


Integrating Electronic Medical Records into Undergraduate Medical Education: Challenges and Opportunities

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Alliance for Clinical Education Resources

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EHR and Survey Background

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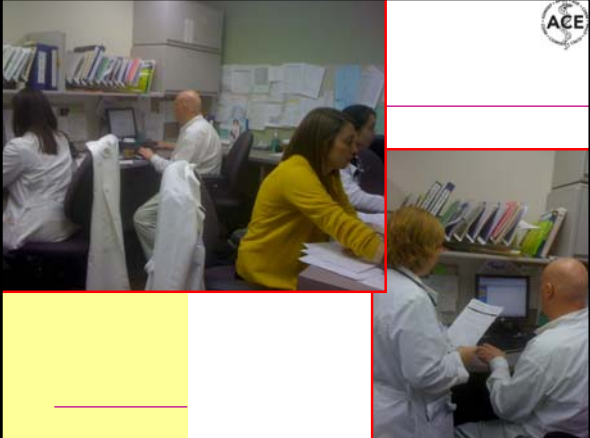
Electronic Medical Records

- EMR is a computerized legal medical record created in an organization that delivers care
- EHR is a longitudinal collection of electronic health information about individual patients or populations that is capable of being shared within across different health care settings
- They allow to automate and streamline workflow and increase safety through evidence-based decision support, quality management, and outcomes reporting



Electronic Medical Records

- American Recovery and Reinvestment Act of 2009 includes \$17 billion in incentives for health care providers to switch to EMRs
- Also includes \$ 2 billion for the development of EMR standards and best-practice guidelines
- In 2008, 38.4% (29.2% in 2006, 18.2% in 2001) of physicians reported using full or partial EMR systems in their office-based practices
- **What impact do these changes have on medical education?**

Challenges in Integrating Electronic Medical Records



- Negative impact on ability of trainees to synthesize clinical information
- Effect on the nature of faculty-resident/student interaction
- Copying...not processing

Opportunities in Integrating Electronic Medical Records



- Enhancement of history and physical exam skills
- Enhancement of doctor-patient relationship
- Enriching the learning environment and ultimately providing better quality patient care

ACE Survey Background



- A survey of 24 questions regarding EMR was sent to the membership of ACE organizations
- Clerkship directors/educators were asked to answer questions and comment about student use of EMR
- Answers are based on their own individual experience and observations

Demographics of Respondents



- 346 surveys completed
- Mean age 46 (30-73)
- 47% females, 53% males
- >85% clerkship director or assistant
- 129 schools:
 - 121 US schools
 - 1 Canadian
 - 2 International
 - 5 NOS

ACE Survey Responses



Jennifer Christner, M.D.
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Department of Pediatrics & Communicable Diseases
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General Use



- 74% of respondents use EMR
- 87% of students have direct access to inpatient EMR
 - 88% have own sign in
 - 4% use resident/faculty sign in
- Results were similar in regards to outpatient EMR

Students' Use of EMR

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What are students allowed to do?

- 31% View
- 40 % View/Write Notes
- 26% View/Write Notes/Enter Orders (to be cosigned)

Students' Use of EMR

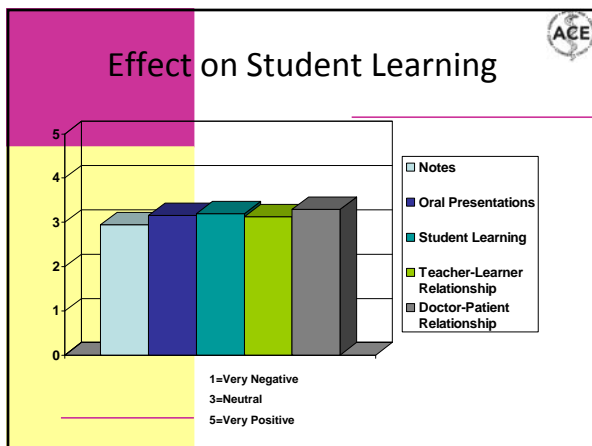
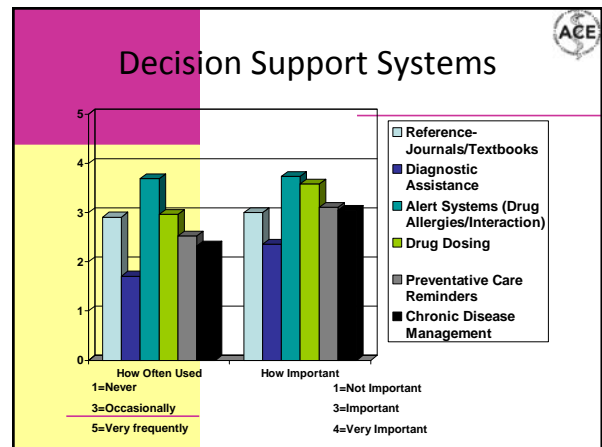
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- 92% require students to write notes
 - 76% are part of patient record
 - 24% separate from patient record
- 57% use student note to help document resident or attending note
- 24% have had issues w/copying of a provider's note to use as their own w/o proper attribution
- Use of template for notes
 - 24% have template for notes
 - 50% have template for both notes/orders
 - 26% don't allow students to use the templates
 - 9% have template for orders

Feedback on Students' Notes

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- How feedback is provided to students (many programs had >1 format)
 - 81% Verbal
 - 25% Written, by email
 - 18% Written, documented in patient paper chart
 - 11% Written eval
 - 5% Incorporated into a formal grading system

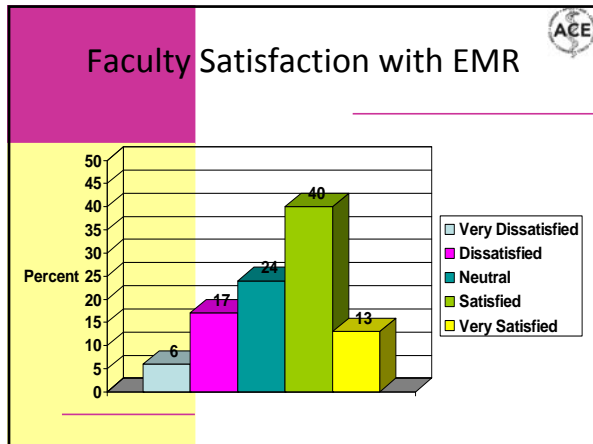


Students' Preference

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Do students prefer EMR over paper charts?

- 6% No
- 46% Not sure
- 11% Fine either way
- 36% Yes



ACE Survey Comments

Katherine Margo, MD
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- ## Use student notes to help document resident/attending note
- About half half - several said students only record FH, SH, ROS - some include PMH
 - Some say not supposed to do but do ("can they be used? Yes. Are they supposed to be used? No.")
 - Several said they take student name off and sign
 - Some say write that student is "scribed" note

Medicare Rules

February 3, 1997, HCFA's Chief Medical Officer was cited: "Medical student documentation for evaluation and management services, i.e., the review of systems (ROS), and past, family, and social history (PFSH), may be referred to and utilized by the teaching physician, but not the student's documentation relative to physical exam. The teaching physician must perform the physical exam, and document the key elements in order to bill a fee".

- ## Overall Satisfaction with EMR System
- Start up very painful
 - Different systems different sites difficult - often don't "talk" to each other
 - Takes a lot longer/cumbersome
 - Templates make patients all look same
 - Notes too long and repetitive
 - Great to have access to labs, imaging, consults
 - Lack of control over system by doctors
 - Takes away from doctor-patient interaction

- ## Advantages of EMR in student education
- Easier to read
 - Way of the future so they need to learn
 - Easy access to a lot of information (labs, consults etc) so more time to teach
 - Easier to review notes
 - Can review notes from anywhere (home etc)
 - Learn from medical decision tools, prompts
 - Helps student be organized, thorough
 - Easier to edit notes
 - Obvious how to organize note
 - Potential to teach use of registries

Disadvantages in student education

- Distances students from patient - Student relies on chart more than talking to patient
- Need to learn different systems at different sites
- Cost of laptops/log ins
- Accessibility of computers (in ED)
- Takes more time - student and faculty
- Legal issues of writing in chart
- Lack of teaching time because takes faculty a long time to document - long notes harder to review/edit

Disadvantages in student education (cont.)

- Templates stifle clinical reasoning
 - Don't think through relevant questions
 - Stifles thinking because cued to do things but don't understand why something done
 - Restricts flexibility - note and care focused on template not patient
 - Hard for faculty to know what student knows
- Cut and paste feature - don't get own information/propagates errors
- Too much information in the documentation - hard to prioritize
- Cumbersome
- Some systems students unable to enter orders

Institutional Experience

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Institutional Experience

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"Experience" evokes a surgical saying

Good judgment comes from experience....
"Experience" comes from previous bad judgment.

The Background/Context

- All ~ 150 medical students spend 2 months with 2 different outlying primary care practices in our rural state
- All medical students spend time (including half their medicine rotation) at the local VA
- All medical students also do clerkships at our University hospital

Sequence of Events



- VAMC adopted EMR (CPRS) in 1990's
- Students have written notes since in VA EMR
 - with faculty and/or resident co-signatures required
 - separate physician attestation or note also required.
- University hospital was audited in early 90's re Medicare fraud
 - No significant fraud found
 - However, cost-savings were anticipated if bill-ers didn't need to worry about who write notes
- University adopts an EMR that students can 'view only' by mid 1990's

What would you predict would result from the students' different EMR experiences in different settings?



Ensuing Practice



- Students continue to write notes at VA on their patients, with required co-signatures
- Students write orders at VA (which also require co-signature)
- Students write paper notes or dictate while on their primary care rotations, away from medical center
- **...Students feel they are just 'shadowing' at the University hospital**

Student Feedback



- VA is rated on the AAMC Graduation Questionnaire as a far better educational experience than the university
- VA ratings far above the national norms
- University hospital education ratings below national norms
- Trends persist for many years

Variable Resident Responses




- Signing in and asking students to write patient notes in EMR under the residents' name.
- Ignoring students since they are not allowed to chart or write orders.
- Telling students to go home early since they can't really follow patients or do anything useful.
- Residents, faculty and student groups at VA and university hospitals are the same
 - but different system gets different results from the same people

Initial Fix




- A student note is created
- However, the student notes were **not visible** to other practitioners unless they think to search the student tab
- The administration (risk management?) requires that faculty or residents sign the invisible student notes anyway
- Residents/faculty resent this and discourage note-writing




Recent Change

- New medical record system (Epic) rolled out ~ 5 months ago.
- Students once again allowed to write real, visible notes in the patients' record.
- (New system generates complaints because it is 'non-intuitive' and forces documentation of administrative material before orders are accepted.)
- No GQ/student outcome data yet.




Theoretical Early Impact

- Student impact of new EMR likely positive
 - Students may be again be valued for gathering information and drafting notes
 - (while their residents and faculty wrestle with order entry.)
- (Service versus education ratio affected for residents.)
- (Faculty morale probably lowered as well, at least temporarily.)




The Future Is...?

Academic medical centers sharing **experiences** should help protect our academic missions as EMR's develop.



Compliance and Ethics

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Compliance

Medicare Transmittal 811


- Released January 13, 2006
- Updates Transmittal 1720

Definition of a Student
*"An individual who participates in an accredited educational program (e.g., a medical school) that is not an approved GME program. A student is never considered to be an intern or a resident. **Medicare does not pay for any service furnished by a student**"*




Compliance

"Any contribution and participation of a student to the performance of a billable service (other than the review of systems and/or past family/social history which are not separately billable, but are taken as part of an E/M service) must be performed in the physical presence of a teaching physician or physical presence of a resident in a service meeting the requirements set forth in this section for teaching physician billing."




Compliance

“Students may document services in the medical record. However, the documentation of an E/M service by a student that may be referred to by the teaching physician is limited to documentation related to the review of systems and/or past family/social history. The teaching physician may not refer to a student’s documentation of physical exam findings or medical decision making in his or her personal note. If the medical student documents E/M services, the teaching physician must verify and redocument the history of present illness as well as perform and redocument the physical exam and medical decision making activities of the service.”




Compliance

- Students may gather the ROS and Past/Family/Social Hx
- Attending must document agreement with the student’s findings
- HPI, PE, and MDM may be documented by a student but must be **REDOCUMENTED** by attending



Procedures

- May not perform procedures independently
- May participate in procedures with a resident provided the major/minor rules are satisfied with regard to attending level supervision
 1. For minor surgical procedures (lasting less than five minutes), the teaching physician must be physically present during the entire service.
 2. For major procedures (lasting more than five minutes), the teaching physician must be physically present during the “key portion(s)” of the service and must also be closely available for assistance and guidance during the entire procedure.
- May also directly assist attending in the performance of procedures




Compliance & Ethical Issues

REDOCUMENTED = Cut and Paste?
 •? different than a scribe

May participate in procedures with a resident or assist an attending

VS

May not perform procedures independently



Perspective of a Medical Student

Shira Hannah Fischer
 MD/PhD Candidate
 University of Massachusetts Medical School
 Worcester, Massachusetts



Discussion & Questions
