

2008
ASHP National Clinical Skills Competition
CASE

2008 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: Rogers, Buckley		Patient ID: 110606																																																																
Address: 12 45 th Street		Room & Bed: Neurology ICU Room 221																																																																
Ocean City, NJ		Physician: Rose																																																																
Date of Birth: 4-5-1938		Pharmacy: CVS #34234524																																																																
Height: 71" Weight: 110 kg		Race: Caucasian																																																																
Gender: Male		Religion: None specified																																																																
History of Present Illness		Vitals & Other Tests																																																																
<p>BR presented to the ED 7days ago with mental status changes after a fall. EEG showed that he had a grand mal seizure. He was emergently intubated for airway protection and placed on a ventilator. A chest X-ray was performed to confirm endotracheal tube placement and did not have signs of pneumonia. He was transferred to the Neurology ICU and diagnosed with a subarachnoid hemorrhage (SAH).</p> <p>Yesterday (hospital day #6) BR's nurse noted that he had thick, copious secretions. Today (hospital day #7) BR spiked a fever to 102.3° F and has new leukocytosis. A chest X-ray reveals an infiltrate in the left lower lobe, and the team diagnoses him with pneumonia. His blood pressure drops precipitously and does not respond to fluid resuscitation with 4L of normal saline and he was started on norepinephrine at 4 mcg/min.</p>		<p>BP 84/44 Pulse 120 Temp Tmax 102.3 Tcurrent 101.1 Resp 24 (on ventilator)</p> <p>ABG: pH 7.35 PaCO₂ 30 PaO₂ 65 HCO₃ 26</p>																																																																
Past Medical History		Chemistry and CBC																																																																
		HD#1 HD #6 HD#7																																																																
<p>CAD s/p MI 2004 Hypertension Hyperlipidemia Chronic Renal Insufficiency DVT 2 months ago Depression</p>		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Na 140</td> <td style="width: 33%;">Na 140</td> <td style="width: 33%;">Na 140</td> </tr> <tr> <td>K 3.9</td> <td>K 4.2</td> <td>K 4.2</td> </tr> <tr> <td>Cl 100</td> <td>Cl 100</td> <td>Cl 100</td> </tr> <tr> <td>CO₂ 21</td> <td>CO₂ 24</td> <td>CO₂ 24</td> </tr> <tr> <td>BUN 27</td> <td>BUN 42</td> <td>BUN 45</td> </tr> <tr> <td>SCr 1.5</td> <td>SCr 2.3</td> <td>SCr 2.6</td> </tr> <tr> <td>Glucose 168</td> <td>Glucose 172</td> <td>Glucose 194</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>WBC 7.8</td> <td>WBC 14.5</td> <td>WBC 18.9</td> </tr> <tr> <td>Hgb 11.4</td> <td>Hgb 11.5</td> <td>Hgb 10.9</td> </tr> <tr> <td>HCT 34.2</td> <td>HCT 33.4</td> <td>HCT 32.1</td> </tr> <tr> <td>Plts 286</td> <td>Plts 186</td> <td>Plts 168</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td>Calcium 9.2</td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td>Albumin 2.8</td> <td> </td> </tr> <tr> <td>Lactate 6.8</td> <td> </td> <td>Lactate 7.2</td> </tr> <tr> <td>AST 34</td> <td>AST 34</td> <td>AST 54</td> </tr> <tr> <td>ALT 37</td> <td>ALT 37</td> <td>ALT 41</td> </tr> <tr> <td>Total bili 1.0</td> <td> </td> <td>Total bili 1.1</td> </tr> <tr> <td>Direct bili 0.6</td> <td> </td> <td>Direct bili 0.6</td> </tr> <tr> <td>INR 5.2</td> <td> </td> <td>INR 1.2</td> </tr> </table>		Na 140	Na 140	Na 140	K 3.9	K 4.2	K 4.2	Cl 100	Cl 100	Cl 100	CO ₂ 21	CO ₂ 24	CO ₂ 24	BUN 27	BUN 42	BUN 45	SCr 1.5	SCr 2.3	SCr 2.6	Glucose 168	Glucose 172	Glucose 194				WBC 7.8	WBC 14.5	WBC 18.9	Hgb 11.4	Hgb 11.5	Hgb 10.9	HCT 34.2	HCT 33.4	HCT 32.1	Plts 286	Plts 186	Plts 168				Calcium 9.2				Albumin 2.8		Lactate 6.8		Lactate 7.2	AST 34	AST 34	AST 54	ALT 37	ALT 37	ALT 41	Total bili 1.0		Total bili 1.1	Direct bili 0.6		Direct bili 0.6	INR 5.2		INR 1.2
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**ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S PATIENT DATA BASE FORM (Cont.)**

Social History (from outpatient chart)	Cultures
Tobacco: Denies ETOH: Occasional Illicit Drugs: Past history of occasional marijuana, last used >20 years ago	HD #1 Blood culture 2/2 no growth Urine culture - <10,000 GNRs
Caffeine: Occasional <u>Occupation</u> : Retired Astronaut <u>Status</u> : Widowed <u>Children</u> : None <u>Physical Activity</u> : Moderate <u>Diet</u> : Nothing notable	Urinalysis (from HD #1) Appearance – Clear, yellow Specific gravity – 1.017 Blood – Trace Ketones – Trace Leukocyte esterase – Trace Nitrites – Negative Protein 4+ Glucose – Trace Yeast 2+ WBCs – 0-4 per high powered field RBCs – 4-10 per high powered field
Procedures	X-ray
Intubated and placed on ventilator upon admission Externalized ventricular drain (ventriculostomy) placed on hospital day #1 EEG on day 1 showed seizure activity that has resolved Nasogastric tube placed for tube feeds and medications An IVC filter was placed on day #5. Lower extremity Doppler – negative for DVT in both LEs	Chest (Day #7) – Left lower lobe consolidation Radiologist interpretation: probable pneumonia
Physical Exam	
General – Elderly, obese man who is sedated on a ventilator	
Skin – Cool extremities with 2+ edema in lower extremities	
HEENT – PERRLA; pink conjunctiva	
Chest – decreased breath sounds and crackles on left side	
CV – tachycardic, +S1S2, no bruits	
Abd – Soft, non-distended; no masses or obvious tenderness	
Neuro – Limited by sedation; deep tendon reflexes normal; tested cranial nerves normal	

**ASHP CLINICAL SKILLS COMPETITION
PHARMACIST'S PATIENT DATA BASE FORM (Cont.)**

Allergies/Intolerance's		Prescription Coverage	
Penicillin - Rash		Insurance: Medicare	
		Copay:	
		Cost per month:	
		Annual Income:	
Current Drug Therapy			
Drug Name/Dose/Strength/Route	Prescribed Schedule	Duration Start–Stop Dates	Indication
1. Propofol infusion at 20 mcg/kg/min	Continuous infusion	HD #1 – present	Sedation
2. Sliding scale insulin	PRN after glucose checks	HD #1 – present	Hyperglycemia
3. Simvastatin 20 mg via tube	Daily	HD #1 – present	Hyperlipidemia
4. Lansoprazole Solutab 30mg	Daily	HD #2 – present	Stress ulcer prophylaxis
5. Phenytoin 100 mg via tube	Q8H	HD #2 - present	Seizure
6. Fluoxetine 20 mg via tube	Daily	HD #1 – present	Depression
7. NSS infusion	100 mL/hour	HD#7 - present	Hypotension
8. Norepinephrine infusion	4 mcg/min	HD#7 – present	Hypotension
9. Promote® with fiber via tube	80 ml/hour continuously	HD#3 – present	Nutrition
10. Phytonadione 10mg IV	Daily	HD#1 – HD #2	Reversal of anticoagulant state
11. Phenytoin 1000mg IV	Once	HD#1	Seizure
Medication History			
Home medications include: Amlodipine 5mg PO daily, Lisinopril 5mg PO daily, Warfarin 2.5 mg daily, and simvastatin as above. Compliance is unknown.			

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. 	

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

Evaluated for
competition

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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ASHP Clinical Skills Competition - Pharmacist's Care Plan

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ASHP Clinical Skills Competition - Pharmacist's Care Plan

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