MISSION: Impossible?
Keeping Patients Safe, Using the Electronic Medical Record, and Educating Medical Students and Residents

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June 12, 2014
Disclosures

*Always interested in fame, fortune, promotion and tenure
*Duke GME Innovations Grant recently awarded (starting July 1, 2014) to help study the impact of copying and pasting on patient care and medical education
*Strong opinions about patient care, safety, education, and documentation funded (or not) through various clinical, educational, and administrative roles

...the opinions expressed in this presentation are the presenter’s and not necessarily the institution’s
Your Mission...

- List at least three changes in medical education over the last decade
- Discuss/Debate at least two advantages and two disadvantages of patient safety initiatives with respect to patient outcomes and medical education
- Describe advantages and pitfalls of the electronic medical record (EHR) on medical education
- Discuss/Implement strategies to optimize education in the era of accountability and the EHR
My Mission...

• Create an opportunity for FACULTY DEVELOPMENT and/or RESIDENT EDUCATION regarding medical education and your role in it

• Describe opportunities for enhancing patient care and medical education
A Few Definitions

• Medical Education Terminology
  – UME = Undergraduate Medical Education
    • Medical Students
  – GME = Graduate Medical Education
    • Residents
  – CME = Continuing Medical Education
    • Post-residency
  – Trainee = Someone who is “in training”
    • Medical Student, PA Student, Nursing Student, Resident, Fellow, Psychology Intern, SW Intern
A Few Definitions

• Medical Record Terminology
  – EHR = Electronic Health Record
  – MAESTRO = The Duke-Specific “brand” of “EPIC” EHR
  – VA CPRS = The Veterans Affairs EHR
  – CRH CPRS = Computerized Patient Record System at CRH
  – “Binder” or folder in which care providers wrote notes, test results, orders, etc.
A Few Definitions

• **ACGME** = Accreditation Committee for Graduate Medical Education
  – Private professional organization responsible for accreditation of ~9,200 residency programs

• **LCME** = Liaison Committee on Medical Education
  – An accrediting agency for medical education programs leading to the MD degree
A Few Definitions

- **APA-CoA** = The APA Commission on Accreditation
  - National accrediting authority for professional education and training in psychology
  - Doctoral graduate programs
  - Internship programs (required part of doctoral training)
  - Postdoctoral residency programs
A Few Definitions

• **The Joint Commission**
  – Formerly JCAHO
  – An independent, not-for-profit organization that accredits and certifies more than 20,500 US health care organizations and programs
1999 – To Err is Human
- Goal: 50% reduction in errors over 5 years
- Method: Regulatory and market-based

2003 – Patient Safety: Achieving a New Standard of Care
- Goal: Set and disseminate measurements; call to action
- Method: Provide observations, propose standards

2005 – Performance Measurement
- The Redesigning Health Insurance Performance Measures, Payment, and Performance Improvement Project

2006 – Preventing Medication Errors
- Goal: Decrease Medication Errors
- Method: Multi-disciplinary (hospital, provider, patient) intervention after self-study

2006 – Rewarding Provider Performance
- Goal: Encourage a more effective healthcare system
- Method: Overview and staged implementation of Pay for Performance

2009 – America’s Uninsured Crisis
- Goal: Call to Action
- Method: Point out coverage chasm
- Motivation: Reduce costs, improve access

2013 – Population Health Implications Of the Affordable Care Act
- Goal: Underline importance of health maintenance and promotion
- Impact: Focus on community, rather than institution/hospital

2014 – Assessing Health Professional Education (workshop summary)
Forces of Change in Medical Education

In the “Old Days:”
- Individual decision-making
- Hands-on/ Direct Patient Care
- Accountability for decisions
- Long LOS
- Anecdote-based practice
- Practical apprenticeship
- Learn from doing

In Modern Times:
- Decision Support
- Ancillary Services for “non-provider” roles
- Reliance on hand-offs
- Short LOS
- Evidence-based medicine
- Intellectual exercise
- Learn from thinking (maybe simulation)
Medical Education in Evolution

**In the “Old Days:”**
- No “Duty Hours”
- Fewer medications
- Longer LOS
- Elective admissions - for evaluation
  - for diagnosis
  - for Rx response
- Lower acuity for individual house staff officers
- Few “safety nets”
- High personal accountability
- Direct impact of clinical decisions

**In Modern Times:**
- Clear “Duty Hours”
  - 80 hours/week
  - one day off/week
  - 10h between shifts
  - ≤ 16 hours/intern
  - ≤ 24+3h/resident
- More medications
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Trainees will tell you they have to do more, better, in less time, with sicker patients
Medical Education in Evolution

– 1800: Symptoms and empirical treatment
– 1819: Stethoscope (Laennec)
– 1825-1850: Clinical correlations
  • Shift from empirical treatment to disciplined diagnosis
  • Learner role shift from passive to active
    – “worked rather than listened; was educated rather than instructed”
– Late 19th century: Laboratory medicine (Germany)
  • Shift from symptoms to laboratory findings and reports

The Evaluation of Medical Education in the Nineteenth Century.
Medical Education in Evolution

Traditional Methodology
• Rote memorization
• Mandatory attendance
• Studying for tests and examinations with high impact on grade
• “Learn by making mistakes”
• Hands-on patient contact
  – LP
  – NG tube
  – Phlebotomy
  – Intubation
  – ABG
  – IV placement

Evolving Methodology
• Active/Adult learning (TBL)
• Optional attendance with option for video-streaming
• Less frequent tests, less impact on grade
• Systems in place to prevent mistakes
• Patient simulators
  – NG tube
  – Phlebotomy
  – Intubation
  – ABG
  – IV placement
Medical Education in Evolution

• The Flexner Report 100 years later:
  – Increasing technology
  – Simulation labs, standardized patients
  – Community-based care
  – Patient safety
  – Global health
  – Earlier clinical exposure
  – Emphasis on interdisciplinary education
  – Team- and community-based learning

www.amednews.com/article/20101004/profession/310049932/7/
Medical Education in Evolution

Four adult learning styles (Honey, Mumford, 1986):

– **Activist**
  • Needs variety to sustain interest; enjoys collaborative learning
    – will respond well to team-based breakout sessions, varied agendas

– **Reflector**
  • Likes to hear other people’s opinions; needs time for reflection
    – will respond well to group discussion sessions and relaxed agendas

– **Theorist**
  • Likes to be challenged by complex ideas in the context of a clear structure and purpose; enjoys applying learning to practical situations
    – will be a motivated for interactive case study-based training

– **Pragmatist**
  • Likes practical tips and experience
    – will like agendas about common practical problems and how to overcome
    – will like hands-on session with relevant technologies

The evolving landscape of medical education.
Pmlive.com/pharma_thought_leadership/the_evolving_landscape_of_medical_education_470894
Medical Education in Evolution

– Post-2010:
– Basic medical education (university, medical school) with subsequent lifelong learning

– **Guiding Principles** (adult learning theory)
  - Learners must be willing to learn and understand what they need to learn
  - Training must permit learner experience (not just sitting and listening)
    - (mix plenary with group discussions, practical exercises; case studies, quizzes, practical exercises to promote retention)
  - The learner has to respect the teacher and the source of information

– Impact of the digital era on medical education → big role for the Internet
Impact of EHR on Medical Education

– Medical Students:
  • Simulation and integrating EHR into medical education = challenging

– Impediments:
  • Concerns about patient privacy
    – firewalls, institutional policies, denial/restriction of student access to EHR
  • Security issues and risk aversion
    – incomplete access for learners to see and document information
    – “observers” rather than “full users” of the technology
  • Technology
    – designed for billing (not specifically for medical education)
    – designed by administrative professionals (not educators)

Pelletier, SG. Bridging the Gap: Integrating Electronic Health Records into Medical Education AAMC Reporter: January 2014.
Impact of EHR on Medical Education

– Innovative Strategies for medical students: VANDERBILT

• Built its own EHR
• Students write notes on their patients
• Notes are displayed in the medical record
• Student notes are copied to a different secure server that houses personal electronic portfolios for assessment and feedback

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Medical Education in Evolution

Trainees have to do more, better, in less time, with sicker patients

Faculty will tell you they are more accountable for all aspects of patient care, medical decision-making and documentation; they do more of their own administrative work, may not rely on trainees for service, may not count medical student work as “billable” and have to do more, better, more efficiently, with sicker patients
Medical Education in Evolution

In Modern Times:
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Medical Education in Evolution
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Next Accreditation System (NAS)

This section provides information and detail regarding the ACGME’s Next Accreditation System, an outcomes-based accreditation process through which the doctors of tomorrow will be measured for their competency in performing the essential tasks necessary for clinical practice in the 21st century.

News:
- Key Dates for Phase I and Phase II Specialties (Updated 7/25/2013)
- ACGME Board Approved Policies and Procedures for the Next Accreditation System (NAS Effective date: 7/1/2013 - Additional Revisions Approved: 1/31/2014)
New Use for Old Tools

### Milestone Chart

#### Gross Motor

<table>
<thead>
<tr>
<th>AGE</th>
<th>GROSS MOTOR</th>
<th>FINE MOTOR &amp; VISION</th>
<th>HEARING &amp; SPEECH</th>
<th>SOCIAL BEHAVIOUR</th>
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</thead>
<tbody>
<tr>
<td>2 yr</td>
<td>Runs well. Kick ball without overbalancing Squat &amp; rise without using hand</td>
<td>Build tower of 6-7 cubes. Copies vertical &amp; circular strokes. Turn single page</td>
<td>2-3 words phrases. Identify correctly parts of face</td>
<td>Ask for food. Demands attention Dry by day</td>
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<tr>
<td>2.5 yr</td>
<td>Stands on tiptoes Jump with 2 feet together.</td>
<td>Build tower of 7-8 cubes. Imitates horizontal line &amp; circle. Recognizes himself in photo.</td>
<td>3-4 words sentences. Know full name. Continue to ask what &amp; where</td>
<td>Dry at night if lifted Restless. Throw tantrums.</td>
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<tr>
<td>3 yr</td>
<td>Walk on tiptoes Stand on 1 foot. Ride tricycle</td>
<td>Build tower of 9 cubes. Draw circle Draw man with head and 1 part Match 2-3 primary colors</td>
<td>Know his sex. Knows several nursery rhymes. Count 1-10</td>
<td>Dry throughout the night. Interactive play with other children. Take turns Like to help.</td>
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<tr>
<td>4 yr</td>
<td>Run on tiptoes. Hop on 1 foot Increase skills in games</td>
<td>Build tower with steps Draw cross Draw man with 3 parts</td>
<td>Cooperative in audiometry. Ask many questions. Tell fanciful story. Fluent speech and good articulation</td>
<td>Dress &amp; undress alone.</td>
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<tr>
<td>5 yr</td>
<td>Can skip</td>
<td>Draw square and triangle Draw man with 6 parts</td>
<td>Fluent speech and good articulation</td>
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</table>
Psychiatry MILESTONES

The Psychiatry Milestone Project
A Joint Initiative of
The Accreditation Council for Graduate Medical Education
and
The American Board of Psychiatry and Neurology

November 2013
### Psychiatry MILESTONES

<table>
<thead>
<tr>
<th>Patient Care</th>
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<tr>
<td>A. General interview skills</td>
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<td>B. Collateral information gathering and use</td>
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<td>C. Safety assessment</td>
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<td>D. Use of clinician's emotional response</td>
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<td>A. Organizes and summarizes findings and generates differential diagnoses</td>
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<td>B. Identifies contributing factors and contextual features and creates a formulation</td>
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<td>C. Creates treatment plan</td>
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<td>D. Manages patient crises, recognizing need for supervision when indicated</td>
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<td>E. Monitors and revises treatment when indicated</td>
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<td>A. Empathy and process</td>
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<td>B. Boundaries</td>
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<td>C. The alliance and provision of psychotherapies</td>
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<td>D. Seeking and providing psychotherapy supervision</td>
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<td>A. Using psychopharmacologic agents in treatment</td>
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<td>B. Education of patient about medications</td>
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<td>C. Monitoring of patient response to treatment and adjusting accordingly</td>
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<td>D. Other somatic treatments</td>
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<th>Medical Knowledge</th>
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<tr>
<td>A. Knowledge of human development</td>
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<td>B. Knowledge of pathological and environmental influences on development</td>
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<td>C. Incorporation of developmental concepts in understanding</td>
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<td>A. Knowledge to identify and treat psychiatric conditions</td>
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<td>B. Knowledge to assess risk and determine level of care</td>
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<td>C. Knowledge at the interface of psychiatry and the rest of medicine</td>
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<td>A. Neurodiagnostic testing</td>
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<td>B. Neuropsychological testing</td>
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<td>C. Neuropsychiatric co-morbidity</td>
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<td>D. Neurobiology</td>
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<td>E. Applied neuroscience</td>
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<td>A. Knowledge of psychotherapy theories</td>
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<td>B. Knowledge of psychotherapy practice</td>
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<td>C. Knowledge of psychotherapy: evidence base</td>
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<td>A. Knowledge of indications, metabolism and mechanism of action for medications</td>
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<td>B. Knowledge of ECT and other emerging somatic treatments</td>
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<td>C. Knowledge of lab studies and measures in monitoring treatment</td>
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<td>A. Ethics</td>
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<td>B. Regulatory compliance</td>
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<td>C. Professional development and frameworks</td>
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<td>A. Medical errors and improvement activities</td>
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<td>B. Communication and patient safety</td>
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<td>C. Regulatory and educational activities related to patient safety</td>
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<td>A. Costs of care and resource management</td>
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<td>B. Community-based programs</td>
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<td>C. Self-help groups</td>
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<td>D. Prevention</td>
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<td>D. Recovery and rehabilitation</td>
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<td>A. Distinguishes care provider roles related to consultation</td>
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<td>B. Provides care as a consultant and collaborator</td>
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<td>C. Specific consultative activities</td>
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<tr>
<td>A. Self-Assessment and self-improvement</td>
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<td>B. Evidence in the clinical workflow</td>
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<td>A. Specific quality improvement project</td>
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<td>B. Quality improvement didactic knowledge</td>
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<td>C. Development as a teacher</td>
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<td>A. Observational teaching skills</td>
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<tr>
<td>A. Compassion, reflection, sensitivity to diversity</td>
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<td>B. Ethics</td>
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<td>A. Fatigue management and work balance</td>
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<td>B. Professional behavior and participation in professional community</td>
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<td>C. Ownership of patient care</td>
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<td>A. Relationship with patients</td>
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<td>B. Conflict management</td>
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<td>C. Team-based care</td>
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<td>A. Accurate and effective communication with health care team</td>
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<td>B. Effective communications with patients</td>
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<td>C. Maintaining professional boundaries in communication</td>
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<td>D. Knowledge of factors which compromise communication</td>
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Changes in Medical Education

**Educational Benefits of the EHR**
- The Future is here NOW
- No more illegible orders!
- Possible improvements via EHR in medical education
- Students ask more history questions by going through electronic screens in their minds’ eye
- Instructional methods can improve communication of learners using the EHR
- Clinical educators can do real-time demonstration of clinical reasoning skills; can find and implement resources, guidelines
- Use of the EHR can promote direct feedback

**Educational Drawbacks of the EHR**
- Supervisors may be more removed from direct interaction with patients and the team
- EHR can fundamentally change the interaction with supervisor-student
- No need to synthesize information
- EHRs can be a distractor
  - Lots of computers
  - “Multi-tasking”
  - Attending may do other things while “listening” to case presentation
- Copy and paste
  - Unnecessary wasted content
  - Lost opportunity to contemplate, update, synthesize
- “Just in time knowledge”
  - Less urgent quest for information
  - Less accountability and ownership

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PLOS Medicine 2009; DOI: 10.1371/journal.pmed.1000069
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**Recommendations:**
- Teach students to use EHR from earliest clinical experiences
- Emphasize improved communication opportunities
- Conduct faculty development around teaching with the EHR
- Treat EHR as a *tool* rather than an end unto itself

## Additional Notes:
- Clinical educators can do real-time demonstration of clinical reasoning skills; can find and implement resources, guidelines
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Recommendations:

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• Conduct faculty development around teaching with the EHR
• Treat EHR as a tool rather than an end unto itself
• Remember the PATIENT at the center of every interaction

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Principles of the Hippocratic Oath

• Covenant with Apollo (god of healing/physician)
• Covenant with Teachers (collegiality and financial support)
• Commitment to Students
• Covenant with Patients (to use best ability and judgment)
• Appropriate Means (established/accepted practices)
• Appropriate Ends (do what is best for the patient, not the doctor)
• Limits on Ends (various interpretations)
• Limits on Means (leave specialty care to the specialists)
• Justice (avoid impropriety or corruption)
• Chastity (keep strict boundaries)
• Confidentiality
• Accountability
Compare and Contrast

• Computerized history-gathering

• Healthcare Provider using the EHR

Covenant with Apollo, Teachers, Students, Patients; Appropriate Means/Ends; Limits on Means/Ends; Justice; Chastity; Confidentiality; Accountability
“I fear the day technology will surpass our human interaction. The world will have a generation of idiots.”

— Albert Einstein
WHEN LIFE GIVES YOU LEMONS, MAKE LEMONADE!
Psychiatry MILESTONES

Reconciles medications by...
1) copying outpatient list over to orders
2) looking at outpatient list while copying it over to orders
3) asking the patient and/or family (and recording) what medications the patient takes
4) confirming medication list with the patient’s pharmacy
5) using methods above and also reviewing medication list for indications and interactions

Obtains historical information from...
1) reviewing the most recently updated problem list in the EHR
2) reviewing the most recently written note(s) in the EHR
3) taking a history from the patient using a standard list of questions
4) taking a targeted history based on differential diagnosis
5) history-taking, supplemented by collateral obtained from family and referring providers

Accomplishes transition of care by...
1) emailing a secure document (may be copied from yesterday) to oncoming provider
2) adding a phone conversation about emailed document
3) updating signoff function within the EHR, keeping it accurate from day to day
4) discussing issues and patient care with oncoming provider
5) going to the bedside and reviewing data with the patient and the oncoming provider
Your Mission...

• List at least three changes in medical education over the last decade
• Discuss/Debate at least two advantages and two disadvantages of patient safety initiatives with respect to patient outcomes and medical education
• Describe advantages and pitfalls of the electronic medical record (EHR) on medical education
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Is the MISSION: Impossible?
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• Your mission:
  – Demand Accountability and Professionalism
  – Use the EHR as a Tool (not an end)
  – Use MILESTONES as a Tool (not an end)
  – Use Quality Improvement as a Tool
  – Keep the Patient at the Center
References


Pelletier, SG. Bridging the Gap: Integrating Electronic Health Records into Medical Education *AAMC Reporter.* January 2014.


The evolving landscape of medical education. *Pmlive.com/pharma_thought_leadership/the_evolving_landscape_of_medical_education_470894*


