Team #_____

2013
ASHP Clinical Skills Competition
NATIONAL COMPETITION CASE

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2013 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 and Pharmacist's Care Plan).

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

Team #_____

ASHP CLINICAL SKILLS COMPETITION 2013
PHARMACIST'S PATIENT DATA BASE FORM

Demographic and Administrative Information							
Last Name	**First Name**	**Date of Birth**	**Patient ID**	**Room**	**Height**	**Weight**	**Race & Gender**
Turner	Theresa	8/15/55	012345	423	5'9"	170 lbs	Caucasian Female

Religion:	Unaffiliated
Physician:	Family Medical Practice: Dr. Smith
Pharmacy:	CVS
Prescription Coverage	
Insurance:	Blue Cross Blue Shield (through husband)
Copay:	$10
Cost per month:	$250
Annual Income:	Unemployed ($70,000 from husband)

Chief Complaint (12-5-13)

"Worsening shortness of breath, wheezing, productive cough, on-and-off chest pain for the last 2 days"

History of Present Illness

TT presented to her primary care provider on December 3rd with progressive dyspnea, wheezing, and cough with occasional yellowish mucus. It was felt that the patient had a chronic obstructive pulmonary disease (COPD) exacerbation. She was given prescriptions for albuterol nebs, moxifloxacin, prednisone, and hydrocodone/acetaminophen to be used as needed. She was starting to feel better with her newly prescribed medications, but this morning when she tried to go to the restroom she noted worsening dyspnea, wheezing and recurrence of chest pain. She asked her husband to bring her to the ER.
In the ER, TT was given nebulization treatment with albuterol/ipratropium, one dose of methylprednisolone 125 mg IV and IV fluids. She is currently feeling significantly better with less dyspnea and wheezing.

Past Medical History

1. COPD: TT was told she had COPD a year ago based on chest x-ray results however no formal pulmonary function tests were performed.
   At a June 2013 office visit, mMRC = 2, FEV_1 = 75%
2. Previous hospitalization for pneumonia (August 29 -September 5, 2013).
   At that time, she had episodes of left rib, and lower thoracic and lumbar pain.
3. Depression: Started 1 year ago after she was laid-off from her job
4. Hypertension: TT was told she had high blood pressure about 5 years ago
5. Postmenopausal: Experienced menopause at age 52

Social History

1 ½ pack per day current smoker. No illicit drug or alcohol use. Married with 2 grown children. Used to work as an office administrative assistant but was laid off last year. Had recently been asked to return to work but has been feeling ill.

Surgical History

Appendectomy at age 20

Family History

Parents' cause of death unknown
One brother died of myocardial infarction, at 67 years old
One sister in good health.

Vaccination history

Does not remember receiving any vaccinations as an adult but received all childhood vaccinations

Current Drug Therapy/Indication

Drug Name/Dose/Strength/Route	*Prescribed Schedule*	*Duration Start–Stop Dates*	*Adherence/Dosing Issue*
1. Albuterol metered dose inhaler	1 – 2 puffs q4h PRN shortness of breath	Jan 2013 - Present	Uses 1-3 puffs daily
2. Hydrocodone/Acetaminophen 5 mg/325 mg PO	1 – 2 tablets q6h PRN pain	Dec 3	Used 7 tablets since Dec 3
3. Moxifloxacin 400 mg PO	Daily x 5 days	Dec 3 – 8, 2013	Adherent
4. Albuterol 2.5 mg/3 mL (0.083%) nebulization solution	4 times daily PRN shortness of breath	Dec 3	Used once daily since Dec 3
5. Prednisone 40 mg PO	Daily x 5 days	Dec 3 – 7, 2013	Adherent
6. Citalopram 40 mg PO	Daily	Jan 2013 - Present	Adherent
7. Lisinopril 20 mg PO	Daily	2010 - Present	Intermittently adherent

Allergies/Intolerances:

Varenicline (nightmares)

Review of Systems | **Date: 12/5/13**

Has had on and off episodes of weakness, dyspnea, and cough, over the last 5 months
Denies fever, chills, headache, vomiting, diarrhea, or urinary complaints
No recent falls or trauma within the last year
Denies numbness, altered sensation, or pain in the feet and lower extremities

Physical Exam | **Date: 12/5/13**

Vital Signs:
BP 148/95, RR 20, T 97.6 F, P 105; Pain 7/10 in chest and back; O2 saturation 95% on room air
(repeated on 12/6/13: BP 142/83, RR 18, T 97.2 F, P 88)
General: Well-nourished, well-developed, weak looking, not in acute respiratory distress
HEENT: Pink conjunctivae. Anicteric sclerae. Slightly dry oral mucosa.
Neck: Supple. No jugular venous distention, bruit or lymphadenopathy.
Lungs: Decreased breath sounds with occasional rhonchi. No wheezes appreciated. Occasional basal crackles. Some minimal tenderness in the right and left lower rib cage areas
Heart: S1, S2, tachycardic. No murmur.
Abdomen: Slightly distended. Bowel sounds present. Minimal tenderness right and left upper quadrant areas. No rebound. No guarding. No CVA tenderness.
Extremities: No edema. Dorsalis pedis pulse +2. Straight leg raise testing negative. Back is tender in the lower thoracic upper lumbar area. Motor strength equal and symmetrical.
Neurologic: Alert, oriented x 3

Labs and Other Tests					
Test	*Units*	*Results*			
		Date: 12/5/13	Date: 12/6/13	Date:	Date:
Glucose	mg/dL	140	163		
Na^+	mEq/L	139	140		
K^+	mEq/L	4.3	4.2		
Cl^-	mEq/L	104	106		
CO2	mEq/L	28	24		
BUN	mg/dL	22	23		
SCr	mg/dL	1.7	1.5		
Magnesium	mEq/L	2.2	2.0		
Calcium	mg/dL	11.1	11		
Phosphorous	mg/dL	3.4	3.8		
Albumin	g/dL	3.8	3.7		
AST, SGOT	IU/L	15	13		
ALT, SGPT	IU/L	30	30		
Total bili	Mg/dL	0.7	0.5		
RBC	mil/μL	3.58	3.25		
Hgb	g/dL	11.1	10.3		
Hct	%	33.2	30.7		
MCV	fL/cell	91	93		
MCH	pg/cell	31.3	31.7		
WBC	$10^3/mm^3$	13.9	13.1		
Plt	$10^3/\mu L$	297	299		
CRP	mg/dL	0.88			
Total Cholesterol	mg/dL	264			
LDL	mg/dL	163			
HDL	mg/dL	48			
Triglycerides	mg/dL	265			
A1c	%	5.8			
TSH	mcIU/mL	4.03			
M-Protein	g/dL	4.8			
β-2 Microglobulin	Mg/L	3.8			
Chest X-Ray	Multiple compression deformities of lower midthoracic spine. Multiple small lucencies throughout visualized bones				
Skeletal Survey	Extensive lytic lesions involving the skull, clavicles, humeri, and femurs predominantly				
Bone Marrow	50% cellular bone marrow with 50% involvement by intermediate grade plasma cell dyscrasia Cytogenetics normal				

Patient Narrative

You and your treatment team are seeing TT for the first time this morning. You are asked to make recommendations for all of TT's medical conditions. Of note: The oncology team would like to start TT on a thalidomide-based regimen for 3 cycles prior to autologous stem cell transplant.

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 health care problems. Health care 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 health care 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).

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/at discharge or next follow up visit**)**

**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

TEAM #_____

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ASHP Clinical Skills Competition - Pharmacist's Care Plan

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

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2013
ASHP Clinical Skills Competition
NATIONAL CASE ANSWER KEY

ASHP Clinical Skills Competition - Pharmacist's Care Plan - 2013 National Answer Key

Evaluated for competition

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
Multiple Myeloma A) Chemotherapy	1	1. Prolong progression-free and overall survival 2. Improve quality of life	Patient and provider registration in ThalomidRems program (formerly known as S.T.E.P.S) VTD Regimen 21 days for 3 cycles 1. Bortezomib 2.5 mg IV, days 1,4,8,11 2. Thalidomide 100 mg/day PO, days 1 through 14 of first cycle only Thalidomide 200 mg/day PO, days 15 through 21 of first cycle only Thalidomide 200 mg/day PO, days 1 -21, except for first cycle 3. Dexamethasone 40 mg/day PO, days 1, 2, 4, 5, 8, 9, 11-12 Alternative: 1. Bortezomib 2.5 mg IV, days 1, 4, 8, 11 2. Thalidomide 100 mg/day PO, days 1 - 21 3. Dexamethasone 40 mg/day PO, days 1-4, and days 9-12	Efficacy: After 2-3 cycles, check 1. Blood and urine M protein 2. % plasma cells in bone marrow 3. β-2 Microglobulin 4. Bone/skeletal survey 5. Serum creatinine, hemoglobin, calcium Endpoint: 1. Reduction in M protein and plasma cells 2. Induction of most optimal therapy response (complete remission) 3. Reduction in CRAB (calcium, renal disease, anemia, bone disease) Adverse events: 1. CBC with differential and platelets, 2. Signs/symptoms of peripheral neuropathy (tingling, numbness, weakness, loss of reflexes) 3. Signs/symptoms of thromboembolism 4. TSH 5. Constipation

				6. Serum potassium, glucose
Multiple Myeloma B) Supportive Care	1	1. Reduction/elimination of skeletal-related adverse events	1. Initiate: Zoledronic acid 3.3 mg IV over 15 minutes every 3 weeks With daily calcium/vitamin D supplement (500 mg/400 IU) BID Alternative: Pamidronate 90 mg IV over 2 hours every 3weeks	1. Efficacy/Endpoint: Avoidance of further lesions or skeletal-related events. Decrease in bone pain Adverse events: Baseline dental exam and monitor for jaw osteonecrosis, renal function, electrolytes (calcium, phosphate, magnesium), albuminuria
		2. Reduction/elimination of chemotherapy-related adverse events a. Thromboembolism avoidance b. Herpes virus infection or reactivation avoidance c. Constipation prophylaxis	2. Initiate: a. Enoxaparin 40 mg subcut once daily i. Alternative: Warfarin (INR 2-3) b. Acyclovir 400 mg orally once daily i. Alternatives: Famciclovir, Valacyclovir ii. Optimal dosing not established c. Senna 8.6 mg twice daily +/- docusate 100 mg orally twice daily	2. Efficacy/Endpoint: Avoidance of thromboembolic events, herpes-related viral infections, constipation. Consider additional agents for constipation if needed Adverse events: a. Enoxaparin: Platelets, signs/symptoms of bleeding, CBC, SCr b. Acyclovir: Urinalysis, BUN, creatinine, CBC
		3. Reduction/elimination of pain (Pain management) and avoidance of adverse events due to pain management.	3. Initiate: Opioid-based pain regimen including around-the-clock and breakthrough pain management component. Below is example. Oxycodone CR 10 mg PO twice daily Oxycodone IR 5 mg PO q4-6 hrs PRN	3. Efficacy: Pain assessment including pain score (0-10 scale), pain intensity Frequency of breakthrough pain medicine use. Adjust the oxycodone CR dose within the first few days Adverse events: GI symptoms (nausea, vomiting, constipation), sedation, respiratory status Endpoint: Pain score 0-3/10 with minimal sedation or adverse events

Chronic Obstructive Pulmonary Disease	2	Relieve and reduce symptoms Reduce frequency of exacerbations Improve exercise tolerance	Discontinue moxifloxacin Discontinue prednisone Initiate: Tiotropium 18 mcg 1 inhalation daily Or Aclidinium 400 mcg 1 inhalation BID Continue: Albuterol MDI 1-2 puffs q4h PRN Albuterol 2.5 mg/3mL (0.083%) neb solution QID PRN Alternatives: 1) Salmeterol 50 mcg 1 inhalation BID 2) Formoterol (Foradil®) 12 mcg q12h 3) Formoterol (Perforomist®) 20 mcg BID 4) Indacterol 75 mcg 1 inhalation daily Review clinical teaching of proper inhaler or device technique with patient based on regimen chosen	Efficacy: Decreased difficulty breathing, increased exercise tolerance Adverse Effects (tiotropium): xerostomia, upper respiratory infections, and pharyngitis Consider PFTs once patient's respiratory status stabilizes
Smoking Cessation	2	Initiate and maintain smoking cessation Reduce morbidity/mortality from COPD	Assess patient's readiness and interest in quitting Options: 1) Monotherapy with pharmacologic agent 2) Combination therapy with rational pharmacologic agents (eg. patch + gum or spray; patch + inhaler; patch+ bupropion SR) 3) Cognitive behavorial therapy + pharmacologic agent Alternatives: 1) Nicotine transdermal patch 21 mg/24 hr to upper body/outer arm daily 2) Bupropion SR 150 mg PO daily x 3 days then 150 mg twice daily 3) Nicotine gum 4mg Q 1 hr x 6 weeks then PRN up to 12 weeks (maximum	Efficacy: Control of smoking urges, agitation/anxiety associated with nicotine withdrawal. Reduction in COPD exacerbations Adverse Effects: Blood pressure and heart rate (range q8hrs to daily), jitteriness/anxiety/nervousness, headaches, insomnia Patch – skin irritation, nightmares Gum – dysguesia Nasal spray/inhaler – nasal/throat burning and irritation, headache, dyspepsia, rhinitis Lozenge – nausea, hiccups, heartburn Inhaler – cough Bupropion: blood pressure (if in

			24 pieces/day) 4) Nicotine nasal spray 1-2 sprays/hour; do not exceed 10 sprays per hour (maximum 80 sprays per day) 5) Nicotine 4 mg lozenge -Weeks 1-6: q1hr -Weeks 7-9: q2hr -Weeks 10-12: q4hr (max 20 per day) 6) Nicotine inhaler 6-16 cartridges per day Counseling Points: Patch - remove patch in evening to reduce risk of nightmares Gum – instruct patient to chew slowly until it tingles, then park gum between cheek and gum until tingle is gone; repeat process until most of tingle is gone (~30 minutes) Lozenge: Dissolve in mouth. No food/acidic beverage 15 min before or during	combination with nicotine product), depression, suicidal ideation or clinical worsening, insomnia, seizures
Hypertension	2	Prevent cardiovascular events or end organ damage Decrease mortality	Recheck/reevaluate blood pressure (BP) when pain is more optimally managed Evaluate why patient is "intermittently compliant" with lisinopril (especially since compliant with other medicines) Continue lisinopril 20 mg PO daily Alternatives: Agent from another first-line antihypertensive class such as: 1. ARB 2. CCB 3. Thiazide diuretic	Goal blood pressure < 130/80 mm/hg Efficacy: Establish new "baseline" BP during this visit. Check blood pressure at every follow-up visit. Adverse effects (lisinopril): Serum creatinine, BUN, potassium Adverse effects: per agent selected
Hyperglycemia	2	Decrease morbidity and mortality Decrease progression to diabetes	Inpatient glycemic management: Insulin glargine or detemir 10 units subcutaneously hs	Goal random blood sugar < 180 Monitor fasting blood glucose and pre-meals while inpatient.

			Alternative: Sliding scale insulin with daily review of required insulin doses to establish a routine basal insulin dose if needed	Reevaluate goals and need for more frequent monitoring. (Alternative less stringent glycemic goal acceptable given patient's comorbidities) Adverse effects: hypoglycemia, atrophy or hypertrophy of subcutaneous tissue, injection site reactions Follow-up A1c in outpatient setting
Vaccines	2	Reduce incidence of vaccine-preventable diseases and/or complications	Administer: 1) Influenza vaccine (inactive) 2) Pneumococcal vaccine 3) Tdap vaccine Prior to discharge. Can also consider hepatitis B vaccination series	Adverse effects: Local injection site reactions, fever, malaise, arthralgia, dizziness, syncope, etc.
Dyslipidemia	3	Decrease cardiovascular morbidity and mortality	Therapeutic lifestyle changes targeting total fat 25-35% of calories with saturated fat < 7%; < 200 mg/day cholesterol, Dietary fiber 20-30 grams per day as can tolerate Initiate: Atorvastatin 10 mg PO daily or Rosuvastatin 10 mg PO daily Alternative: Niacin 500 mg PO daily with plan to titrate upwards to 1.5 – 2 grams /day	Goals: Total cholesterol < 200 mg/dL; LDL cholesterol < 100 mg/dL; Triglycerides < 150 mg/dL; HDL > 40 mg/dL Repeat lipid panel in 6-12 weeks and every 3-6 months Adverse effects: (statin) Myopathy, increase in blood glucose, periodic liver function tests PRN; (niacin) Liver function tests, blood glucose, patient complaints of flushing
Depression	3	Eliminate or reduce symptoms of depression Reassess depression status given new cancer diagnosis Improve quality of life Prevent further episodes of depression	Continue citalopram 40 mg PO daily Consider Multiple Myeloma support group, and/or cognitive therapy as needed Alternatives: 1) Taper down citalopram and initiate bupropion SR 150 mg PO once daily x 3 days then 150 mg twice daily (for smoking cessation and depression) 2) Addition of bupropion SR to citalopram	Efficacy: Reduced symptoms of depression Adverse events: signs/symptoms of arrhythmias (dizziness, palpitation), electrolytes Bupropion: blood pressure (if in combination with nicotine product), depression, suicidal ideation or clinical worsening, insomnia, seizures

				If bupropion SR and citalopram combination chosen, must indicate: 1) Drug interaction with potential increased levels of citalopram 2) Monitor for excessive citalopram adverse effects (confusion, dizziness, somnolence, hallucinations, QT prolongation)