Creating clinical case studies as open educational resources at a new medical school.

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Mission
UH College of Medicine is accountable to society for improving the overall health and health care of the population of Greater Houston, Texas and beyond.

- Educating a diverse group of physicians who will provide compassionate, high-value (high quality at reasonable cost) care to patients, families and communities, with a focus on primary care and other needed physician specialties, such as psychiatry and general surgery.
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- Inaugural year
- 30 students, eventually 120 students

Curriculum
- Integrated - basic science and clinical \textit{faculty co-teach} (rare)
- Interactive (only 25%)
- Significant effort to utilize and/or generate \textit{Open Education Resources} to reduce student costs.
Integrated Clinical Cases

• Great opportunity to generate original, curricular content that can be adopted by other health professional students

Some Example Clinical Cases

• “Bad Breath” - a case of alcoholic liver disease
• “Gerdy’s Gerd” - a case of gastroesophageal reflux disease
• “My knee is killing” - a case of total knee replacement

Many Others

• Myasthenia Gravis
• Sjogren’s Syndrome
• “Helen’s Helicobacter”
Patient

Al Pate (fictional patient name), is a 52-year-old Caucasian male returns to your office to receive results from tests that you have ordered. He originally presented to your office with his wife Lady Pate because they are concerned about his bad breath. After a thorough examination, you decided to send some lab work. Today is a follow up visit.

Case consists of:

• Learning Objectives
• Pre-work for students
• Instructor’s Guide, with “answers”, timed activities, case discussion questions
• Narrative, lab results, medical images, social determinants of health
Higher order and easily adoptable learning objectives

Instead of:

1. “Appreciate that alcoholic liver disease is a leading cause of mortality”
2. “Know that alcohol is metabolized by alcohol dehydrogenase and by cytochrome P450”
3. Recognize abnormal liver function results:
   1. AST to ALT ratio
   2. Elevated bilirubin
   3. Elevated MCT
   4. Decreased lymphocyte count
   5. Elevated transaminases

1. “Explain the epidemiology of alcoholic liver disease”
   - Students discover on their own the impact of ALD
2. Describe how alcohol is normally metabolized by the liver.
3. Contrast liver function laboratory results from a patient with ALD to a patient with normal lab findings.
   - Allows for adoption of new methods, technologies, clinical recommendations
“Bad Breath”: An integrated case study of alcoholic liver disease for first year medical students.

Omar Matuk-Villazon, MD, MBA and Kevin Rowland, PhD

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READ BOOK

Download this book
The complete case can be found here: “Bad Breath”
Julie Robinson (Faculty)

7 weeks ago

I'm going to modify this for use in an undergraduate 200-level A&P course. The resource is very thorough, including a student work document, a specific instructor key, and a well-scripted timeline for use in the classroom. The timeline provides multiple places for discussion and "check your understanding" type checkpoints for students before they move on to the next part of the assignment. I find the timeline information useful to give me an idea of how long this might take.

Time spent reviewing site: A few hours
Lessons Learned

• UH College of Medicine faculty are writing integrated clinical cases as OERs

• Broad, higher order objectives are more easily adopted and stand the test of time.
  – Students learn how to find and apply the most up to date clinical approach.

• Plan on publishing a series of cases
Next Steps

• Submit IRB to gather data from student analyzing critical thinking and knowledge integration.

• Generate more cases that are “timeless” and create a solid foundation for future physicians.
Conclusion

• UH College of Medicine is invested into create educational innovations that highlight high level knowledge integration not memorization.

• More data is needed to analyze if this particular intervention increases knowledge integration.