Team #_____

2024
ASHP Clinical Skills Competition℠

NATIONAL COMPETITION CASE

Directions to National 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 and Pharmacist's Care Plan).

IMPORTANT NOTE: Only the **Pharmacist's Care Plan** will be used for evaluation purposes.

Pharmacist's Care Plan

Using the patient's data, you will be able to develop an effective care plan for your patient. Clearly define the healthcare problems. Healthcare problems include treatment of all acute and chronic medical problems, resolution of all actual or potential drug-related problems, and identification of any other health care services from which your patient may benefit.

Remember to think about potential medical problems for which your patient may be at risk and disease prevention and disease screening activities that may be appropriate to recommend. Also, don't forget to consider specific patient factors that may influence your goals and recommendations for therapy (e.g., physical, psychological, spiritual, social, economic, cultural, and environmental).

To complete your care plan, specify all of your patient's healthcare problems that need to be addressed. Then prioritize the problems into one of three categories: (1) 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/at discharge or next follow up visit). Please note that only one problem should be identified as the "most urgent problem."

Then **for each problem** describe the (1) therapeutic goals, (2) recommendations for therapy, and (3) monitoring parameters and endpoints. Your monitoring parameters should include the frequency of follow-up and endpoints should be measurable by clinical, laboratory, quality of life, and/or other defined parameters (e.g., target HDL is greater than 50 mg/dL within 6 months).

Remember:

- There should be only a "1", "2", or "3" listed in the priority column, and the number "1" should only be used once.
- When identifying individual problems for the case, use more specific terms when possible vs. general disease conditions. Also, use actual rather than weight-based doses when providing recommendations for therapy.

2024 ASHP CLINICAL SKILLS COMPETITION

Demographic and Administrative Information

Name: Aaron Jacobson	**Patient ID:** 350684
Sex: Male	**Room & Bed:** ED Bed 12
Date of Birth: 12/01/1957	**Admitting Physician:** Dr. Noack
Height: 5'11"/ **Weight:** 211 lbs / **Ethnicity:** African American	**Religion:** Lutheran
Prescription Coverage Insurance: Medicare	**Pharmacy:** CVS
Copay: $10 (generic prescription)/$25 (branded prescription)	**Annual Income:** $50,000

Chief Complaint

"I have a fever, I cannot keep food down or urinate."

History of Present Illness

Mr. Jacobson is a 67-year-old male who is presenting from home after being sent to the Emergency Department by his oncology case manager after contacting them for a new fever of 101.4°F (38.6°C) and inability to urinate in the past 24 hours. The patient recently started chemotherapy seven days ago for his newly diagnosed diffuse large B-cell lymphoma (DLBCL). He completed his last dose of a five-dose regimen of prednisone two nights ago. He mentions experiencing intractable nausea and vomiting with increased diarrhea frequency over the past few days. Mr. Jacobson endorses consistently taking his metoclopramide but has been having difficulty eating and sometimes vomits up his medications. The patient states he had not picked up his ondansetron ODT prescription yet. His significant other also mentions that the patient has been having difficulty sleeping and his blood glucose has been elevated for the past few days.

Past Medical History

Diffuse Large B-Cell Lymphoma – Diagnosed 11/2024

- Started treatment with rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP)
  - Premedications: palonosetron 0.25 mg IV x1, fosaprepitant 150 mg IV x1, dexamethasone 12 mg IV x1
  - Day 1 (12/1): rituximab 800 mg (375 mg/m^2) IV x1, cyclophosphamide 1650 mg (750 mg/m^2) IV x1, doxorubicin 110 mg (50 mg/m^2) IV x1, and vincristine 2 mg (1.4 mg/m^2, max 2 mg) IV x1
  - Days 1-5 (12/1-12/5): prednisone 100 mg PO daily
  - Given every 3 weeks (x 6 cycles)

Depression – Diagnosed 11/2024
Hyperlipidemia – Diagnosed 11/2024
Hypertension – Diagnosed 2015
Chronic Kidney Disease Stage 3 – Diagnosed 2014
Type II Diabetes Mellitus – Diagnosed 2010

Outpatient Drug Therapy

Prescription Medication & Schedule	Duration Start–Stop Dates	Prescriber	Pharmacy
Metoclopramide 10 mg PO QID PRN	Started 12/1/2024	Dr. James (oncology)	CVS
Sulfamethoxazole/Trimethoprim 800-160 mg PO 1 tablet three times weekly (M, W, F)	Started 12/1/2024	Dr. James (oncology)	CVS
Allopurinol 100 mg PO daily x14 days	Started 11/30/2024	Dr. James (oncology)	CVS
Acyclovir 400 mg PO BID	Started 11/30/2024	Dr. James (oncology)	CVS
Prednisone 100 mg PO daily x5	Started 11/30/2024	Dr. James (oncology)	CVS
Sertraline 50 mg PO daily	Started 11/30/2024	Dr. Perkins (PCP)	CVS
Insulin glargine 10 units subcutaneously daily	2018 – present	Dr. Perkins (PCP)	CVS

Losartan 50 mg PO daily	2015 – present	Dr. Perkins (PCP)	CVS
Amlodipine 10 mg PO daily	2015 – present	Dr. Perkins (PCP)	CVS
Cholecalciferol 1000 units PO daily	2014 – present	Dr. Perkins (PCP)	CVS
Glipizide 10 mg PO daily	2011 – present	Dr. Perkins (PCP)	CVS

Non-Prescription Medication/Herbal Supplements/Vitamins	Duration Start–Stop Dates	Prescriber	Pharmacy
Turmeric 1 capsule PO BID	2020 – present		
Acetaminophen 500 mg (take 1 tablet PO) QID PRN	2010 – present		
Ibuprofen 200mg take 1-2 tablet(s) PO QID PRN	2010 – present		
Men's multivitamin 1 tablet PO daily	2008 – present		

Medication History
The patient's significant other brought the patient's pillbox organizer to the ED. The patient and significant other stated that he takes his medications as prescribed, but they are uncertain what pills he vomited up over the past several days. He was using only metoclopramide for nausea and his diarrhea has worsened. He had been planning on discussing his diarrhea with his oncologist at his next appointment. He was planning to pick up the ondansetron ODT prescription today. Patient has not used any as needed OTC medications in the past 72 hours.

Allergies/Intolerances
Levofloxacin (hives), lisinopril (cough)

Surgical History
Port placement (11/2024), Appendectomy (2007)

Family History
Mother (living) – Hypertension, Chronic Kidney Disease, Coronary Artery Disease
Father (living) – Type II Diabetes Mellitus, Ischemic Stroke

Social History
Tobacco – none
Alcohol - drinks 2 to 3 occasionally (beer)
Recreational/Illicit drug use – none
Occupation - Librarian (retired)

Immunization History
All childhood vaccines through age 18
Tdap booster: 8/2016
COVID-19: Doses up to date per CDC guidelines
Pneumococcal: Doses up to date per CDC guidelines
Influenza: 11/2023

Review of Systems
Constitutional: Well-developed, well-nourished male. Follows commands. Fever, chills, and fatigue
HEENT: No vision changes, ear pain, nasal symptoms, or sore throat
Respiratory: No dyspnea with exertion; no cough
CV: No palpitations, orthopnea, paroxysmal nocturnal dyspnea, or peripheral edema
GI: Nausea, vomiting, and diarrhea
GU: Unable to urinate in 24 hours

MSK: No recent injury or immobilization
Skin: No new rashes or skin lesions
Neurological: Noncontributory
Psychiatric: Not evaluated

Physical Exam
General: Elderly male, lying in bed with no acute distress
Head: Two small white lesions inside the mouth on left cheek, mucous membranes show inflammation
Eyes: Pupils equal and responsive to light
Neck: Supple, symmetrical
Neuro: Unremarkable
Lungs: Decreased breath sounds bilaterally, crackles, and rales
CV: Regular rhythm, tachycardic, no murmur or gallop
Abdomen: Nondistended, nontender. No rebound/guarding. No hepatosplenomegaly.
Skin: Dry, no external skin lesions, cuts, or bruises; Port site noted to be red and tender
Extremities: Pulses present in all extremities, no edema, normal range of motion

Vital signs
HR: 110 bpm
RR: 19 bpm
O2 Saturation: 89% on room air
BP: 89/65 mm Hg
Temp: 102°F (38.9°C)

Labs and Microbiology

	11/30/2024 @ 1025	**12/07/2024 @ 0743**
Metabolic Panel		
Na (mEq/L)	135	140
K (mEq/L)	4.4	5.4
Cl (mEq/L)	95	106
CO_2 (mEq/L)	23	22
BUN (mg/dL)	9	31
SCr (mg/dL)	1.4	3.3
Glucose (mg/dL)	93	249
Calcium (mg/dL)	8.0	6.7
Phosphorus (mg/dL)	2.4	5.6
Magnesium (mg/dL)	1.9	2.3
Uric Acid (mg/dL)	6.1	10.2
Albumin (g/dL)	3.7	3.0
AST (IU/L)	24	24
ALT (IU/L)	40	39
Total bili (mg/dL)	0.4	0.6
LDH (IU/L)	900	650
CBC		
WBC (thousands/mm^3)	6.7	0.6
Hgb (g/dL)	13.1	11.2
Hct (%)	43	40
Plt (K/mm^3)	189	76

Segmented neutrophils (%)	50	10
Band neutrophils (%)	16	60
Lymphocytes (%)	30	25
Monocytes (%)	2	3
Eosinophils (%)	1	2
Basophils (%)	1	0
Absolute Neutrophil Count (cells/mm^3)	4422	420
Fasting Lipid Panel		
Total cholesterol (mg/dL)	154	
LDL (mg/dL)	92	
HDL (mg/dL)	40	
Triglycerides (mg/dL)	112	
Other		
Hemoglobin A1c (%)	6.7	
INR		1.1
Serum alcohol (%)		0
Hepatitis B surface antigen (HBsAg)	Negative	
Hepatitis B surface antibody (anti-HBs)	Positive	
Hepatitis B core antibody (anti-HBc)	Negative	

Other Diagnostic Tests

12/07/24 CTA thorax without contrast: Bibasilar atelectasis noted in both lungs. No evidence of pulmonary embolism.
12/07/24 CT abdomen and pelvis without contrast: pending
12/07/24 Blood cultures (two sets: one set from peripheral venipuncture of left antecubital fossa and one set from port)
12/07/24 Respiratory pathogen PCR panel: pending
12/07/24 Gastrointestinal pathogen PCR panel: pending
12/07/24 Pneumococcal urine antigen: pending
12/07/24 Legionella urine antigen: pending
12/07/24 EKG regular rhythm, QTc within normal limits

Emergency Department Notes:

Assessment: Fevers, laboratory results concerning for febrile neutropenia. Patient reported poor urine output and elevated serum creatinine concerning for acute kidney injury.
Plan: Patient to be admitted for intravenous antibiotics and oxygen due to MASCC score of 14. Plan to access port for inpatient use. Noted acute kidney injury to be treated with intravenous fluids.

Admission Medications	**Start Date**
Metoclopramide 10 mg IV or PO every 6 hours as needed for nausea/vomiting	Started in ED 30 minutes ago
Sodium Chloride 0.9% continuous infusion at 75 ml/hr	60 minutes ago in ED
Vancomycin 500 mg IV every 12 hours and 'Pharmacy to Dose' consult	60 minutes ago in ED
Cefepime 1000 mg IV every 24 hours	30 minutes ago in ED

Insulin glargine 10 units subcutaneously daily	Starting today at 09:00
Senna-docusate 8.6-50 mg 1 tablet PO twice daily	Starting today at 21:00
Enoxaparin 40 mg subcutaneously every 12 hours	Starting today at 21:00
Acyclovir 400 mg PO twice daily	Starting today at 21:00
Insulin lispro correctional scale level 1 1 – 5 Units Subcutaneous, QID with meals and bedtime Glucose range (mg/dL) Dose 180 – 250 ..... 1 Unit 251 – 300 ..... 2 Units 301 – 350 ..... 3 Units 351 – 400 ..... 4 Units Greater than 400 ..... 5 Units and Notify Provider	
Sulfamethoxazole/Trimethoprim 800-160 mg PO three times weekly	

As a member of the admitting internal medicine team, please address pharmacotherapy recommendations, including all home medications.

ASHP Clinical Skills Competition - Pharmacist's Care Plan – 2024 Answer Key (National Case)

Evaluated for competition

Problem Identification and Prioritization with Pharmacist's Care Plan

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	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters

Febrile Neutropenia	**1**	Inpatient:
		• Optimize antibiotics:
		  ○ **Preferred:**
		  ▪ Change cefepime from 1g IV q24h to 1g IV q12h or 2g IV q24h for febrile neutropenia dosing with CrCl between 11-29 ml/min
		  • Alternative extended infusion: Cefepime 1 g IV over 4 hours q8h for CrCl <30 ml/min
		  ○ Alternative:
		  ▪ Change cefepime to a different anti-pseudomonal agent:
		  • Piperacillin/tazobactam 4.5 g IV q8h OR 3.375 g IV q6h over 30 minutes
		  ○ Alternative extended infusion: Piperacillin/tazobactam 3.375 g IV over 4 hours q8h for CrCl >20 mL/min
		  • Meropenem 1g IV q12h OR 2000 mg IV q24h over 30 minutes
		  ○ Alternative extended infusion: Meropenem 500 mg IV over 3 hours q8h for CrCl < 30 ml/min
		  • Imipenem/cilastatin 250 mg IV q8h OR 500 mg IV q12h over 30 minutes
			Therapeutic Goals:
			• Reduce mortality and morbidity
			
			Monitoring Parameters:
			• Signs of infection including fever, WBC, and mental status
			• Absolute neutrophil count
			• Blood cultures
			• Results of respiratory pathogen and gastrointestinal panel
			• Serum creatinine
			• Vancomycin levels: Check level at 24 hours from loading dose with plans to re-dose if level <20 mg/dL. If starting a scheduled dose, check a level within 3-4 doses (or 2-3 days) to assess the regimen. Goal would be an AUC of 400-600 mg-hr/L or vancomycin trough of 15- 20 mg/dL.
			• Monitor for vancomycin infusion reaction. If seen, recommend slower rate.
			• Monitor for adverse effects: hypersensitivity reaction, worsening

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters
		○ **Vancomycin load:** vancomycin dose started as 500 mg IV q12h (5 mg/kg/dose) (No faster than 1g/hr). Discontinue order and enter 1500-2000 mg IV for a total of 2000-2500 mg IV for a loading dose (20-25 mg/kg) ○ **Vancomycin maintenance dose:** ▪ Schedule a level for 24 hours after the loading dose to determine the next dose if level less than 20 mg/dL. Dosing by level or schedule regimen can be determined based upon level and renal function status (Best option) ▪ Order vancomycin dosing regimen with the range from 10 mg/kg q24h to 20 mg/kg every 48 hours (alternative option, see Judge notes). • Follow up on cultures from blood, respiratory pathogen panel, and urine antigen tests to confirm antibiotic coverage of isolated organisms and determination of antibiotic de-escalation once organism and sensitivities are available. • Recommend if cultures remain negative, no identifiable source, afebrile, and hemodynamically stable after $\geq$ 48 hours, de-escalation of antibiotics with the following additional criteria: ○ If ANC > 500 cells/mm^3: Discontinue antibiotics ○ If ANC < 500 cells/mm: Discontinue antibiotics and initiate fluoroquinolone prophylaxis until neutropenia resolved • (Unscored) Filgrastim 5 mcg/kg subcutaneously daily or biosimilar (rounded to 300 mcg subcutaneously < 78kg/ 480 mcg subcutaneously >78kg) Outpatient: • Recommend discharging patient on oral antibiotic regimen when hemodynamically stable and afebrile for 48 hours • Tailor length of treatment to organisms if detected • Treatment duration of 5-14 days is appropriate for the majority of infections ○ 5-14 days is appropriate for the majority of infections.	diarrhea due to antibiotic or C. difficile infection, rash, nephrotoxicity, ototoxicity, hemolytic anemia, worsening thrombocytopenia

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters
		• Recommend adding pegfilgrastim 6 mg subcutaneously once or biosimilar for the day after chemotherapy for cycle 2 to reduce neutropenia • Continue acyclovir 400 mg PO BID for herpes simplex prophylaxis and sulfamethoxazole-trimethoprim 800-160 mg PO 1 tablet three times weekly for PJP prophylaxis (See below for renal dosing in "acute on chronic kidney injury")	

Acute on Chronic Kidney Injury	**2**	• Avoid nephrotoxic drugs
		  ○ Discontinue losartan due to acute kidney injury
		  ○ Avoid other nephrotoxic drugs (e.g. NSAIDS, aminoglycosides, ACEi/ARB)
		• Renally dose adjust following medications not discussed in other problems
		  ○ Famotidine: 20 mg PO twice daily or 40 mg PO every other day
		  ○ Sulfamethoxazole/trimethoprim: Adjust to 400/80 mg PO 1 tablet three times weekly
			Therapeutic Goals:
			• Prevention of kidney disease progress
			• Limit adverse effects from accumulation of renally cleared medications
			
			Monitoring Parameters:
			• Serum creatinine
			• BUN
			• In and out/fluid status
			• Need for medication adjustments based upon renal function

Chemotherapy-Induced Nausea and Vomiting	**2**	• Antiemetic:
		  ○ Discontinue metoclopramide due to adverse effect of diarrhea
		  ○ Start schedule regimen including one of the following:
		  ○ Preferred:
		  ▪ Ondansetron 8 mg PO/IV/ODT q8h
		  ▪ Granisetron 1–2 mg PO daily or 1 mg PO BID
		  ▪ Dolasetron 100 mg PO daily
		  ▪ Olanzapine 2.5 mg PO nightly
		  ○ Alternative:
		  ▪ Dexamethasone 12 mg IV/PO daily
		  ▪ Haloperidol 0.5–2 mg PO/IV every 4–6 h
		  ▪ Lorazepam 0.5–1 mg PO/SL/IV q6h
		  ▪ Dronabinol capsules 5–10 mg PO TID or QID
		  ▪ Prochlorperazine 10 mg PO/IV q6h
			Therapeutic Goals:
			• Reduce breakthrough nausea/vomiting
			
			Monitoring Parameters:
			• Frequency of emesis and episodes of nausea
			• BMP
			• In and out/fluid status

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters
		▪ Promethazine 12.5-25 mg PO or 25 mg suppository q12h ▪ Scopolamine 1.5 mg transdermal patch 1 patch q72h • Recommend assessing daily with need to add on additional medications to antiemetic regimen Outpatient • Recommend outpatient nausea and vomiting regimen at discharge as replacement to metoclopramide (BONUS) o Ondansetron 8 mg PO/ODT q8h PRN for nausea or vomiting o Prochlorperazine 10 mg PO q6h PRN for nausea or vomiting	
Tumor Lysis Syndrome	**2**	• Intravenous hydration o Increase NS from 75 mL/hr to 150-250 mL/hr to reach 2-3 L/m^2/day recommendation until electrolytes are corrected • Hyperkalemia: o Increase IVF to recommended IV hydration dosing above • Hyperuricemia o Increase allopurinol to 300 mg PO daily o Recommend rasburicase based upon high-risk disease (DLBCL), elevated LDH, and uric acid greater than 8.0 ▪ Fixed dose of 3-7.5 mg IV x1 ▪ Alternative dosing: 0.1-0.2 mg/kg IV daily for 1-7 days based upon uric acid ▪ **Bonus:** Recommend G6PD testing to determine if deficient. Do not hold dose until testing is back. • Hyperphosphatemia o Increase IVF to recommended aggressive IV hydration dosing above • Hypocalcemia o Noted corrected calcium of 7.5 mg/dL o Avoid calcium replacement due to concern of phosphate calcium products contributing to worsening acute kidney injury	Therapeutic Goals: • Prevent worsening electrolyte abnormalities • Reduce morbidity and mortality Monitoring Parameters: • BMP every 6-8 hours • In and out/fluid status • EKG • CBC • Uric acid every 6-8 hours • Phosphorus every 6-8 hours

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters
Diarrhea	**2**	• Recommend discontinuing senna-docusate. • See hydration plan above in tumor lysis syndrome. • Recommend gastrointestinal pathogen panel (GIPP) to rule out infectious case • If GIPP negative for C. difficile, start loperamide 4 mg x1 then 2 mg every 2 to 4 hours or after each loose stool. De-escalate schedule pending resolution of diarrhea by at least 12 hours.	Therapeutic Goals: • Reduce GI losses of volume and electrolytes • Improve symptoms Monitoring Parameters: • Stool output
Diabetes Mellitus	**2**	• Long-acting insulin: Resume insulin glargine 10 units subcutaneously daily. No recommendations for immediate adjustments as the last steroid dose was two days ago • Hold glipizide during inpatient admission due to acute kidney injury and age. • Monitor blood glucose closely due to recent steroid-induced hyperglycemia from prednisone use for chemotherapy regimen. Recommend dose adjustments if hyperglycemia persists Outpatient: • Recommend continuing insulin glargine 10 units subcutaneously daily at discharge if no insulin modifications during inpatient admission. • Recommend discontinuing glipizide at discharge due to age. • Recommend adding SGLT2 at discharge pending renal function improvement: o Preferred: ▪ Canagliflozin 100 mg PO daily ▪ Empagliflozin 10 mg PO daily ▪ Dapagliflozin 5-10 mg PO daily	Therapeutic Goals: • Fasting blood glucose 80-130 mg/dL • Inpatient blood glucose within range of 140-180 mg/dL and prevent episodes of hypoglycemia and hyperglycemia • Prevent long term adverse effects of hyperglycemia Monitoring Parameters: • Blood glucose • Diet
Hypertension	**2**	• Hold losartan and amlodipine due to hypotension. Restart amlodipine pending improvement in blood pressure. Restart losartan pending improvement in blood pressure and renal function. • Recommend blood pressure goals (no preference): o SBP < 130 and DBP < 80 mmHg per ACC/AHA 2017 guidelines for history of diabetes o SBP <120 mmHg per KDIGO 2021 guidelines	Therapeutic Goals: • Blood pressure <130/80 mmHg in patients with diabetes (can use lower goal of <120 mmHg SBP depending on reference cited) • Reduce risk of morbidity and mortality related to complications of hypertension

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters
		• Recommend continued intravenous hydration to replenish volume status and tumor lysis syndrome above	Monitoring Parameters: • BP • HR • BMP • Serum creatinine (for restarting lisinopril)

VTE Prophylaxis	**2**	• Modify pharmacologic VTE prophylaxis
		  ○ Change enoxaparin to heparin 5000 units subcutaneously BID or TID
		  ○ Change enoxaparin from 40 mg subcutaneously twice daily to 30 mg subcutaneously daily for renal function and BMI
			Therapeutic Goals:
			• Prevention of VTE
			
			Monitoring Parameters:
			• Signs or symptoms of bleeding
			• CBC
			• Serum creatinine
			• BUN

Diffuse Large B-Cell Lymphoma	**3**	• See above treatments for inpatient febrile neutropenia, chemotherapy-induced nausea & vomiting, and tumor lysis syndrome • See above for treatment recommendations for outpatient febrile neutropenia and chemotherapy-induced nausea & vomiting • Recommend following up with oncologist prior to next cycle of chemotherapy for any therapy modifications	Therapeutic Goals: • Cure disease Monitoring Parameters: • CBC • BMP

Immunizations	**3**	• Needs influenza vaccination for this year
		  ○ Inactivated seasonal influenza vaccine IM x1
		  ○ Avoid intranasal due to live-attenuated component
		• Needs recombinant zoster vaccine as patient is not previously vaccinated
		  ○ Shingrix 0.5 mL x1 then 0.5 mL x1 2-6 months after first dose
		• Needs RSV vaccine due to age greater than 60 years and chronic condition of a hematologic malignancy
		  ○ RSV vaccine 0.5 mL IM x1
			Therapeutic Goals:
			• Reduce incidence of vaccine preventable disease
			
			Monitoring Parameters:
			• Hypersensitivity reactions (15 minutes after each vaccine)
			• Injection site pain
			• CBC

Health Care Problem	Priority	Recommendations for Therapy	Therapeutic Goals & Monitoring Parameters

ASCVD Risk/Hyperlipidemia	**3**	• ACC/AHA risk calculator predicts a 10-year risk of 16.6% for first MI, CHD death, or stroke. Patient has multiple risk factors.
		• Recommend moderate intensity statin:
		  ○ Atorvastatin 10-20 mg PO daily
		  ○ Rosuvastatin 5-10 mg PO daily
		  ○ Simvastatin 20-40 mg PO daily
		  ○ Pravastatin 40-80 mg PO daily
		  ○ Lovastatin 40 mg PO daily
		  ○ Fluvastatin XL 80 mg PO daily
		  ○ Fluvastatin 40 mg PO BID
		  ○ Pitavastatin 2-4 mg PO daily
		• Alternative:
		  ○ Recommend high intensity statin due to DM with multiple risk factors:
		  ▪ Atorvastatin 40-80 mg PO daily
		  ▪ Rosuvastatin 20-40 mg PO daily
			Therapeutic Goals:
			• Continue to keep total cholesterol <200 mg/dL and reduce LDL cholesterol to <70 mg/dL
			• Reduce CVD risk of adverse events
			
			Monitoring Parameters:
			• LFTs
			• Cholesterol panel
			• Adverse effects of statins (myalgias, hepatic dysfunction, and GI upset)

Depression	**3**	• Resume sertraline 50 mg PO daily while inpatient • Assess duration of sertraline therapy and symptoms for dose titrations • Encourage cognitive behavioral therapy if depression worsens during inpatient admission	Therapeutic Goals: • Minimize symptoms of depression Monitoring Parameters: • Symptoms of depression • Mood changes such as suicidal ideation • Symptoms of serotonin syndrome