

# Patient Encounter: Using Virtual EHR To Integrate Library Resources With Second Year Medical Students

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# About Augusta University

- Comprehensive research university
- Ten colleges and schools with 9,055 students
  - Liberal arts, humanities, sciences and health sciences
- Health Sciences Library Supports
  - College of Allied Health
  - College of Nursing
  - Dental College of Georgia
  - Medical College of Georgia
  - The Graduate School



AUGUSTA UNIVERSITY

Robert B. Greenblatt, M.D.  
Library

# Medical College of Georgia : Embedded Support

- Librarians assigned to college
  - Chair, Research and Education Services
  - Associate Director for Research
  - Recently hired Clinical Information Librarian
  
- Project team included
  - Chair, Content Management
  - Allied Health Sciences Librarian
  - Faculty Course Coordinator
  - Pharmacy Faculty



# Project Background



- Embedded librarians participated in curriculum planning team
  - Vertical integration of EBM instruction
  - Introduce and then reinforce information resources
- Component of Essentials of Clinical Medicine Course
  - Second year medical students (Augusta campus)
  - Introduced to clinical and point of care tools
- Students need practice in integrating multiple information resources into patient care encounters



# Original Learning Activity

- Students interview standardized patient
  - Review patient history
  - Begin formulating diagnosis
- Guided worksheet to navigate information resources
  - Library and clinical faculty joint facilitators
  - Students completed assignment in teams
  - Combined worksheets submitted to online course



### Clinical Scenario #2 – DVT

Date	Name MRN Age/sex	PCP	Allergy	Code	Diagnoses	Past HX	Medications
3/22/16	Bradford, Ellen 9988776655 52F	Dr. McCall	NKDA	Full		Obesity, asthma, ETOH abuse, HTN, GERD, Total Right Hip arthroplasty (1/16)	Famotidine 20 mg PO BID, Lisinopril 10mg PO QD, Aspirin TID, Albuterol 1 puff Q6 PRN for wheezing

1. First be sure you understand all the information on the patient's chart above. Refer to your attending clinician for any questions. Use **Micromedex** to review the patient's medication list and be sure the medications are appropriate for her given history. List the medications and their use in this patient below:
2. Use **Essential Evidence Plus** to find a diagnostic support tool called the Wells Score for DVT to help you determine if this patient has a Deep Vein Thrombosis (DVT) based on the findings above. Write the probability of a DVT below. Review a DVT topic from **UpToDate** on Deep Vein Thrombosis. Give a list of differential diagnoses below. While you are looking at the Wells Score you have also sent a D-Dimer test to the lab. Use **Access Medicine** to determine what D-Dimer is and why you are using it and place the explanation below.
  - Wells Score/probability:
  - Differential Diagnosis:
  - D-Dimer explanation and use:



3. The D-dimer is now back from the lab and is elevated at 423 µg/L. Refer to the **9<sup>th</sup> edition Chest Guidelines for Antithrombotic Therapy and Prevention of Thrombosis**.  
<http://journal.publications.chestnet.org/article.aspx?articleID=1159399> what should be your next step in confirming your diagnosis of a DVT in this patient?
  
4. Using **Essential Evidence Plus** what outpatient therapy would you like to start and why? Use Micromedex (if needed) to determine an appropriate dose. Are there any precautions or follow up testing you would recommend? How long should the patient remain on therapy?
  
5. Use **PubMed** to search the literature and find an article on the efficacy of direct oral anticoagulants versus Coumadin on deep venous thromboembolism, place the citation and a brief summary below.



# Student Response: Positive



- Enjoyed interviewing standardized patient
- Hands-on practice valued
- Demonstrated differences between resources
- Majority of worksheets completed well
- Students see librarians as part of clinical team






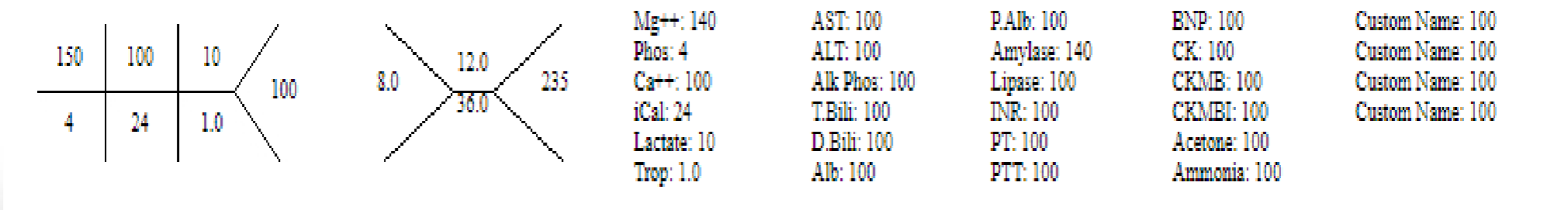
# Assignment Pitfalls/Problems

- Students divided up resource questions
- Students chose familiar resources to address
- Student viewed questions as task to check off
- Failed to integrate information as part of a process
- Miss connections between resources and patient care



# Assignment Revision

- Integrate virtual electronic health record
  - Neehr Perfect -- new name is 
  - Student experience patient assessment
  - View clinical data combined with resources
  - “Real world time frame” for multiple decision points
- Keep standardized patient
  - Add clinical records to provided data
  - Lab results



NICOLE ADMIN CONTACT LOGOUT

ehr go

Create Collections Community Library Help ▾

Views: Faculty Student Edit


1 Overview & Resources 2 Launch EHR 3 Download Work

Patient: Sabina Valdez

DUPLICATE EDIT

**PATIENT DESCRIPTION**  
Sabina is a 5-year-old Hispanic female who is brought to the clinic today by her mother with wheezing. Sabina will need a general assessment, peak flow and medication administration.

**AUTHOR**  
Nicole Winston / Augusta University



## Student Roles

- Review and add medications
- Place additional orders
- Interpret lab results for diagnosis
- Add patient care notes



ehr go

**Patient:** Sabina Valdez  
Central Clinic

- Discovery
- Health**
- Overview
- Alerts
- Problems
- Vitals
- Orders
- Meds
- Notes
- Care Plans
- Labs

Cardio/Respiratory - No history of murmur. Expiratory wheezes and tachypneic.

Gastrointestinal - No changes in frequency of bowel movements, normally has BM 1-2 times per day. No vomiting or diarrhea and rarely soils herself anymore.

Genitourinary - No urinary frequency or sign of dysuria, no vaginal discharge noted by mom.

Neuromuscular - No history of seizures, loss of coordination or change in gait.

Musculoskeletal - No history of fractures.

### Chest X-Ray Details

#### Basic Information

**Date:** 05/07/2018 13:13  
**Author:** David Collins, Radiologist  
**Location:** General Hospital

**Title:** Chest X-Ray

**Note:** Chest xrays demonstrate very marked hyperinflation of both lungs. No infiltrates are seen. Over 11 posterior ribs are visible, the diaphragms are flattened and there is enlargement of the retrosternal airspace. Pulmonary vasculature not terribly distorted, although there is some prominence of the pulmonary arteries. Findings consistent with Stage III Chronic Obstructive Lung Disease.

Anterior



CATEGORY	ORDER ITEM	FREQUENCY	STATUS	WHEN
Screening/Measurements	Peak Flow	AS DIRECTED	Active	02/13/2016 19:06
Screening/Measurements	Lung volumes	ONCE	Complete	02/13/2016 15:21
Screening/Measurements	Spirometry	ONCE	Complete	02/13/2016 15:16
Scheduled Meds	albuterol 0.63 MG (albuterol sulfate 0.75 MG) per 3 ML Inhalant Solution - Dose: 1 Puff	ONCE	Active	02/13/2016 11:04

### Inpt Processing Details

<b>Date:</b>	05/07/2018 15:58
<b>Category:</b>	Scheduled Meds
<b>Author:</b>	Hal Brenton, MD
<b>Provider:</b>	Hal Brenton, MD
<b>Medication:</b>	24 HR Nifedipine 30 MG Extended Release Oral Tablet (Adalat)
<b>Alternate name:</b>	Adalat
<b>Barcode ID:</b>	6729165801
<b>Dose:</b>	30 MG
<b>Route:</b>	By Mouth (PO)
<b>Order Details:</b>	Hold if systolic blood pressure is below 110
<b>Frequency:</b>	DAILY (0800)
<b>Status:</b>	Non-Verified
<b>Starts on:</b>	05/07/2018 15:58
<b>Ends on:</b>	05/15/2018 11:57

Author *	Comment *	Attachment
2/2018 16:32  Nicole Winston	Comment here	<input type="text"/>
		<input type="button" value="ADD"/> <input type="button" value="x"/>
<input type="button" value="Add Comment"/>		



# Student Response To Change

- More focused on clinical information as equal weight with standardized patient interview
- Effectively applied information resources at decision points for evidence based care of virtual patient
- Students seamlessly integrated information resources in the acquire, appraise and apply EBM steps
- Students were engaged as a cohesive team as opposed to segmented individual resource searching



# Lessons Learned



- Reinforces library role within the clinical environment
- Builds relationships with clinical faculty
  - Learning experience for clinicians new to process
  - Develop partner approach to working with students
- Requires significant time investment
  - Develop clinical scenarios
  - Testing the flow of clinical data
  - Creating student input options in health record



# Project Team

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# Resources

- Images Credit: Pixabay  
<https://pixabay.com/en/>
- Virtual Electronic Health Record: EHR Go  
<https://ehrgo.com/>

# Questions?



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