

2010
ASHP National Clinical Skills Competition
NATIONAL CASE

2010 ASHP Clinical Skills Competition

NATIONAL COMPETITION CASE

Directions to Clinical Skills Competition Participants

Identify the patient's acute and chronic medical and drug therapy problems. Recommend interventions to address the drug therapy problems using the forms supplied (Pharmacist's Patient Data Base, Drug Therapy Assessment Worksheet [DTAW], and Pharmacist's Care Plan).

IMPORTANT NOTE: Only the Pharmacist's Care Plan will be used for evaluation purposes. The Drug Therapy Assessment Worksheet is simply a tool to assist you in the decision-making process.

**ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S PATIENT DATA BASE FORM**

Demographic and Administrative Information		
Name: JM		Patient ID: 1945921
Address: 1510 Adams Street Nutley, NJ		Room & Bed: 2110-A
Date of Birth: 4/24/1958 (52 yrs)		Physician: Schwartz
Height: 6'1" (185 cm) Weight: 205 lbs (93.2 kg)		Pharmacy: N/A
Gender: Male		Race: African-American
CC (on admission to Burn unit): "I have blisters everywhere, including in my mouth"		Religion: Unknown
History of Present Illness	Vitals & Other Tests	
JM was evaluated by his primary physician on 12/01/10 for fever, suprapubic tenderness, and dysuria and received a course of Trimethoprim/Sulfamethoxazole. After the third dose, on 12/2/10, the patient noticed a blister on his left neck with more blisters developing last night. The patient continued to have vague symptoms including fever, tremor, vomiting, and loss of appetite when he was seen at 10am in the Emergency Department at an outside hospital yesterday (on 12/03/10). He was transferred that day to University Hospital for specialized treatment at the Burn Center. He was noted to be responsive and anxious. His wounds showed large thin-walled blisters in his oral mucosa, tongue, neck, his entire back, right flank, buttocks, and areas of the right thigh with areas of skin epidermal looseness. The patient was admitted on 12/03/10 to the Burn Center with a diagnosis of Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis involving 25% total body surface area.	12/03/10 (at admission) BP 150/92 mm/Hg Pulse 84 bpm Temp 100.3° F Resp 24 breaths/min Pain 8/10	12/04/10 (7am rounds) BP 152/90 mm/Hg Pulse 80 bpm Temp 100.1° F Resp 18 breaths/min Pain 4/10
Past Medical History	Labs	
Significant for hypertension for the last 5 years	12/03/10 (at admission) Na 138 mEq/L K 4.4 mEq/L Cl 100 mEq/L CO ₂ 25 mEq/L BUN 15 mg/dL SCr 0.83 mg/dL Glucose 115 mg/dL Calcium 8.6 mg/dL Albumin 4.0 g/dL Mg 2.1 mEq/L Phos 2.2 mg/dL WBC 10.3 K/mm ³ RBC 4.9 mil/mcL Hgb 15.1 g/dL Hct 45.3 Plt 196 K/mm ³	12/04/10 (7am rounds) Na 129 mEq/L K 3.8 mEq/L Cl 101 mEq/L CO ₂ 25 mEq/L BUN 14 mg/dL SCr 0.87 mg/dL Glucose 110 mg/dL Calcium 8.7 mg/dL Albumin 3.7 g/dL Mg 2.1 mEq/L Phos 2.4 mg/dL WBC 7.2 K/mm ³ RBC 4.7 mil/mcL Hgb 15.0 g/dL Hct 45.0 Plt 179 K/mm ³ 12hr Urine output 1.8L UOsm = 500 mOsm/L UNa = 10 mEq/L
Family History		
Father: 71, alive, hypertension Mother: 69, alive, hypertension, osteoarthritis Sister: 38, alive, nothing significant Brother: 44, alive, nothing significant		

This form is to be used ONLY in the ASHP Clinical Skills Competition. Any other use of this form requires permission from ASHP.

Social History	
<u>Tobacco</u> : Nonsmoker <u>ETOH</u> : None <u>Illicit Drugs</u> – None <u>Caffeine</u> : 1 cup of coffee/day <u>Occupation</u> : Restaurant owner <u>Status</u> : Married <u>Children</u> : 2 (2 males 26 yrs, 28 yrs) <u>Physical Activity</u> : No regular exercise <u>Diet</u> : No specifics	Urine Culture Pending Urinalysis Specific gravity=1.013 Protein=30 mg/dL Glucose=Negative WBC= >4000 cells/ μ L RBC=60 cells/ μ L Bacteria=2920 CFU/ μ L pH=6.0 Nitrite=Negative Leucocyte esterase=Large Hyaline casts
Physical Exam (12/04/2010 @ 7am rounds)	
General: No acute distress but appears uncomfortable Skin: Swelling around the eyes, tongue, left posterior neck, central back, right flank, right chest, genitals, outer right thigh Musc/Ext: Normal except for skin findings HEENT: PERRLA, EOMI, blistering to oral mucosa, mouth, and throat Chest/Resp: CTA bilaterally CV: RRR, S1S2, no murmurs, rubs, gallops Abd: Soft, nontender, bowel sounds heard GU: Suprapubic pain Neuro: A&O x 3, pain score 4/10	
Plan: The patient arrived in the burn unit on 12/03 and was immediately assessed for the degree of skin involvement. The patient was sedated and given pain medication, brought to surgery for debridement of nonviable tissue, and started on crystalloid fluids at a rate of 4 mL/kg/%TBSA (Parkland Formula) for the first 24 hours. Other treatments are listed in the medication list below. Today (12/04), on morning rounds the patient is reassessed during his daily bath. He reports his pain to be 4 out of 10 prior to going for his bath. His wounds are unwrapped, washed, and examined. Fluids and medication management are currently being discussed. The patient has a nasogastric tube and a foley catheter.	

ASHP CLINICAL SKILLS COMPETITION

PHARMACIST'S PATIENT DATA BASE FORM (Cont.)

Allergies/Intolerance's		Prescription Coverage	
Penicillin/Beta-lactam allergy- hives		Insurance: Blue Cross Blue Shield	
		Copay: \$25 Generic/ \$50 Brand	
		Cost per month: \$25	
		Annual Income: \$80,000	
Current Inpatient Drug Therapy			
Drug Name/Dose/Strength/Route	Prescribed Schedule	Duration Start–Stop Dates	Compliance/Dosing Issue
1. Morphine 10 mg IV	Daily PRN bath/ debridement	12/3/10	
2. Oxycodone/APAP 5/325 1 tablet PO	Q6hr PRN moderate pain (4-6)	12/3/10	
3. Oxycodone/APAP 5/325 2 tablets PO	Q6hr PRN severe pain (7-10)	12/3/10	
4. Morphine 2 mg IV	Q6hr	12/3/10	
5. Enoxaparin 40 mg subcutaneous	Daily	12/3/10	
6. IVIG 45 gm IV	Daily	12/3/10	
7. Methylprednisolone 100 mg IV	Q8hr	12/3/10	
8. Diphenhydramine 50 mg tablet PO	Q4hr 30 min prior to morphine	12/3/10	
9. Docusate 100 mg capsule PO	Q8hr	12/3/10	
10. Lactated Ringers IV	400 mL/hr	12/3/10	
11. Lacri-lube OU	3-4 times/day	12/3/10	
12. Silver sulfadiazine 1% cream topical	Daily after bath with wound dressing	12/3/10	
13. Famotidine 20 mg IV	BID	12/3/10	
14. Hydrochlorothiazide 25mg tablet PO	Daily	12/3/10	
15. Trimethoprim/Sulfamethoxazole DS tablet PO	BID	12/3/10	
Medication History			
HOME MEDS			
Hydrochlorothiazide 25 mg tablet PO	Daily	2005 to present	
Trimethoprim/Sulfamethoxazole DS tablet PO	BID	12/1/10 to present	

Enteral Formulary

ASHP CLINICAL SKILLS COMPETITION
Not evaluated for Competition

Information provided is per unit size												
Product	Cal/ml	Unit Size	Calories	CHO (g)	PRO (g)	FAT (g)	Na (mg)	K (mg)	OSM	Non-Pro Cal:N ratio	Water (g)	Comments
Tube Feeding Products - Ready To Hang:												
Osmolite 1.0	1	1 Liter	1060	143.9	44.3	34.7	930	1570	300	125 to 1	842	Standard tube feeding. Low Residue.
Jevity 1.2	1.2	1 Liter	1200	169.4	55.5	39.3	1350	1850	450	110 to 1	807	Standard tube feeding with fiber. 18 gm fiber per liter.
Glucerna 1.0	1	1 Liter	1000	95.6	41.8	54.4	930	1570	355	125 to 1	853	For abnormal glucose tolerance. 14.4 gm fiber per liter.
Perative	1.3	1 Liter	1300	180.3	66.7	37.3	1040	1735	460	97 to 1	790	Nutrient dense semi-elemental feeding for metabolically stressed patients.
Pulmocare	1.5	1 Liter	1500	105.7	62.6	93.3	1310	1960	475	125 to 1	785	High fat, low CHO to minimize CO ₂ production.

Drug Therapy Assessment Worksheet (DTAW)

The Drug Therapy Assessment Worksheet (DTAW) will serve as a guide to identify any drug-related problems that your patient may have. You may make notes on the DTAW. **However, the Drug Therapy Assessment Worksheet will not be scored.** As you proceed through all the questions on the DTAW, you will accumulate a list of drug therapy problems. All of these problems should be assessed on your Pharmacist's Care Plan. Drug-related problems may be listed as separate items on your Pharmacist's Care Plan or addressed in your recommendations for therapy of the acute or chronic disease states that the medicines are being used to treat. Teams will be evaluated on identifying and making appropriate recommendations for drug-related problems in the following areas below:

1. Correlation between drug therapy and medical problems
2. Appropriate drug selection
3. Drug regimen
4. Therapeutic duplication
5. Drug allergy or intolerance
6. Adverse drug events
7. Interactions: drug–drug, drug–disease, drug–nutrient, and drug–laboratory test
8. Social or recreational drug use
9. Failure to receive therapy
10. Financial impact
11. Patient knowledge of drug therapy

ASHP CLINICAL SKILLS COMPETITION DRUG THERAPY ASSESSMENT WORKSHEET (DTAW)

Type of Problem	Assessment	Presence of Drug-Related Problem	Comments/Notes
Correlation between Drug Therapy and Medical Problems	<p>Are there drugs without a medical indication?</p> <p>Are any medications unidentified (are any unlabeled or are any—prior to admission/clinic visit—unknown)?</p> <p>Are there untreated medical conditions? Do they require drug therapy?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Appropriate Drug Selection	<p>What is the comparative efficacy of the chosen medication(s)?</p> <p>What is the relative safety of the chosen medication(s)?</p> <p>Has the therapy been tailored to this individual patient?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Drug Regimen	<p>Are the prescribed dose and dosing frequency appropriate—within the usual therapeutic range and/or modified for patient factors?</p> <p>Is pm use appropriate for those medications either prescribed or taken that way?</p> <p>Is the route/dosage form/mode of administration appropriate, considering efficacy, safety, convenience, patient limitations, and cost?</p> <p>Are doses scheduled to maximize therapeutic effect and compliance and to minimize adverse effects, drug interactions, and regimen complexity?</p> <p>Is the length or course of therapy appropriate?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Therapeutic Duplication	<p>Are there any therapeutic duplications?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Drug Allergy or Intolerance	<p>Is the patient allergic to or intolerant of any medicines (or chemically related medications) currently being taken?</p> <p>Is the patient using any method to alert health care providers of the allergy/intolerance (or serious medical problem)?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	

ASHP CLINICAL SKILLS COMPETITION DRUG THERAPY ASSESSMENT WORKSHEET (DTAW)

Type of Problem	Assessment	Presence of Drug-Related Problem	Comments/Notes
Adverse Drug Events	Are there symptoms or medical problems that may be drug induced? What is the likelihood that the problem is drug related?	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Interactions: Drug-Drug, Drug-Disease, Drug-Nutrient, and Drug-Laboratory Test	<p>Are there drug-drug interactions? Are they clinically significant?</p> <p>Are any medications contraindicated (relatively or absolutely) given patient characteristics and current/past disease states?</p> <p>Are there drug-nutrient interactions? Are they clinically significant?</p> <p>Are there drug-laboratory test interactions? Are they clinically significant?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Social or Recreational Drug Use	<p>Is the patient's current use of social drugs problematic?</p> <p>Could the sudden decrease or discontinuation of social drugs be related to patient symptoms (e.g., withdrawal)?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Failure to Receive Therapy	<p>Has the patient failed to receive a medication due to system error or noncompliance:</p> <p>Are there factors hindering the achievement of therapeutic efficacy?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Financial Impact	<p>Is the chosen medication(s) cost effective?</p> <p>Does the cost of drug therapy represent a financial hardship for the patient?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	
Patient Knowledge of Drug Therapy	<p>Does the patient understand the purpose of his or her medication(s), how to take it, and the potential side effects of therapy?</p> <p>Would the patient benefit from education tools (e.g., written patient education sheets, wallet cards, and reminder packaging)?</p>	<ol style="list-style-type: none"> 1. A problem exists. 2. More information is needed for a determination. 3. No problem exists or an intervention is not needed. 	

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Evaluated for
competition

ASHP Clinical Skills Competition - Pharmacist's Care Plan

Problem Identification and Prioritization with Pharmacist's Care Plan

Team # _____

- A. List all health care problems that need to be addressed in this patient using the table below.
- B. Prioritize the problems by indicating the appropriate number in the "Priority" column below:
 - 1 = Most urgent problem (**Note:** There can only be one most urgent problem)
 - 2 = Other problems that must be addressed immediately or during this clinical encounter; **OR**
 - 3 = Problems that can be addressed later (e.g. a week or more later)

**Please note, there should be only a "1", "2", or "3" listed in the priority column, and the number "1" should only be used once.*

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

ASHP Clinical Skills Competition - Pharmacist's Care Plan

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Problem Identification and Prioritization with Pharmacist's Care Plan

Team # _____

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

ASHP Clinical Skills Competition - Pharmacist's Care Plan

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Problem Identification and Prioritization with Pharmacist's Care Plan

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Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

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Problem Identification and Prioritization with Pharmacist's Care Plan

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Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

ASHP Clinical Skills Competition - Pharmacist's Care Plan

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Problem Identification and Prioritization with Pharmacist's Care Plan

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Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

ASHP Clinical Skills Competition - Pharmacist's Care Plan

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Problem Identification and Prioritization with Pharmacist's Care Plan

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Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

ASHP Clinical Skills Competition - Pharmacist's Care Plan

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Problem Identification and Prioritization with Pharmacist's Care Plan

Team # _____

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints

2010
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ANSWER KEY

ASHP Clinical Skills Competition - Pharmacist's Care Plan

Evaluated for competition

Problem Identification and Prioritization with Pharmacist's Care Plan

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**Please note, there should be only a "1", "2", or "3" listed in the priority column, and the number "1" should only be used once.*

Health Care Problem	Priority	Therapeutic Goals	Recommendations for Therapy	Monitoring Parameters and Endpoints
Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis	1	Prevent progression of symptoms	Discontinue Trimethoprim/Sulfamethoxazole, Hydrochlorothiazide and silver sulfadiazine	Monitor skin and condition of current lesions
		Improve survival	Increase IVIG dose to 93 gm/day (1gm/kg/day) and continue for a total of 3 days	Monitor for areas of epidermal and mucosal detachment, tachycardia (HR>100 bpm), CBC daily for anemia (RBC<4.5 mil, HCT<40%), CHEM7 daily for acute renal failure (serum creatinine >1.2 gm/dL)
		Resolution of symptoms	Note to judges: can round to vial size or round for IBW	Monitor CHEM7 daily for hyperglycemia (glucose>110 mg/dL), and CBC daily for leukocytosis (WBC> 11 x10 ⁹ cells/L), and dyspnea/wheezing
		Wound care	Continue Methylprednisolone 100 mg IV q8h (Can give up to 1.5gm/24 hrs)	Monitor for areas of epidermal detachment
			Debridement of nonviable tissue	Monitor that debrided areas are covered with the topical ointment and are properly wrapped
			Discontinue silver sulfadiazine and start Gentamicin ointment 0.1% or 0.3% applied with every dressing change (or any topical antimicrobial <u>other than a sulfonamide-based ointment like silver sulfadiazine or mafenide</u>)	Monitor for s/s of infection including elevated WBC (>10.5 x10 ⁹ cells/L), fever (temp>101 F), neutrophils>76%

			Continue Lacrilube (or other ocular lubricant) apply 3-4 times a day	Monitor that eyes are moist
			Continue diphenhydramine 50 mg orally q4h (max daily dose is 400mg) or other antihistamine to prevent pruritis with skin regrowth and morphine use (also included in pain management section). Change to oral solution	Monitor for excess sedation/drowsiness, improved comfort level
Hypovolemic hypotonic hyponatremia	2	Correct electrolyte (hyponatremia) and fluid imbalance	Switch IV fluids from Lactated Ringers solution (130 mEq Na content) to 0.9% Sodium Chloride (154 mEq Na content) at a rate of 300-400 mL/hr	Monitor 24-hr urine collection and maintain urine output at 0.5-1 mL/kg/hr Monitor chemistry (CHEM7) daily for serum sodium and maintain between 136-145 mEq/L
			<ol style="list-style-type: none"> 1. Calculate Na deficit (to 140 mEq) = $0.6 * 93\text{kg} * (140 - 129) = 279 \text{ mEq}$ 2. Calculate amount of NS to use = $279\text{mEq} / 154 \text{ mEq/L} = 1.81 \text{ L NS}$ 3. Calculate maximum rate (2 mEq/L/hr) = $(140 \text{ mEq/L} - 129\text{mEq/L}) / 2 \text{ mEq/L/hr} = 11 \text{ mEq/L} / 2 \text{ hr} = 5.5 \text{ hr} \rightarrow 1810 \text{ mL} / 5.5 \text{ hr} = 329 \text{ mL/hr} \rightarrow$ a rate of 300-400 mL/hr should be sufficient to raise serum Na and maintain fluid balance based on maintenance fluid rate + thermal injury adjustment <p>[Bonus: Can subtract 112 mL/hr from NS fluid rate based on enteral formula intake below but may not be necessary – monitor fluid balance]</p>	
Pain	2	Pain management Complete absence of pain but this is rarely achieved so adequate control of pain with minimal side effects	Evaluate the time since the last dose and the patient's daily baseline or normal threshold for pain Convert solid dosage forms to liquid or IV	If pain is greater than normal, see recommendations below. Patient has lesions in his mouth so IV or liquid dosage forms down the NGT are preferred. Evaluate for ability to swallow solid dosage forms q2days
			Increase morphine 2mg frequency from q6h to q4h or increase oxycodone/APAP for breakthrough pain from q6h to q4h	Monitor for improvements in pain score. Monitor for pain scores <4
			Continue IV morphine 10mg PRN for daily debridement	Monitor for respiratory depression (RR < 12 bpm), constipation (see bowel regimen below), vomiting

			Switch PO oxycodone/APAP tablets PRN to the Roxicet® solution 5mg+325mg/5mL via NGT	
			Consider “magic mouth wash” (1:1:1 mixture of viscous lidocaine, magnesium-aluminum hydroxide, diphenhydramine) 5 mL swish and spit q4h	Monitor for improvement in oral mucosal lesions. Consider a swallowing evaluation to determine if patient can take solid dosage forms.
			Continue diphenhydramine 50 mg orally q4h (max daily dose is 400mg) to prevent pruritis with skin regrowth and morphine use Change to oral solution	
			Consider converting morphine 2 mg q6h (8 mg/day) to hydromorphone (1.2 mg/day) IV 0.2 mg q4h to reduce pruritis due to histamine release This is an example conversion, if want to consider changing to hydromorphone. This may not be necessary as the patient is currently premedicated with Diphenhydramine.	Monitor for excess sedation/ drowsiness, improved comfort level
			Bowel regimen: Continue docusate but switch to the liquid form (10mg/mL) and add a stimulant like senna syrup 8.8mg/5mL	Monitor for constipation (bowel movements <1 every 3 days)
Nutrition	2	Prevent malnutrition due to hypermetabolism Promote skin healing and regrowth Prevent fluid and electrolyte imbalances	Start Perative enteral formula via NGT at a rate of 112 mL/hr <i>Any enteral formula is acceptable as long as the rate is appropriate based on daily caloric needs</i>	Monitor for diarrhea/ constipation, vomiting, gastric residuals >150 mL, aspiration of formula, weight gain, CHEM7 daily for imbalances (Na 136-145 mEq/L, K 3.5-5.0 mEq/L, glucose 65-109 mg/dL, albumin 3.0-5.5 gm/dL), 24-hr urine collection and maintain urine output at 0.5-1 mL/kg/hr

			<ol style="list-style-type: none"> 1. Identify daily caloric requirements using the Harris-Benedict formula for basal energy expenditure * 2.0 for thermal injury = $66.5 + (13.8 * \text{weight in kg}) + (5 * \text{height in cm}) - (6.76 * \text{age}) = (66.5 + 1286.16 + 925 - 531.52) = 1746.14 * 2.0 = 3492$ kcal per day 2. Select an enteral formulation that will meet the daily caloric requirements (ie. Perative 1300 kcal/L → 3492 kcal per day/1300 kcal per L = 2.686 L per day) 3. Identify an administration rate = 2686 mL/24 hr = 112 mL/hr <p><i>The Harris-Benedict formula can use an adjustment factor of 1.5 instead of 2.0. This would result in a caloric requirement of 2619 kcal/day which can be accomplished with using Perative at 83 mL/hr.</i></p>	
Stress Ulcer Prophylaxis	2	Prevent the development of stress ulcers	Continue famotidine 20 mg IV BID	Monitor daily for s/s GIB including RBC and HCT decline, black tarry stool, blood in gastric residuals, hematemesis. Monitor for thrombocytopenia
VTE prophylaxis	2	Prevent DVT/PE	Continue enoxaparin 40mg daily subcutaneous	Monitor daily for difficulty breathing, leg pain, bleeding
Uncontrolled hypertension	2	Reduce blood pressure Reduce complications associated with hypertension	Restart diuretic but switch to liquid or IV dosage form. <ol style="list-style-type: none"> 1. Ethacrynic acid 50-200 mg IV daily 2. Consider adding second agent like IV metoprolol or IV enalaprilat (Oral medications may be crushed and administered via NG Tube, e.g. switching patient to CCB (amlodipine) or ACE-Inhibitor (Enalapril).	<ul style="list-style-type: none"> • Monitor for BP <140/90, monitor CHEM7 daily for Na (136-145) and K (3.5-5). • Recommend potassium-rich foods like bananas, orange juice, etc at discharge due to diuretic use • Monitor for edema with CCB • Monitor renal function (BUN/SCr) and K+ for ACE-I
Urinary Tract Infection	2	Incomplete course of antibiotics, prevent dysuria and suprapubic pain	Start levofloxacin 250 mg IV daily or ciprofloxacin 400 mg IV BID for 7-14 days. Can switch levofloxacin to oral 1:1 when patient can tolerate solid dosage forms or ciprofloxacin 500mg BID	Monitor for dysuria and urinary frequency after 3 days Monitor for s/s of infection including elevated WBC ($>10.5 \times 10^9$ cells/L), fever (temp >101 F), neutrophils >76%
Discharge planning	3	Prevent future reactions	<ol style="list-style-type: none"> 1. Counseling about sulfonamide-based medications (antibiotics more than non-antibiotics but include sulfonamides, hypoglycemics, sumatriptan, loop diuretics) 2. Recommend a Medi-Alert bracelet warning about sulfonamide allergy 3. Recommend continued wound care and follow-up appointments with wound 	

			care specialist 4. Consider switching HTN medication to a long term oral agent because the previous medication (HCTZ) is a sulfonamide
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