SMALL GROUP SESSION 19B
January 24th or January 26th

Groups 13-24: VS and Chest Exam and Harvey Stethophone Session

Readings: Review the cardiac exam web module.
Mosby’s Physical Examination, 4th ed., Chapter 13, pp. 433-466 or
5th ed., pp. 429-449, 470-477 and 480-486
AND:

OR: http://medicine.ucsd.edu/clinicalmed/heart.htm
AND: http://medicine.ucsd.edu/clinicalmed/lung.htm
AND: http://medicine.ucsd.edu/clinicalmed/vital.htm

Prepare by:
Completing the cardiac examination tutorial on the POM1 web site.

- bringing your stethoscope; dressing for the chest exam workshop (2-piece outfit, sports bra)
- bringing the results of your research on last week’s heart case
- Mentors, bring physical examinations supplies

Brief Outline:
Section 1: Touch Base (30 minutes)
Section 2: Harvey Stethophone Session (1 ½ hour)
Section 3: Chest and VS examination (1 hour)
Section 4: Evaluate Session
(Note: order of sessions will vary, as groups will take turns spending an hour with Harvey)
Section 1: Touch Base (30 minutes) What did you learn from researching last week’s heart case?

Section 2: Harvey Stethophone Session (90 minutes)
Objectives:
To begin to hear both normal heart sounds (S1, S2 including physiologic split), unusual sounds (S3 and S4) and a few common systolic murmurs (systolic flow murmur, aortic stenosis, mitral regurgitation).

Logistics:
Go to Camp Heart Auditorium. Enter the anteroom by the elevators; Harvey is in a small room on the left just before the entrance to the auditorium.

Section 3: Blood pressure and chest examination workshop (60 minutes)
Objectives:
To learn how to take accurate blood pressures
To observe and practice examination of the chest

Overview of blood pressure measurement
• Check to be sure patient has not had an Arterio-venous fistula or mastectomy – blood pressure measurement is contra-indicated ipsilateral to these conditions.
• Select an appropriately sized blood pressure cuff.
• Place the cuff snugly about the patient’s arm, with the center of the bladder over the brachial artery, and the cuff 2 to 3 cm above the antecubital fossa.
• Support the patient’s arm near heart level.
• Palpate the radial pulse.
• Pump up the cuff until you cannot feel the radial pulse, and then pump it up an additional 20 mm of Hg.
• Deflate the cuff at a rate of 2 to 3 mm Hg per minute and note the pressure when the radial pulse is palpable- the palpable systolic pressure, then deflate the cuff rapidly.
• Wait 30 seconds, and then pump up the cuff to 20 mm Hg over the palpable systolic pressure.
• While listening with the bell of your stethoscope over the antecubital fossa, release the pressure from the cuff at a rate of 2 to 3 mm Hg per minute.
• Note the pressure at which the first two consecutive beats heard (phase I of Korotkoff sounds) - the systolic blood pressure.
• Note the last beat heard (phase V of Korotkoff sounds). Deflate the cuff immediately.
• Record phase I of Korotkoff sounds as systolic blood pressure, and phase V of Korotkoff sounds as diastolic blood pressure.
• The blood pressure should be repeated in the other arm, if this is the first time you have measured the patient’s blood pressure.
Chest Examination Logistics:

Have your mentor demonstrate physical diagnosis of the chest, including:

1. Inspection: of normal movement of the chest, abdomen and adjacent (accessory) muscles during breathing
2. Palpation: of surface anatomy of the thorax: include clavicles, scapulae, spine, ribs, sternum, manubriosternal angle (angle of Louis) and xiphoid.
4. Percussion- technique; percussion of the diaphragms and diaphragmatic excursion.
5. Auscultation of the lungs: use of the stethoscope; normal breath sounds in various parts of the lung; posterior and anterior auscultation.
6. Vocal resonance while auscultating with the stethoscope, ask patient to say “ee”.

After this, break into pairs again and practice examining each other. For this session, we suggest you go into two separate same-gender rooms. Your physician mentor should go from one room to another to answer questions and demonstrate technique.

ATTACHED ARE THE PARTS OF THE OSCE PERTAINING TO CHEST AND VITAL SIGNS. THE SAME SHEETS WILL BE USED TO EVALUATE YOUR EXAMINATION IN THE END-OF-SEMESTER GRADED OSCE.

Part 4: Evaluate Session
How did this session go? Did you have enough time for each section?

(Remember, this is your first try at chest examination. You will have many more opportunities to practice and learn).
## Physical Examination
### Objective Structured Clinical Examination (OSCE)

### Blood Pressure

<table>
<thead>
<tr>
<th>Procedure</th>
<th>A = Attempted</th>
<th>Satisfactory</th>
<th>B = Attempted Below Satisfactory</th>
<th>C=Did Not Attempt</th>
<th>Comments</th>
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</thead>
<tbody>
<tr>
<td>1. Ex slightly flexes patients arm and supports arm (table, hold arm, etc).</td>
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<td>2. Ex checks size of cuff, locates brachial artery by palpation, and places cuff snugly about upper arm, centering the bladder over the brachial artery – arm should be free of clothing.</td>
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<td>3. Ex palpates radial pulse, and pumps up blood pressure cuff until radial pulse is no longer palpable, and then rapidly deflates the cuff, and waits 30 seconds before proceeding. Ex places stethoscope (bell preferred, diaphragm acceptable) over brachial artery, pumps up cuff 20 to 30 mm Hg above palpable systolic pressure, and then releases cuff slowly, at rate of 2 – 3 mm Hg per second, listening for Korotkoff sounds. Ex records blood pressure.</td>
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<td>4. PULSE: Ex palpates the radial artery for at least 15 seconds.</td>
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<td>5. RESPIRATION: Ex stands in front of or behind pt and observes breathing at rest for at least 30 seconds (normal rate is 10-16 breaths per minute). Ex states respiratory rate.</td>
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<tr>
<td>Procedure</td>
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<td><strong>1. INSPECTION OF CHEST:</strong> Ex visually inspects Pt’s chest while sitting for shape and symmetry, symmetry of respiratory excursion, pulsations, heaving and respiratory effort. (Ex states what they are inspecting for)</td>
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<td><strong>2. THORACIC EXPANSION:</strong> While standing behind Pt, Ex places thumbs parallel and several inches lateral to pt’s mid to lower spine. Ex then asks Pt to inhale deeply while Ex feels the range and symmetry of Pt’s respirations.</td>
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<td><strong>3. TACTILE FREMITUS:</strong> While standing behind Pt, Ex places his/her palmar surface of both hands on Pt’s upper, middle, and lower back. Ex asks Pt to recite a few words or numbers (ex. “99”) while Ex palpates with a firm, light touch both sides simultaneously.</td>
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<td><strong>4. PERCUSSION:</strong> Ex percusses over posterior and anterior chest. Ex moves from one side across to the other and down.</td>
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<td><strong>4a. PERCUSSION TECHNIQUE:</strong> Ex places middle finger, which is hyperextended, against pt’s skin, lifting the rest of stationary hand up. Using the middle finger of the dominant hand, ex bounces it off the stationary one.</td>
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<td><strong>5. DIAPHRAGMATIC EXCURSION:</strong> Ex asks Pt to “take a deep breath and hold it” while Ex percusses down the scapular line. Ex then asks Pt to “exhale and hold it” as much as possible while he/she percusses the back. Both inhale and exhale percussion procedures should be done on both sides of the Pt’s back.</td>
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<td><strong>6. POSTERIOR BREATH SOUNDS:</strong> Ex asks Pt to breathe deeply through mouth while Ex listens to AT LEAST ONE FULL BREATH AT EACH POSITION on the back. Ex moves from one side of the back across to the other and down.</td>
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<td><strong>7. ANTERIOR BREATH SOUNDS:</strong> Ex uses stethoscope to listen to both sides of the front of Pt’s chest. Ex progresses from side to side moving downward using the same sequence while listening to one full respiration on each location.</td>
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<td><strong>8. AUSCULTATION TECHNIQUE:</strong> Ex listens to the Pt’s chest using the diaphragm of the stethoscope, which should be pressed firmly onto chest.</td>
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<td><strong>9. VOCAL RESONANCE:</strong> While auscultating with the stethoscope over the back, the examiner asks the patient to say “E.” Ex moves the stethoscope from one side to the other, moving downward, while listening to patient say “E” at each location.</td>
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