPIC facesheet page. It may be under your “RARELY USED.”

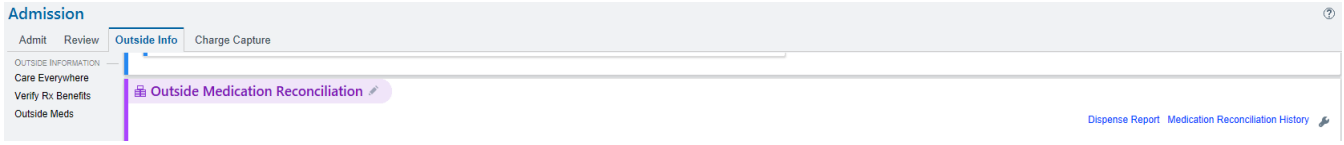


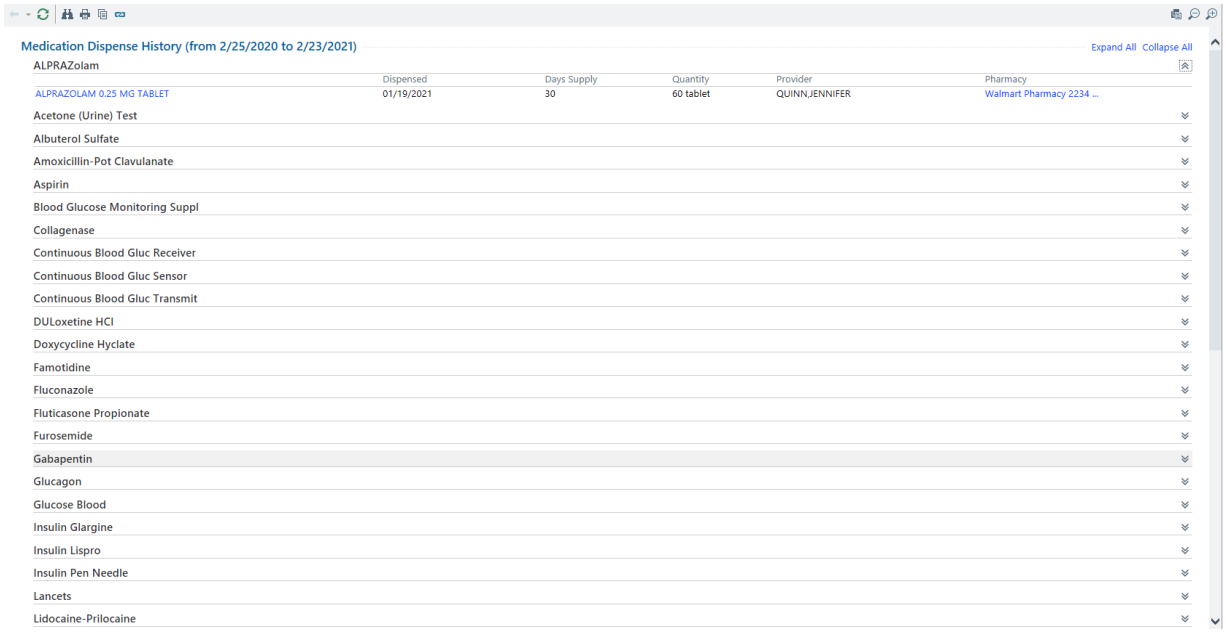
- Viewing labs can be done several ways: Under the “RESULTS REVIEW” tab, or under CHART REVIEW→ LABS. This view is helpful to see if labs have been drawn, with results in process.

- To view the patients current inpatient diabetes regimen, select “MANAGE ORDERS” under the main page, click view by “THERAPEUTIC CLASS”, then scroll to “ENDOCRINE AND METABOLIC DRUGS.”
    - This section lists all the endocrinology-related medications including insulin & prn glucagon.
- Home medications/regimen can be viewed under ‘MANAGE ORDERS’ → Home meds. *Please keep in mind that often this may not be accurate or up-to-date.*
- It is always best to obtain an accurate medication reconciliation from the patient and via pharmacy dispense report.

VIEWING THE PHARMACY DISPENSE REPORT:

- Select the “ADMISSION” tab on the main page. If it is not here, it will be found on the right side of the page under “RARELY USED.”
- From the “Admission” tab, select “OUTSIDE INFORMATION”→ then “DISPENSE REPORT” under “OUTSIDE MEDICATION RECONCILIATION”
- This will provide the medication fill history for the past year; if there are further questions, the pharmacy can be contacted for additional assistance.





HYPOGLYCEMIA MANAGEMENT

- Definition of HYPOGLYCEMIA: blood glucose <70 mg/dL;
    - Level 1: blood glucose 54-70mg/dL (3.0-3.9mmol/L)
    - Level 2*: blood glucose <54mg/dL (3 mmol/L)- threshold for neuroglycopenic symptoms
    - Level 3*: altered mental status and/or physical functioning requiring assistance from another person

**Both require IMMEDIATE correction.*

UUH HYPOGLYCEMIA PROTOCOL:

- This protocol for adults with diabetes, among others (with the most updated versions) can be found online in the Upstate policy database (off the Upstate Ipage)

Hypoglycemia Treatment -- Adult (continued) **PROC CM H-09A**

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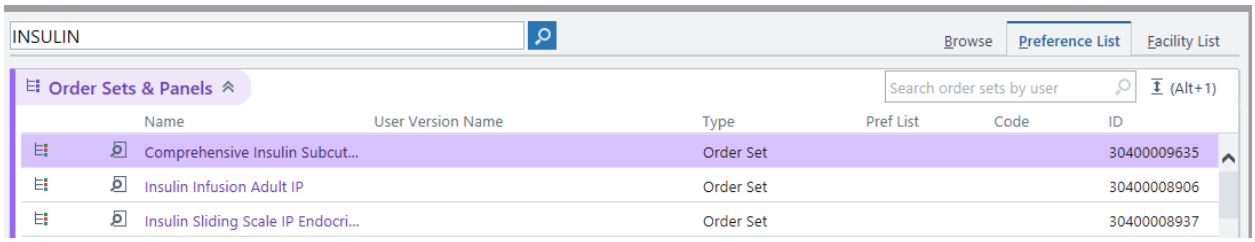
***For patients with Orders for Hypoglycemia Treatment**

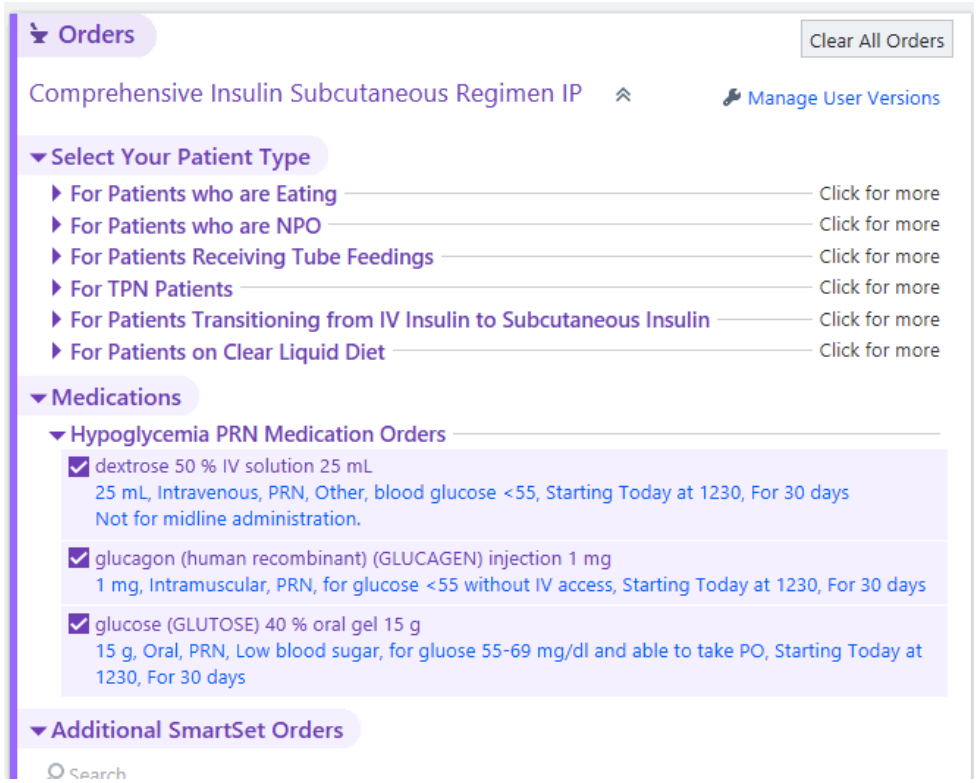
Patient Condition **TIME FRAME**	**Patients with severe hypoglycemia (NPO, taking PO, responsive, unresponsive or Gastric tube)**		**Responsive, Able to Eat**	**NPO or Unresponsive (Gastric Tube see last row)**	
POCT Blood Glucose	**< 55**		**55-69**	**55-69**	
IV Access	Has IV Access (not Midline)	No IV or has Midline only	With or without IV access	Has IV Access (not Midline)	No IV or has Midline only
Medications/ Treatment	25 ml D50 IV-push *****if able to eat wait to give food until glucose >70 (see appendix)	Glucagon 1 mg IM *****if able to eat wait to give food until glucose >70 (see appendix)	15 grams CHO (see appendix) or glucose gel/solution *****wait to give food until glucose >70 (see appendix)	25 ml D50 IV-push	Glucagon 1 mg IM
Additional Intervention		Turn patient on side (may induce vomiting)			Turn patient on side (may induce vomiting)
Repeat POCT glucose: 15 minutes	If glucose is <70 after treatment, repeat treatment. Once blood glucose is >70: Repeat POCT again in 15 minutes and then at least every hour x2 to ensure blood glucose is maintained >70. If blood sugar cannot be maintained >70, notify medical provider. Continue to monitor patient's POCT blood glucose as ordered.				
After treatment	**Always notify provider**. Give snack or meal if patient is able to eat once blood glucose is >70 (see snacks appendix A below)			**Always notify provider** and collaborate for further instructions or orders.	
If mealtime is <1 hour away	If eating meal, administer insulin in the 71-90 row of scale according to grams of CHO consumed. Do NOT administer insulin based on the recheck POCT blood glucose level after treatment for hypoglycemia.			For unresponsive patient, if patient is able to eat & has recovered, call provider for instruction regarding patient's ability to eat meal and insulin coverage	
If mealtime is >1 hour away	Provide a follow-up snack to conscious patient if able to eat. Snack should contain 15grams of carbohydrate with protein. See Appendix A for snacks. At next meal, perform new POCT blood glucose check and follow scale as written.				

Patients with Gastric Tube	**Blood glucose level <55**: see above all patients with severe hypoglycemia. **Blood glucose level 55-69**: Glucose solution/gel administered via tube with 30 mLs of water flush. Do NOT give feeding as treatment and do NOT give juice, milk, or soda down tube.	After treatment, **always notify provider**. If patient is scheduled for feeding, this may be started after treatment.

INPATIENT DIABETES ORDER SETS

- UUH utilizes standard order sets to apply best practice as well as prevent medication errors related to insulin dosing
- There are individual order sets for many patient situations (see screenshot below).
- While hospitalized, the preferred SQ long-acting insulin is glargine (Lantus) and the preferred short-acting insulin is lispro (Humalog). NPH and regular insulin are available for SQ use, but not preferred due to increased incidence of hypoglycemia with these formulations.
- To navigate to the order sets, click the “MANAGE ORDERS” tab → type “INSULIN” in the search bar → then select “Comprehensive Insulin Subcutaneous order set”
- Once in the order set, you can select the long-acting and short-acting insulin depending on patient’s diet status
- In the order set, you can also specify fingerstick frequency and emergency medications in case of hypoglycemia





Examples of low-dose, medium-dose and high-dose insulin sliding scales at our hospital:

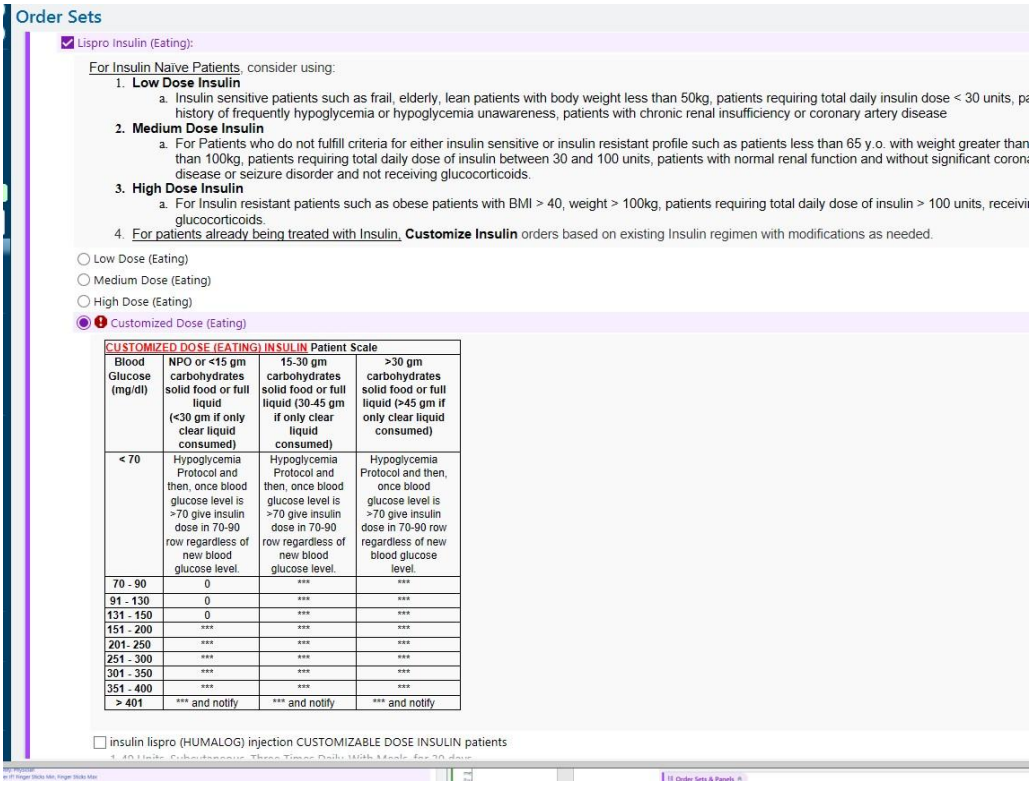
LOW DOSE (EATING) INSULIN Patient Scale			
Blood Glucose (mg/dl)	**NPO or <15 gm carbohydrates solid food or full liquid (<30 gm if only clear liquid consumed)**	**15-30 gm carbohydrates solid food or full liquid (30-45 gm if only clear liquid consumed)**	**>30 gm carbohydrates solid food or full liquid (>45 gm if only clear liquid consumed)**
< 70	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.
70 - 90	0	0	2
91 - 130	0	1	3
131 - 150	0	1	3
151 - 200	0	2	4
201- 250	1	3	5
251 - 300	2	3	5
301 - 350	2	4	6
351 - 400	3	4	7
> 401	4 and notify	5 and notify	8 and notify

MEDIUM DOSE (EATING) INSULIN Patient Scale			
Blood Glucose (mg/dl)	**NPO or <15 gm carbohydrates solid food or full liquid (<30 gm if only clear liquid consumed)**	**15-30 gm carbohydrates solid food or full liquid (30-45 gm if only clear liquid consumed)**	**>30 gm carbohydrates solid food or full liquid (>45 gm if only clear liquid consumed)**
< 70	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.
70 - 90	0	0	3
91 - 130	0	2	4
131 - 150	0	3	5
151 - 200	0	4	6
201- 250	2	5	8
251 - 300	4	6	10
301 - 350	6	8	12
351 - 400	8	10	14
> 401	10 and notify	12 and notify	16 and notify

HIGH DOSE (EATING) INSULIN Patient Scale			
Blood Glucose (mg/dl)	NPO or <15 gm carbohydrates solid food or full liquid (<30 gm if only clear liquid consumed)	15-30 gm carbohydrates solid food or full liquid (30-45 gm if only clear liquid consumed)	>30 gm carbohydrates solid food or full liquid (>45 gm if only clear liquid consumed)
< 70	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.	Hypoglycemia Protocol and then, once blood glucose level is >70 give insulin dose in 70-90 row regardless of new blood glucose level.
70 - 90	0	2	6
91 - 130	0	4	8
131 - 150	0	5	10
151 - 200	2	6	12
201- 250	4	8	14
251 - 300	6	10	16
301 - 350	8	12	18
351 - 400	10	14	20
> 401	12 and notify	16 and notify	22 and notify

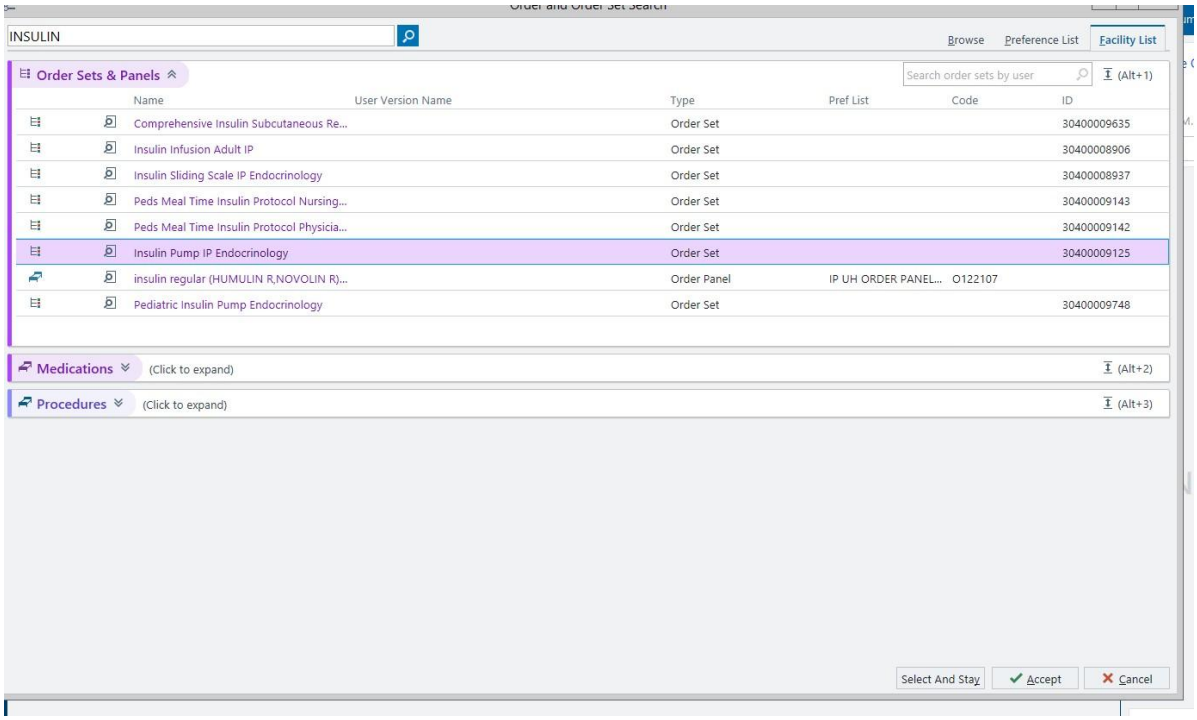
Ordering custom-dose insulin:

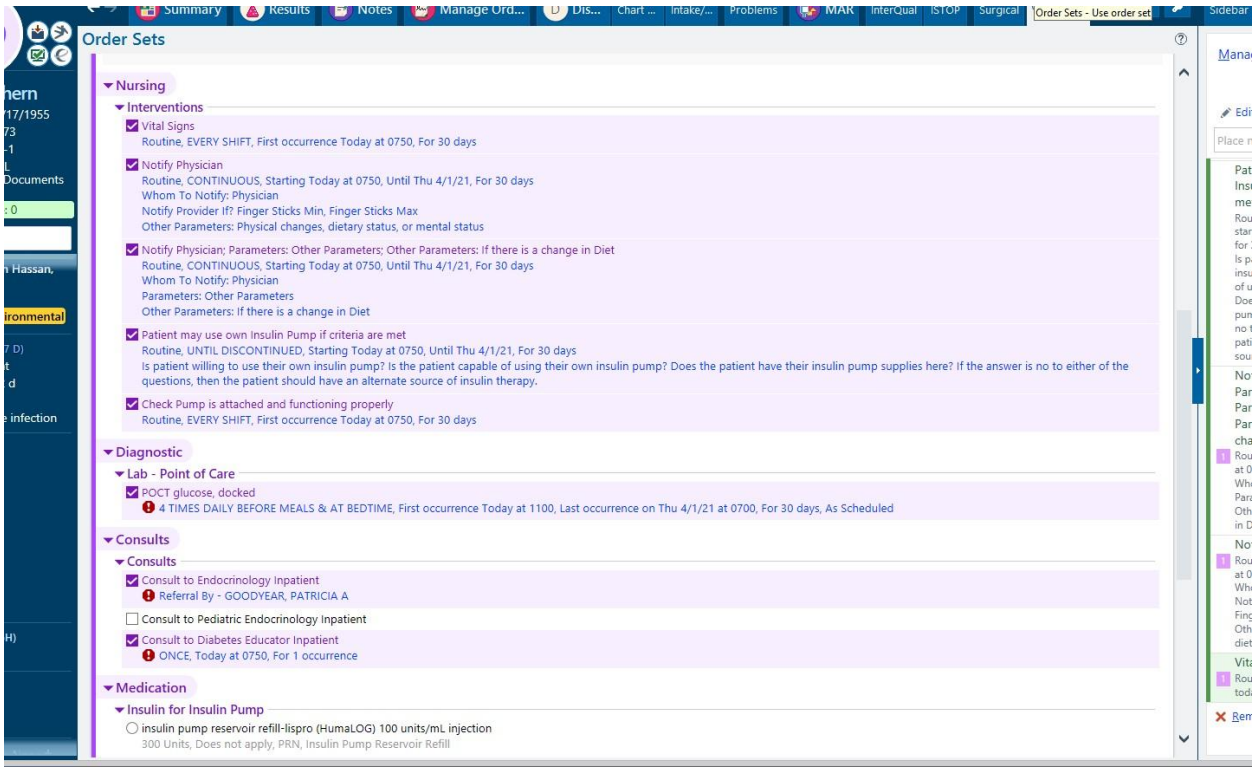
- When the pre-set scales are inadequate in terms of dosing or a different scale is needed based on insulin dose calculations, the custom-dose insulin order set can be used.
- To order, utilize the “COMPREHENSIVE INSULIN SUBCUTANEOUS ORDER SET” as above, and scroll to the bottom, selecting “CUSTOMIZED DOSE” under the lispro and glargine insulin order sets, respectively



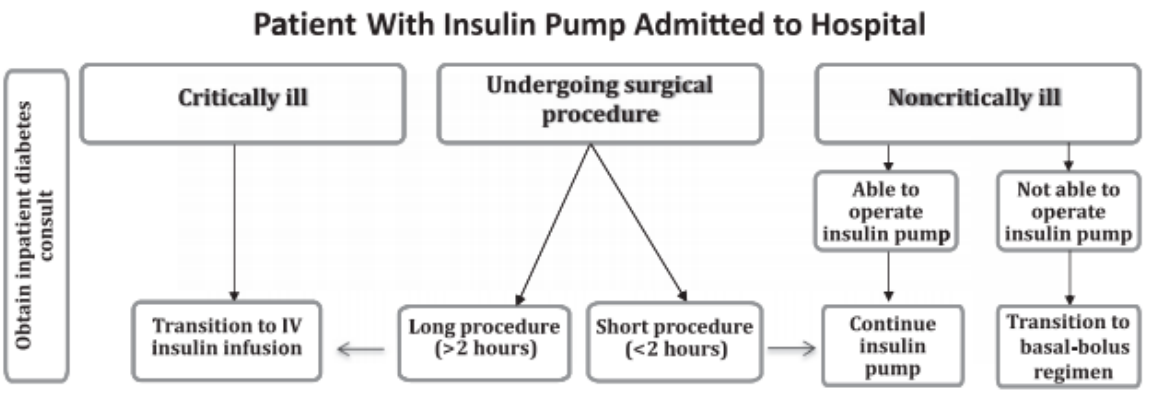
INSULIN PUMP POLICY

- When a patient is on insulin pump, insulin pump orders need to be placed, as below
    - Navigate to the “INSULIN PUMP IP ENDOCRINOLOGY” order set & select all appropriate orders
- Endocrinology needs to be consulted on ALL PATIENTS with an insulin pump





Guide to Management of patients on an insulin pump:



Changes to Pump Therapy With Imaging Studies	
X-ray/CT	Pump should be covered by lead apron
MRI	Pump and metal infusion set should be removed
Ultrasound	No need to remove pump but transducer should not be pointed directly at the pump
Cardiac catheterization	Pump should be covered by lead apron
Pacemaker/automatic implantable cardioverter defibrillator (AICD)	Pump should be covered by lead apron
Colonoscopy/EGD	Pump can remain in place
Laser surgery	Pump can remain in place

Resuming the insulin pump:

- If using a basal insulin, while off the pump, the effect of the insulin needs to have resolved (usually over 24 hours) after the last basal insulin injection, prior to starting insulin via the pump. *Careful attention should be made to the timing of insulin doses in order to prevent insulin stacking.*

Brief guide to insulin pump settings:

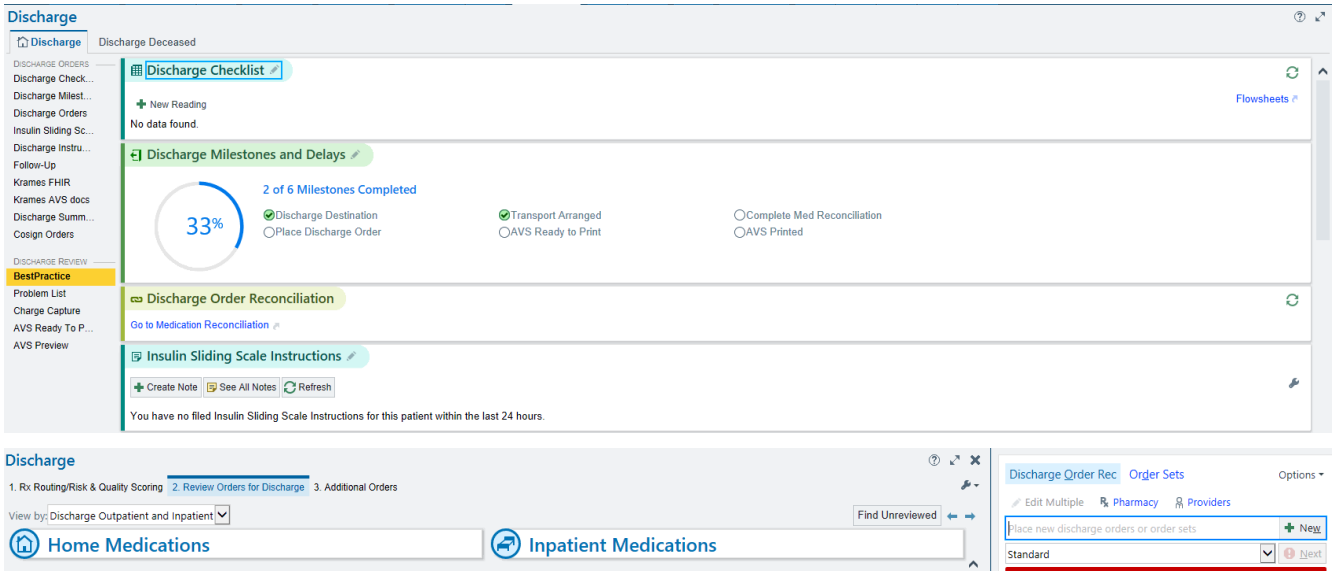
- Insulin sensitivity factor (ISF): How many points, in mg/dL, blood sugar drop is expected for each unit of insulin administered. Eg. Insulin sensitivity Ratio (ISR) 1:50 would mean that 1 unit of insulin will bring sugar down by 50 points.
- Carbohydrate ratio (ICR): Eg 1U:15g ratio. For every 15g of carbohydrate a patient eats, a patient will receive 1 unit of insulin.

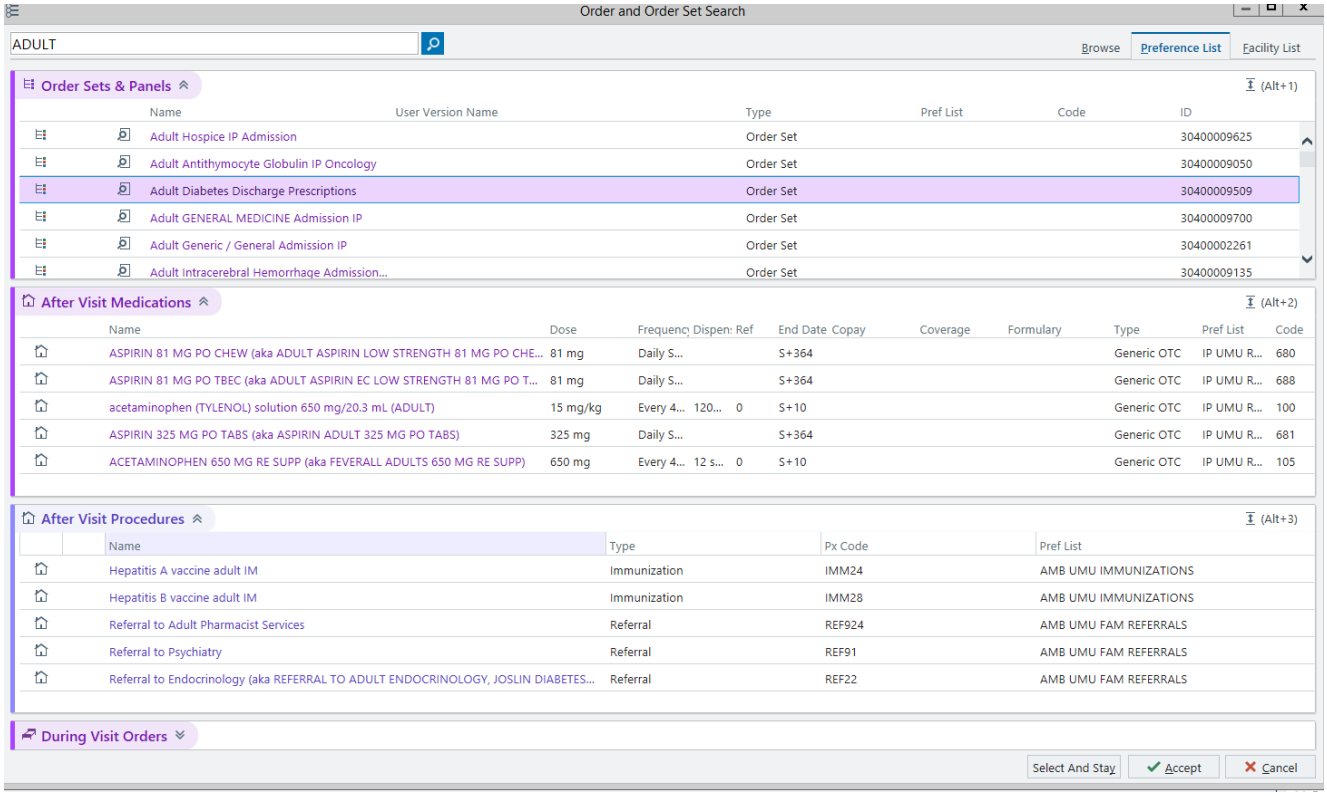
Brief guide to continuous glucose monitors (CGM):

- CGMs are devices that measure interstitial glucose. They differ from insulin pumps in a variety of ways. CGMs monitor the blood glucose level, but do not provide insulin.
- CGMs are helpful as they provide frequent blood glucose measurements and glucose trends, however they are NOT approved by the FDA for routine inpatient (ICU and non-ICU) use and are currently NOT available at UUH except for certain COVID patients.
- Some patients may continue to use CGM in the hospital but per hospital policy, nursing staff is required to obtain finger stick glucose values and use those values to administer insulin.

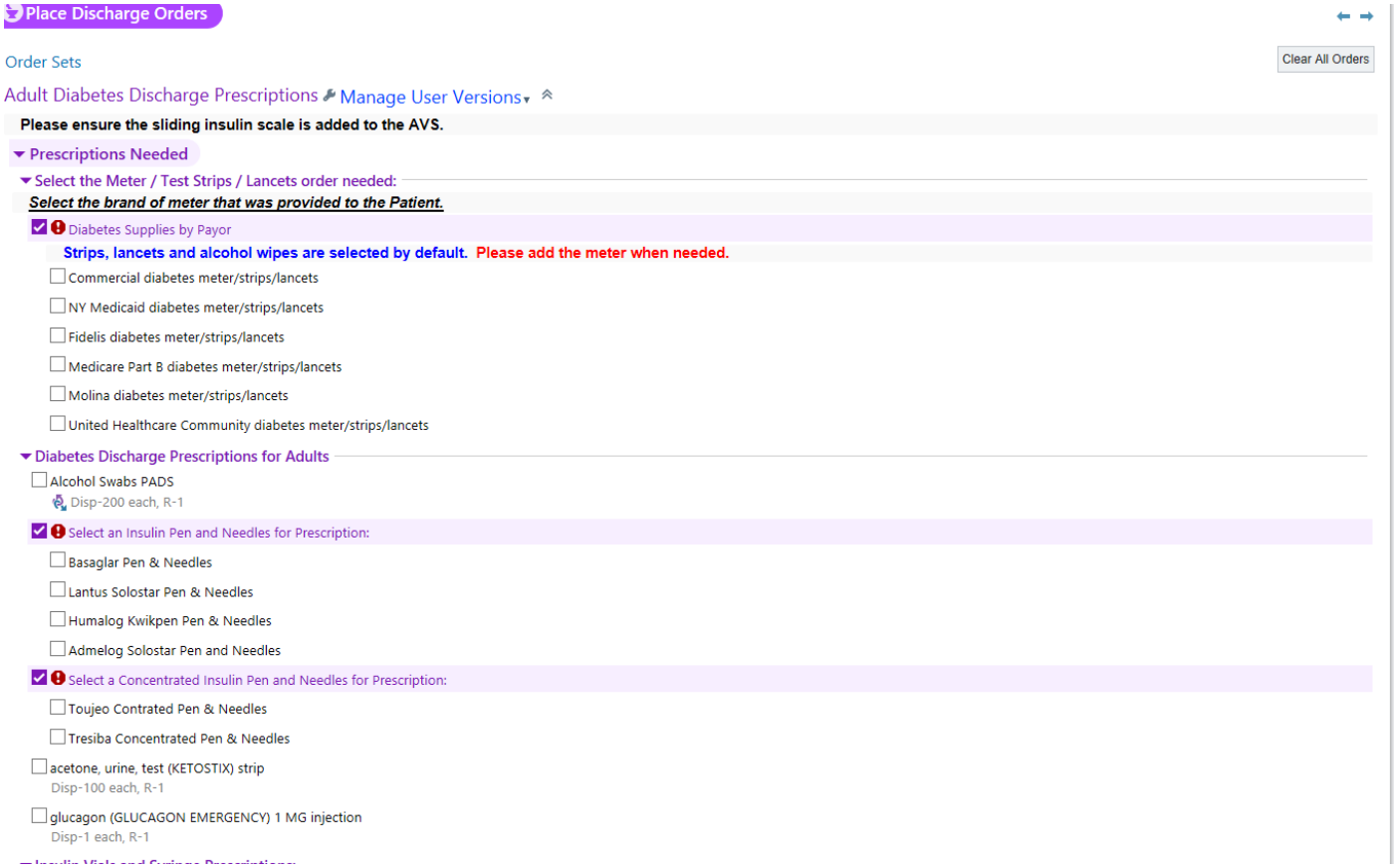
INPATIENT DISCHARGE ORDER SETS

- To facilitate an easier discharge, specific Diabetes discharge order sets have been created.
- To navigate to the order sets, click the “DISCHARGE” tab → select “DISCHARGE ORDERS” on the left-hand side → then select “REVIEW ORDERS FOR DISCHARGE”
- At this point you can type in “ADULT” or “DIABETES” and select the “ADULT DIABETES DISCHARGE PRESCRIPTIONS” order set





- Once in the order set, you can select the supplies needed (meter, swabs, brand of insulin pen and needles) according to type of insurance, which should help with approval.
- If the patient will be needing supplies for discharge, it is best to put these orders in 1-2 days in advance if possible, to ensure the supplies are approved by insurance.


Place Discharge Orders
Order Sets
Clear All Orders
Adult Diabetes Discharge Prescriptions
Manage User Versions
Please ensure the sliding insulin scale is added to the AVS.
Prescriptions Needed
Select the Meter / Test Strips / Lancets order needed:
Select the brand of meter that was provided to the Patient.
Diabetes Supplies by Payor
Strips, lancets and alcohol wipes are selected by default. Please add the meter when needed.
Commercial diabetes meter/strips/lancets
NY Medicaid diabetes meter/strips/lancets
Fidelis diabetes meter/strips/lancets
Medicare Part B diabetes meter/strips/lancets
Molina diabetes meter/strips/lancets
United Healthcare Community diabetes meter/strips/lancets
Diabetes Discharge Prescriptions for Adults
Alcohol Swabs PADS
Disp-200 each, R-1
Select an Insulin Pen and Needles for Prescription:
Basaglar Pen & Needles
Lantus Solostar Pen & Needles
Humalog Kwikpen Pen & Needles
Admelog Solostar Pen and Needles
Select a Concentrated Insulin Pen and Needles for Prescription:
Toujeo Contrated Pen & Needles
Tresiba Concentrated Pen & Needles
acetone, urine, test (KETOSTIX) strip
Disp-100 each, R-1
glucagon (GLUCAGON EMERGENCY) 1 MG injection
Disp-1 each, R-1

DIABETES EDUCATION AND DISCHARGE

- Discharge planning should begin at admission, in order to:
    - Reduce length of hospital stay
    - Reduce readmission rates
    - Increase patient satisfaction

Diabetes Education Resources:

www.thepatientchannelnow.com (Pass code 06760)

Please watch the following videos. Mark the date you watched the video on the line. They are all 5-7 mins long. Write down any questions you may have!

Managing Your Diabetes: An Introduction ____

Managing Your Diabetes: Healthy Eating _____

Managing Your Diabetes: Being Active _____

Managing Your Diabetes: Monitoring _____

Managing Your Diabetes: Taking Medication _____

Managing Your Diabetes: Problem Solving _____

Managing Your Diabetes: Reducing Risks _____

Managing Your Diabetes: Healthy Coping _____

Hypoglycemia ____

Diabetes: Treatments (Part 1) _____

Diabetes: Treatments (Part 2) _____

Diabetes: Treatments (Part 3) _____

Diabetes: Treatments (Part 4) _____

Diabetes: Avoiding Complications (Part 1) _____

Diabetes: Avoiding Complications (Part 2) _____

Diabetes: Avoiding Complications (Part 3) _____

Diabetes: Avoiding Complications (Part 4) _____

Your Care at Home: Checking Blood Sugar _____

Giving Yourself Insulin _____

Your Care at Home: Taking Insulin _____

ADA GUIDELINES

- Linked below are the 2021 Standards of Care in Diabetes (ADA guidelines)
    - 2021 Standards of Care in Diabetes

HELPFUL INPATIENT CASES

- Powerpoint linked below with several patient presentations that occur in the inpatient settings & how to best manage them
    - Inpatient DM management ppt

REFERENCES

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2. Umpierrez GE, Klonoff DC. Diabetes Technology Update: Use of Insulin Pumps and Continuous Glucose Monitoring in the Hospital. Diabetes Care. 2018 Aug;41(8):1579-1589. doi: 10.2337/dci18-0002. Epub 2018 Jun 23. PMID: 29936424; PMCID: PMC6054505.

3. American Diabetes Association. 7. Diabetes Technology: *Standards of Medical Care in Diabetes-2020*. Diabetes Care. 2020 Jan;43(Suppl 1):S77-S88. doi: 10.2337/dc20-S007. Erratum in: Diabetes Care. 2020 Aug;43(8):1981. PMID: 31862750.

4. JOSLIN DIABETES CENTER and JOSLIN CLINIC GUIDELINE for INPATIENT MANAGEMENT OF SURGICAL and ICU PATIENTS with DIABETES (Pre, Peri and Postoperative Care) 12 30 2015; updated 04/22/19