

Zipinar



Electronic Health Record Classroom (EHR-C)
and
Case-Based Learning (CBL)

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Zipinar Goal & Learning Objectives

Goal: The purpose of this Zipinar is to give a quick overview of the application of Electronic Health Record Classroom (EHR-C) to case-based learning (CBL).

Learning Objectives: By the end of this Zipinar, you will be able to:

- Describe the EHR Classroom (EHR-C) and case-based learning (CBL)
- Follow the CBL teaching steps
- List the advantages and challenges of applying the EHR-C to a CBL class
- Identify additional resources for using the EHR-C

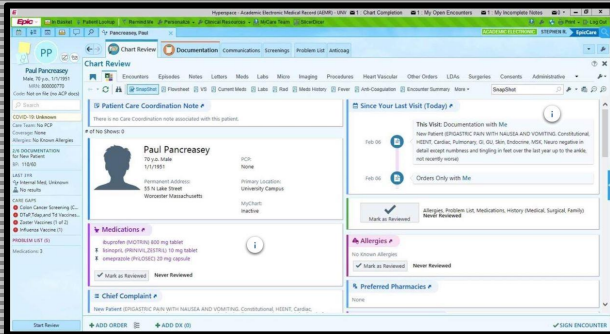
What is an Electronic Health Record?



Electronic Health Records (EHRs) are digital files of a patient's chart and includes critical patient care documentation, provider and patient communication, quality analyses, ordering, medication prescribing, and reconciliation.

The difference between an electronic medical record (EMR) and electronic health record (EHR) is that the EHR can move with the patient to other healthcare providers or across states while an EMR stays with the healthcare provider(s).

The EHR Classroom is a learning tool created in Epic training environment to help students acquire and practice skills for clinical problem-solving and patient care through safe and effective utilization of diverse and authentic patient cases. [Learn more.](#)



What are the benefits of using an EHR ?

1. Medical Knowledge
2. Practice-Based Learning and Improvement
3. Patient Care
4. Interpersonal and Communication Skills
5. Professionalism
6. Systems-Based Practice

1. Can access multiple mock patient records to build knowledge base and uses standardized medical terms
2. Instructs best practices and opportunities for research and quality improvement topics
3. Learner workflow: reduced time in gathering patient history or PE and can track a patient over time
4. Learners spend less time gathering and more time synthesizing data with small group
5. Patient-provider experience rather than recall of memory
6. Shows integration of a network of healthcare providers

What are the challenges in using EHRs?

Instructional:

- A learning curve to use EHRs and other versions available than Epic
- Requires a lot of time to prepare mock patient records to study
- Use of EHRs not well integrated into medical education and often presented as an abstract training of the technology
- Fear of inaccurate patient information due to “leave no box unchecked”
- Absence of accreditation of EHR competencies

Learner:

- Digital natives may think EHR replaces dialog with patient
- Automated clinical decisions may hamper learners developing clinical reasoning
- Overuse of time on computer and declining bedside skill
- Not all clinical sites use the same EHR system

Technical issues

- Loss of internet connection
- Need to update data regularly

Medical School Curriculums* Using EHR

George Washington SOM uses EHR in all 4 years with virtual, standard, and fake patients.

New York University SOM has a virtual patient panel with deidentified data for students to write notes.

Oregon Health Sciences University receive clinical informatics instruction, uses an institutional EHR in OSCEs with standardized patients, and has a case-based curriculum.

Regenstrief Institute, Indiana University SOM has an EHR Clinical Learning Platform with deidentified patient data to practice writing orders, entering notes, reviewing data, and creating a care plan.

University of California Irvine SOM is having first year medical students chart patient records in an EHR to minimize errors and maximize patient quality care.

University of Connecticut SOM uses a Teaching Electronic Health Record (tEHR) in collaboration with Indiana University for its Stage 1 curriculum with three virtual families.

University of Iowa Carver COM developed EHRU for use in an interprofessional curriculum.

University of Michigan developed VistA for Education (VFE) a version of US VA computerized patient record system

Vanderbilt University SOM has a student electronic portfolio to securely upload student's patient notes for faculty to evaluate.

Warren Albert Medical School of Brown University has a longitudinal EHR curriculum within its clinical doctoring course series with mock patient data.

*This is a sampling of medical using EHR in their curriculums.

How to begin with EHR-C?

The screenshot displays the Epic EHR interface for a patient named Paul Pancreasey. The interface is organized into several sections:

- Header:** Shows the patient's name, MRN (800000770), and various navigation tabs like Chart Review, Documentation, and Communications.
- Left Sidebar:** Contains patient demographics (Male, 70 y.o., 1/1/1951), COVID-19 status (Unknown), care team information, and a list of care gaps (Colon Cancer Screening, DTaP, Tdap, and Td Vaccines, Zoster Vaccines, Influenza Vaccine).
- Central Panel:**
 - Patient Care Coordination Note:** States there is no note associated with this patient.
 - Since Your Last Visit (Today):** A timeline showing a visit on Feb 06 for "Documentation with Me" and "Orders Only with Me".
 - Medications:** Lists ibuprofen (MOTRIN) 800 mg tablet, lisinopril (PRINIVIL, ZESTRIL) 10 mg tablet, and omeprazole (PRILOSEC) 20 mg capsule. A "Mark as Reviewed" button is present.
 - Chief Complaint:** "New Patient (EPIGASTRIC PAIN WITH NAUSEA AND VOMITING, Constitutional, HEENT, Cardiac, Pulmonary, GI, GU, Skin, Endocrine, MSK, Neuro negative in detail except numbness and tingling in feet over the last year up to the ankle, not recently worse)".
- Right Panel:** Includes sections for "Allergies" (No Known Allergies) and "Preferred Pharmacies" (None). Both have "Mark as Reviewed" buttons.
- Bottom:** Features "Start Review", "ADD ORDER", "ADD DX (0)", and "SIGN ENCOUNTER" buttons.

Pictured here is an example of an EHR-C patient snapshot. This [LINK](#) will go to the EHR-C OUME webpage with instructions on accessing EHR-C, Patient search, create a patient, handbook, student resources, and a Patient Profile Cookbook.

Examples of EHR-C Applications at UMMS

Course

- Building Working Cells & Tissues (BWCT) & Doctoring & Clinical Skills (DCS)
- Development, Structure & Function (DSF) Lab
- Principles of Pharmacology (POP)
- Infections (INF)
- Integrated Case Exercises (ICE)
- Doctoring & Clinical Skills (DCS)
- Longitudinal Preceptorship Program (LPP)
- Cancer Concepts
- Medicine Clerkship
- Family Medicine Clerkship
- Center for Academic Achievement CAA
- Admissions
- Graduate School of Nursing GSN

EHR-C Application

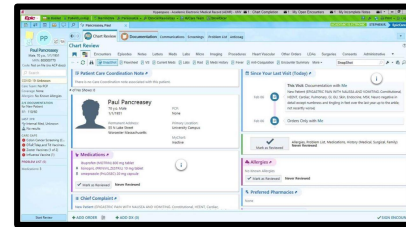
- Shared metabolic case
- Donor cases
- Ophthalmic medication
- Patient with cavitary lung disease
- GI cases
- Cases to build course
- Hospital session cases
- Mock tumor board
- H&P entry
- Part of simulated McQ family
- Clinical Problem Solving skills
- Patients for BACCMD program
- Simulation

What is Case-Based Learning (CBL)?



Learner Group

Facilitator



EHR-Case



?

What is the differential diagnosis and treatment plan?

Case-Based Learning is an instructional method for any group of 2-20 participants who come together with a **facilitator to problem-solve a presented clinical case.**

- Requires guided active learning as the case evolves with clinical data
- Includes questions and pauses for reflection
- Emphasizes the process to problem-solve the case
- Employs critical thinking skills that build on basic clinical knowledge

Basic CBL Facilitating Steps

1. Tell a story and recognize the relevant information in EHR-C
2. Define the problem – the chief complaint and pertinent positives and negatives –avoid jumping to premature judgement
3. Determine what information is missing and suggest additional tests
4. Identify potential causes that created the problem (the differential diagnoses)
5. Elicit treatment ideas to solve the problem and prioritize
6. Agree on the treatment action

Advantages of EHR Classroom & CBL

For the Learner

- Organizes the clinical information
- Provides a simulated clinical experience to practice skills
- Increases student confidence in working with EHR cases
- Offers a testing ground for their clinical thinking process
- Encourages peer teaching
- Engages with EHR cases in a meaningful way
- Identifies care delivery quality including SDOH

For the Facilitator

- Presents clinical EHR scenarios to build student's experiences
- Strengthens appropriate use of EHR
- Guides student responses on a given case through CBL
- Provides an opportunity for facilitator to witness student's clinical reasoning ability
- Gives feedback to peer successful behavior in discussing case
- Presents longitudinal and interprofessional experiences

Suggested EHR in Case-Based Learning

EHR Classroom as a tool provides:

1. Logging learner EHR encounters
2. Selection of patient's record and automatically extracting data
3. Data collection to identify chief complaint
4. Opportunity to discriminate relevant information
5. Real-life role play
6. Clinical decision support for differential diagnosis and additional diagnostic tests
7. Practice in entering diagnosis and treatment plan

CBL

1. Learner signs on system
2. Navigates to mock patient record
3. Access initial data to identify chief complaint
4. Reviews patient's history and physical exam results
5. Discusses case
6. Generates a differential diagnosis and may order more tests
7. Enters diagnosis and order for medications or procedures

Your Thoughts?



Please click on this [LINK](#) and take the brief survey and share your thoughts about this Zipinar.

For Residents, fellows, graduate students and medical students; please enter your name and site so that UMMS and your clinical site knows you viewed this Zipinar.

Thank you for taking the time to view this quick overview.

Reading Sources

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