



The Role of the Electronic Health Record in Teaching Quality and Safety

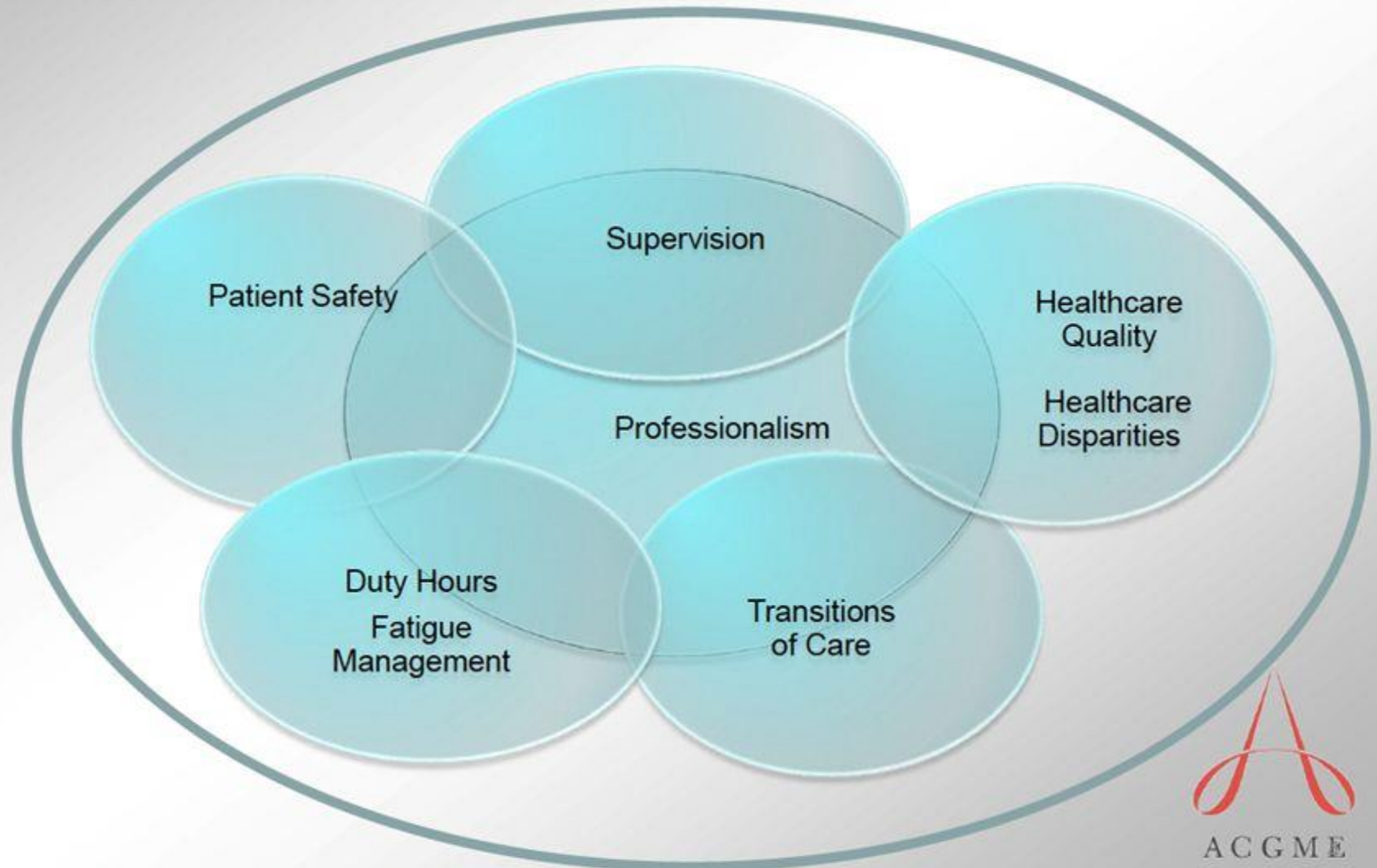
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What does this even mean?



- EHR data powers quality and safety initiatives
- Key role in trainee quality and safety projects / efforts
- Use of the EHR can drive higher quality and safer care
- Necessary to meet AGCME requirements?

CLER Focus Areas





“Experiential learning is essential to developing the ability to identify and institute sustainable systems-based changes to improve patient care.”

Clinical Learning Environment Review (CLER): CLER Pathways to Excellence. ACGME 2014.

Quality / Safety Uses of EHR Data



- Predictions of mortality, LOS, outcomes
- Health care disparities
- Registries / Population Health
- Regulatory requirements and reporting
- Reputational scores
- Drug safety surveillance
- Research

EHR Use in Teaching Quality / Safety

- Successful when part of a comprehensive strategy
 - Education, participation, action
- Increasingly larger role in trainee QI projects
- Helpful to achieve Level 5 of the Systems-based practice milestones

EHR Use in Trainee QI Projects

- Investigation of a potential issue
 - Medication Reconciliation
 - Safety of patient portal functionality
 - Imaging ordering practices
- Key to solutions
- Enables solution to be studied (metrics)
- Then implemented more widely

EHR Use in QI Projects: Solutions



- Preferred orders / Grouping of orders
- Checklists / Time Outs
- Note templates
- Alerts (addition and removal)
- Integrated / embedded education
- Integrated apps / tools
 - Messaging
 - Imaging

Clinical Decision Support (CDS)



- Use of the EHR to directly impact quality and safety
- Joint Commission core measures and other regulatory requirements
- Best practices
- Guidelines

Feeding: Swallow Evaluation: {SWALLOW EVAL:304650498}
Diet Status: {STATUS:304650491}
Analgesia: Pain Control: Pain Score: 0
Pain RX: {NEUROLOGY PAIN MEDLIST:304650528}
Sedation: Medications: {NEUROLOGY SEDATION MEDLIST:304650529}
Sedation Score: Sedation Level: 0 - Alert and calm
RASS goal: ***
Seizure Prophylaxis: {indicated/not indicated:304650529}
D/C Seizure prophylaxis: {Yes/No/NA:304012999}

Yes
No
Passed
Failed

Current facility-administered medications

Medication	Frequenc

Thromboembolism prophylaxis:

Current facility-administered medications

Medication	Frequenc
• dalteparin (FRAGMIN) 12,500 unit/0.5 mL injection 12,500 Units	DAILY
• heparin (porcine) 100 units/mL (HEP-LOCK) injection 500 Units	Q12H PRN

Head of Bed: Head of Bed: 30 Degrees

U Stress - Ulcer Prophylaxis: D/C Stress Ulcer Prophylaxis: {Yes/No/NA:304012999}

Current facility-administered medications

Medication	Frequenc
• lansoprazole (PREVACID) orally disintegrating tablet 30 mg	DAILY

Glucose Control: Insulin IV {yes no:314532}
Glucose Meter Reading Avg: 140.9 Min: 42 Max: 263

G Goals for the day:

MAP (Mean Arterial Pressure) Goal: *** Nicardipine: {CONTINUE/D/C:30413000}
Vent: Vent Mode: Pressure support Ventilation Day(s): 2
Wean Screen: Done: {WEAN SCREEN:304650500} Extubate: {NEURO Y/N:304650501}
Trach considered: {NEURO Y/N:304650501}
PEG (Percutaneous Endo Gastric) considered: {NEURO Y/N:304650501}
EVD (Extra Ventricular Drain): {NEURO YES/NO D/C:304650530} Wean: {Yes/No/NA:304012999}
Foley: {NEURO YES/NO D/C:304650530}
A-Line: {NEURO YES/NO D/C:304650530}
Central Line: {NEURO YES/NO D/C:304650530}

Electronic CDS: Impacts on Education

- Enhance or replace traditional methods?
- Are trainees really learning the content?
- Impact on critical thinking and clinical decision making
- Issues inherent in the tools themselves
 - Content, method of deployment, risk of fatigue
 - Overall effectiveness?
- Likely benefits and downsides

CDS Education Strategies



- Change how we think about critical thinking
 - “For physicians, critical thinking is far more complex than learning the mnemonics for orders and looking up drug-drug and allergy interactions” Donald L. Levick, MD
- Change how and what we teach
 - How to use the tools
 - In addition to the clinical content

Handoffs



- Critical quality issue
- ACGME Common Program Requirement
- Complex issue that requires complex solution
- And collaborative effort

EHR Role in the Handoff Process



- Source of data
 - Limitations of existing process
- Integrated solution
 - Standardized language (templates)
 - Accurate data
 - Improved access
- Tool itself becomes educational

OpenNotes: A novel approach to teaching quality and safety?



- National initiative to share providers' notes electronically
- Increase transparency, patient engagement
- More than 10 million patients have access

Trainee Perception of OpenNotes



- Improve patient safety
- Improve note quality
- Increase faculty feedback
- Patient feedback as a novel educational component of training
- New mechanism to assess communication and professionalism

Successful Incorporation of the EHR into Quality and Safety Education

- EHR education first!
 - Proper use must be formally taught
 - EHR training is not actually computer training
 - Deliberate part of curriculum, not as an afterthought
- Make other necessary adjustments to the curriculum

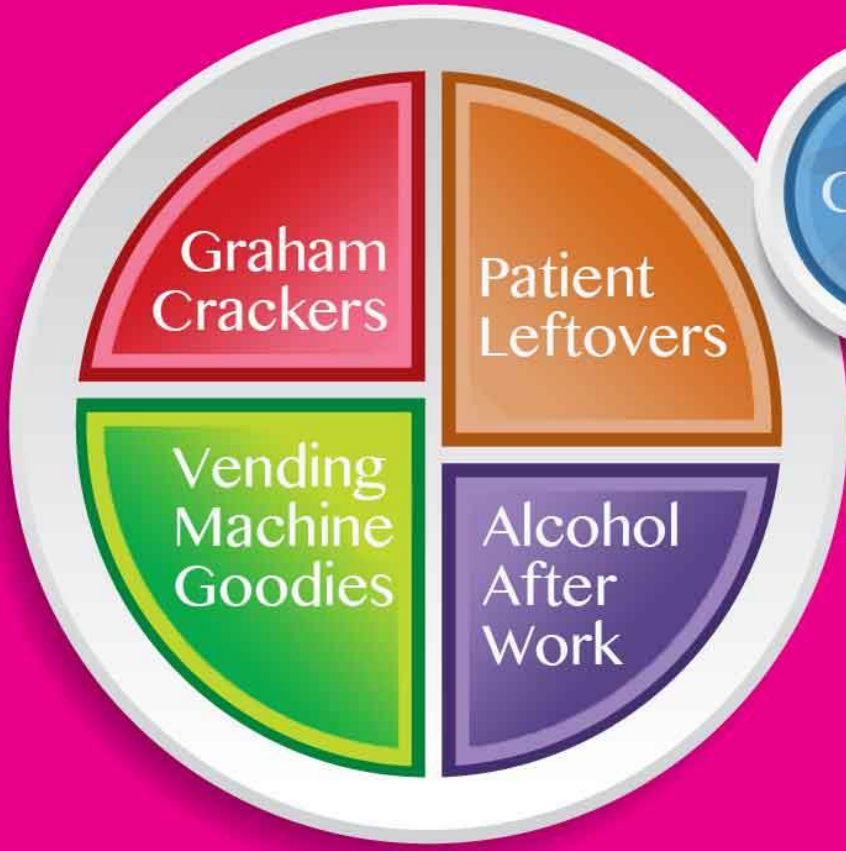
Successful Incorporation of the EHR into Quality and Safety Education



- Not effective in isolation
- Full participation in the QI process
 - Resident AND EHR team representation
 - At all critical meetings
 - For all aspects of the process
- Can provide value for every step

Future Approaches

- Formally train residents in advanced EHR functionality
 - Data queries
 - Report building
- Dedicated, protected time
- Advanced training in pop health concepts
- No longer reliant on others for data



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