

Case Based Learning on FHIR

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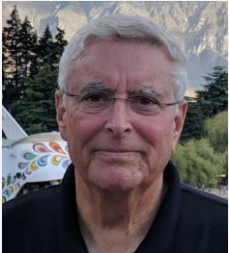
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Who are we?



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Case Based Learning in Medical School

- Began at McMaster University in 1965
- Puts the basic sciences into the context of simulated patient care
- Based on group discussion
- Widely deployed in US medical schools (133/141, AAMC data)
- Pluses
 - Popular with students and faculty
 - Students “do well, and sometimes better, on clinical examinations and faculty evaluations”
 - Students more likely to go into family medicine
- Challenges
 - Expensive (case development and maintenance, small groups)
 - Discussions may not equally involve all students
 - No evidence of enhanced learning (instances of lower standard test scores)

Currently Paper/PDF Based



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MEDI7111: Clinical Science 1 2019
CVS 1: Short Case 1

Title: An Unlucky Horseshoe

Last Updated: Feb 2019

Case updated by: Dr Pieter Jansen with thanks to previous contributors and reviewers from the Clinical Science team.

Note: Remember to refer to the Phase 1 Handbook for guidelines on the CBL discussion process. If you are allocated to prepare and present this short case, please take note of the guidelines for this.

Discussion starters are intended as prompts for discussion, should you need them. Always **first** follow the CBL process (cues, hypothesis and mechanisms, need to know) and the natural flow of the group discussion, *then* refer to these for any extra points. Discussion starters are not intended to be a definitive list, and groups may choose to expand on them to meet their academic needs and interests.

Trigger 1: Presentation

Kylie, a 19 year old university student presents to your clinic complaining that she feels really unwell. Over the last couple of days, she has experienced some dysuria and frequency but put off seeing a doctor as she is in the midst of exams. This morning she developed left sided abdominal pain and has experienced rigors. She feels nauseated and has vomited twice. Kylie lives in one of the residential colleges. Since moving to Brisbane from New Zealand has not needed to see a doctor other than to renew a prescription for the oral contraceptive pill, which she takes to help manage her acne. She asked the receptionist for a urine specimen container and whilst waiting for her appointment visited the practice facilities to provide a sample. She hands you the specimen and says 'I knew you would want this but that is all I could manage'. The jar contains approximately 5ml of concentrated, cloudy urine.

Project Objectives

- CBL as interactive computer-based education
- More closely simulate patient care and decision making
- Digital patients, FHIR for EHR connectivity
- SMART to support FHIR Apps for Education
- Introduce students to the potential role of informatics in patient care
- Utilize the platform to facilitate multi-disciplinary training
- Develop a collaboration with sharing of case and app resources

DEMO

Where is the FHIR?

Where you would probably expect

- Patient (each user gets a new one)
- Practitioner (each user is one), CareTeam (for group cases)
- Conditions, Encounters, Procedures, Observations (including social determinants), Questionnaires, DiagnosticReports, MedicationUsage/Request
- Connects to a terminology server (Ontoserver)
 - SNOMED CT for Conditions, Procedures, Medications (AMT), Encounters (reasons)
 - LOINC for Observations

Where is the FHIR?

Where you might expect

- SMART-on-FHIR apps: most of these have been developed specifically for the platform by UQ software engineering student groups

Where you might not expect?

- “Template” DiagnosticReport/Observations
- The case definition is a Composition
- The case in progress is a QuestionnaireResponse

Why FHIR?

- Keeps it realistic
- Lets us capture data about clinical actions (and case actions) performed by the student
- SMART apps
 - Add functionality that is specific to one or more cases

Challenges

TIME

Next

- Learning analytics
 - We have lots of fine grained data about what students do
 - <https://pathling.csiro.au>
- Chatbot
 - Virtual patients to train students in history taking
- Team cases
 - Students from different clinical disciplines collaborating on cases

Contact

- During DevDays, you can find / reach us here:
 - Via Whova App – Speaker’s Gallery
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Q&A

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