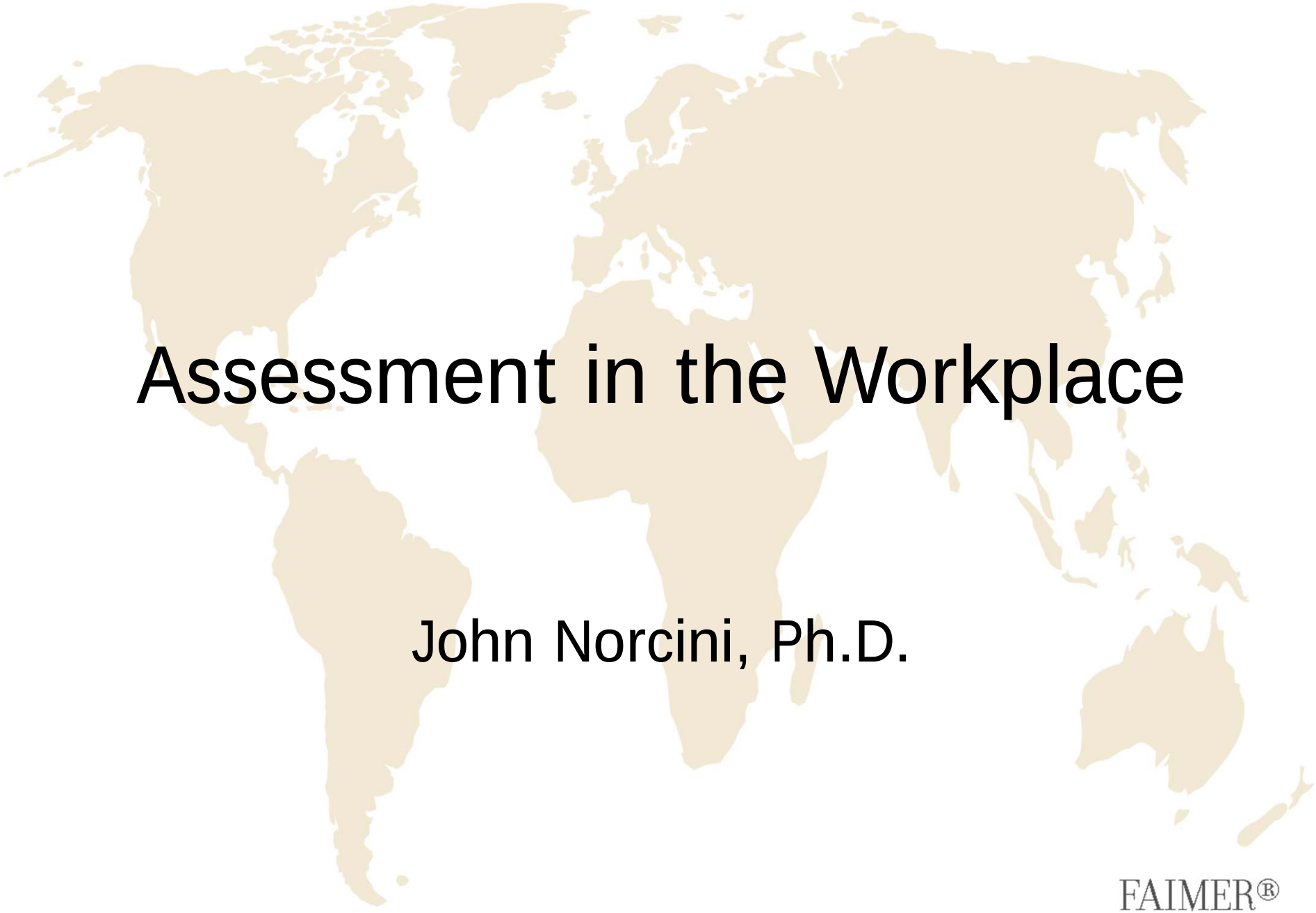

Assessment in the Workplace

John Norcini, Ph.D.

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The Past

- Assessment was based on a few methods
  - Essays, oral exams
- Methods limited
  - Competencies
  - Validity/realism
  - Reliability
  - Educational effect
  - Feasibility

Past

"That part of eternity with some small fraction of which we have a slight and regrettable acquaintance."

A Bierce

The Devil's Dictionary

Past to Present

- Progress
  - Proliferation of methods
  - Advances
    - Psychometrics
    - Technology
- Summative assessment is done well
  - Knowledge
  - Clinical skills

Present

"That part of eternity dividing the domain of disappointment from the realm of hope."

A Bierce

The Devil's Dictionary

Present to Future

- Summative assessment will remain important
- Formative assessment in the workplace will grow
  - Ongoing and designed around feedback
  - For both clinical training and practice

Future

"That period of time in which our affairs prosper, our friends are true, and our happiness is assured."

A Bierce

The Devil's Dictionary

Overview

- Workplace assessment during clinical training
  - Why is it important?
  - Methods used in the Foundation Programme
    - Advantages and challenges
- Workplace assessment during practice
  - Why is it important?
  - What role does it play?
    - Patient outcomes and process of care data in the context of CME

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Why Workplace Assessment: Training

- Studies document clinical skills deficiencies
  - Ascultatory skills in trainees (Mangione, 1997)
  - History-taking/preventive health screening among primary care doctors (Ramsey, 1999)
  - Missed physical findings among residents (Reilly, 2003)
  - Errors during procedures (Tang et al., 2005)
- Detection through assessment is limited

Why Workplace Assessment: Training

- Traditional workplace assessment
  - One examiner observes a trainee interact with an unfamiliar (in)patient
  - Trainee does a complete Hx/PE, presents findings, management plan, written record
  - Examiner rates along several dimensions
  - Takes about two hours
  - 82% of trainees undergo a CEX in their first year

Why Workplace Assessment: Training

- Generalization is limited because the trainee is evaluated with only one patient
  - Physician performance varies considerably from patient to patient

"One third of the mice used in the experiment were cured by the test drug; One third of the test population were unaffected by the drug and remained in a moribund condition; The third mouse got away."

Erwin Neter

Why Workplace Assessment: Training

- Generalization is limited because the trainee is evaluated by only one examiner
  - Examiners differ in stringency

"You get 15 Democrats in a room and you get 20 opinions."

Senator Patrick Leahy

Why Workplace Assessment: Training

- Generalization is limited because most real physician-patient encounters are short and focused
  - The task is artificial

"Reality is merely an illusion, albeit a very persistent one."

Albert Einstein

Why Workplace Assessment: Training

- There is a lack of feedback and formative assessment during clinical training
  - Medical students
    - Structured observation done for only 7-23% of students (Kassebaum & Eaglen, 1999)
    - Only 28% of IM clerkships include formative assessment strategy (Kogan & Hauer, 2006)
  - Postgraduate trainees
    - 82% were observed only once (Day et al., 1990)
    - 80% observed never or infrequently (Isaacson et al., 1995)

Why Workplace Assessment: Training

- Feedback is critical to learning
  - General education (Hattie, 1999)
    - Meta-analysis of 12 meta-analyses
    - Feedback is among the largest influences on achievement (ES=.79)
  - Postgraduate trainees and practicing doctors
    - Feedback alone effective is effective in 74% of studies (BEME: Veloski et al. 2006)
    - Small to moderate effects (Cochrane: Jamtvedt et al., 2006)

Why Workplace Assessment: Training

	Massed Training	Spaced Training
Sessions	Few, Intense	Many, Spread out
Speed		
Confidence		
Satisfaction		
Retention		
Performance		

From K. Eva

Why Workplace Assessment: Training

	Massed Training	Spaced Training
Sessions	Few, Intense	Many, Spread out
Speed	Faster	
Confidence	Higher	
Satisfaction	Greater	
Retention		
Performance		

From K. Eva

Why Workplace Assessment: Training

	Massed Training	Spaced Training
Sessions	Few, Intense	Many, Spread out
Speed	Faster	
Confidence	Higher	
Satisfaction	Greater	
Retention		Longer
Performance		Better

From K. Eva

Why Workplace Assessment: Training

- Retrieval of information or a performance enhances learning
  - Students read a passage (Roediger & Karpicke, *Psych Science*, 2006)
    - Group 1 took three tests on the passage
    - Group 2 re-read the passage carefully three times
  - On a test one week later, Group 1 did better
- Students read science text (Karpicke & Blunt, *Science*, 2011)

Why Workplace Assessment: Training

- Ongoing workplace assessment designed around feedback is the future
  - Responds to the current poor assessment and lack of feedback during training
  - Is consistent with the research
    - Feedback is critical to learning
    - Periodic feedback is more effective than massed feedback
    - Assessment enhances learning

Workplace Assessment in Training: Foundation Programme

- Best package of methods
  - Encounter-based
    - Case-Based Discussion (CbD)
    - Direct observation of procedural skills (DOPS)
    - Clinical Evaluation Exercise (Mini-CEX)
  - Global
    - Peer Assessment (Mini-PAT)
- Refined versions of traditional measures
  - Stimulus with which the trainee interacts
    - Patients, records
  - Observer/examiner
    - Faculty
  - Dimensions of the encounter that are judged
    - Cognitive, technical

Case-based Discussion

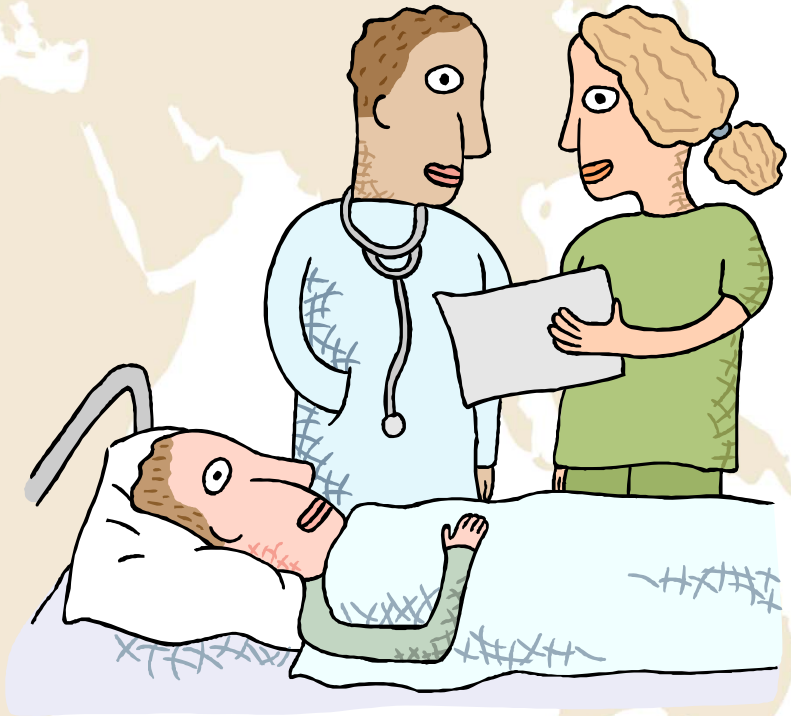
- Process
  - List of patient problems
  - Trainee picks 2 case records
    - Assessor selects one
  - Discussion centered on the trainee's notes
  - Assessor rates Diag, Treat, Planning, Prof, etc.
- Takes 15-20 minutes
- 6 assessments/year

DOPs

- Process
  - List of procedures
  - Trainee picks a patient
  - Assessor observes the encounter
    - Procedure
  - Assessor rates Prep, Sedation, Asepsis, Technical skill, etc. and provides feedback
- Takes 15-20 minutes
- 6 assessments/year

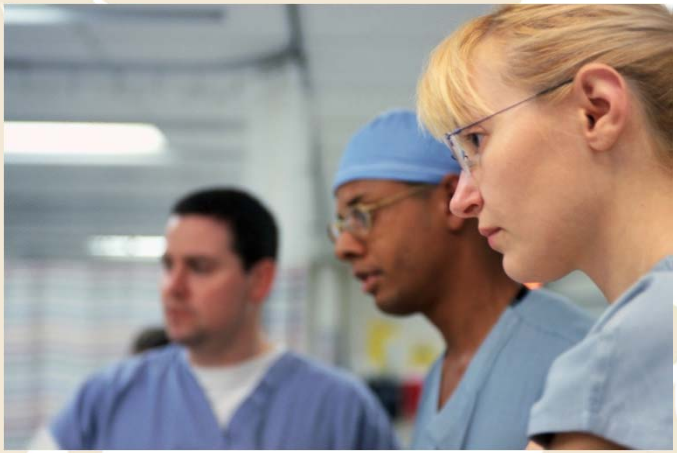
Mini-CEX

- Process
  - List of patient problems
  - Trainee picks a patient
  - Assessor observes the encounter
    - Focused clinical task
  - Assessor rates Hx, PE, Comm, CJ, Prof, Org/Eff and provides feedback
- Takes 15-20 minutes
- 6 assessments/year



Peer Assessment

- Process
  - Trainee nominates 8 assessors and self-rates
  - Web-based (now)
    - Assesses clinical and generic skills
    - Collated centrally
  - Trainee given self-ratings, assessor ratings, national mean ratings, and comments
- 2 assessments per year



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Advantages of the Encounter-based Methods

- Pose a broad range of patient problems
- Support the assessment of integrated skills
- Support clinical education
- Feasible in small work-based training programs

"There is only one argument for doing something; the rest are arguments for doing nothing."

FM Cornford

Challenges of Encounter-based Methods

- Not many trainees will be considered unsatisfactory
  - There remains a need for summative assessment

"Everywhere I go I'm asked if I think the university stifles writers. My opinion is that they don't stifle enough of them."

F O'Connor

Challenges of Encounter-based Methods

- Trainees have some control over who examines them and indirectly over the content of the assessment
  - The assessment might be biased in their favor

"It is hard to believe that a man is telling the truth when you know that you would lie if you were in his place."

HL Mencken

Challenges of Encounter-based Methods

- Standards across programs will not be equivalent
  - Results will not be useful for national ranking of trainees

"The power of accurate observation is frequently called cynicism by those who don't have it."

GB Shaw

Challenges of Encounter-based Methods

- A large scale faculty development effort is needed
  - Good model (Holmboe, Hawkins, Huot, 2004)
    - Behavioral observation
    - Performance dimension training
    - Frame of reference training
    - Practice

"[A]s you know, these are open forums, you're able to come and listen to what I have to say."

GW Bush

Advantages of Peer Assessment

- Supported by considerable research
- Has positive educational effects
  - Supports quality improvement tools
- Feasible
- Applicable across the continuum
  - Medical school and throughout a career

Challenges of Peer Assessment

- Assessor
  - Need to have observed the doctor
  - Differ in stringency and perspective
- Context
  - Clinical settings differ in demands, stresses, etc.

"Friends may come and go, but enemies accumulate."

T Jones

Challenges of Peer Assessment

- Relationships
  - Competition, friendship may influence assessments
- Stakes
  - In high stakes settings, assessments might be inflated
- Anonymity is important

"Now, now my good man, this is no time for making enemies."

Voltaire on his deathbed in response to a priest asking that he renounce Satan

Overview

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  - What role does it play?
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Why Workplace Assessment: Practice

- There is a good evidence that the performance of doctors declines with time since medical school
  - Systematic review of the literature by Choudhry, Fletcher, Soumerai (*Ann Int Med*, 2005)
    - MEDLINE search of all papers from 1966 to 2004 plus references in the identified papers
    - Found 62 studies that were related to the topic

Why Workplace Assessment: Practice

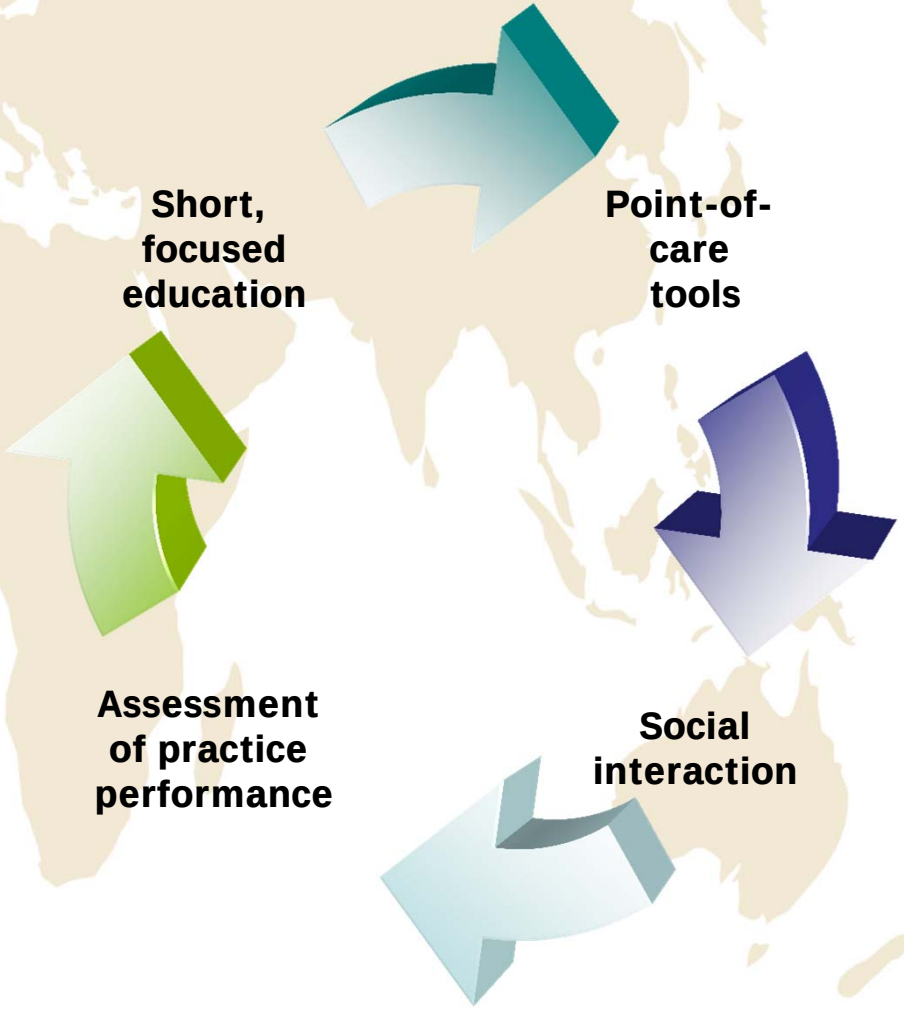
- Knowledge studies (N=12)
  - All reported a decline in knowledge with age
- Adherence to standards for diagnosis, screening, prevention (N=24)
  - 15 show physicians in practice longer adhere less to standards
- Adherence to standards of appropriate therapy (N=19)
  - 14 found a partially or consistently negative association
- Patient outcomes (N=7)
  - 4 found a partially or consistently negative association

Why Workplace Assessment: Practice

- Observational study
  - 244,151 CHF/AMI hospitalizations for 4 years in 184 institutions in PA
    - Outcomes
      - In-hospital mortality and length of stay
    - Covariates
      - Probability of death on admission for each patient
      - Characteristics of physicians and institutions
- Results
  - Increasing physician age is associated with increased patient mortality and length of stay
  - Relationships persist even after taking account of severity of illness, level of specialization, Board certification, institutional and physician volume

Role of Workplace Assessment In Practice

- CME is essential
  - Research synthesis (Robertson et al., AHRQ, Cochrane)
  - CME improves
    - Attitudes, knowledge, skills, behavior and patient outcomes
  - Effective CME
    - Ongoing, active, interactive, contextually relevant, multiple methods



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Assessment of Practice Performance

- Change only occurs if the doctor knows the nature of his/her practice
  - Aggregate data by clinical problem
  - Keep statistics on patient problems, diagnostics, and therapeutics
  - Track process of care and patient outcomes
- Self-assessment is not accurate
  - External sources of information are needed

"It is only by getting your cases grouped...that you can make any real progress with your post-collegiate education"

W. Osler

Assessment of Practice Performance: Patient Outcomes

- Patient outcomes are the most important indicator of practice performance
  - Mortality and Morbidity
  - Series of newer outcomes
    - Patient satisfaction
    - Functional status
    - Cost effectiveness
  - Intermediate outcomes (e.g., HbA1c and lipid levels for diabetics)

Outcomes: Advantages

- Public
  - Measure of accountability
- Patients and the health care system
  - Offers a basis for deciding among doctors dependent on quality and efficiency
- Doctors
  - Offers assessment tailored to their unique practice
  - Based on real work performance

Outcomes: Challenges

- Attribution
  - Good assessment requires that the doctor be solely responsible for the patient's outcomes
    - Patient care is increasingly provided in systems by teams supported with guidelines
- Case mix and patient complexity
  - Good assessment requires that all doctors face the same challenge
    - There is variability in the frequency and type of patient problems encountered
    - Patients with the same condition vary in severity, comorbidities, compliance, etc.

Outcomes: Challenges

- Numbers
  - Reliable assessment requires that many patients be sampled
  - Only common conditions can be included in assessment

"The problem with the French is that they don't have a word for entrepreneur"

GW Bush

Assessment of Practice Performance: Process of Care

- Process of care is another important indicator of practice performance
  - General processes such as
    - Screening and preventative services
    - Diagnosis and management
    - Prescribing
    - Counseling
  - Condition-specific processes
    - HbA1c monitoring and foot exams for diabetics

Process: Advantages

- More directly in physician control
  - Problems of attribution are reduced
- Less directly influenced by complexity
  - HbA1c should be monitored in all diabetics
- For certain processes, case mix is not a problem
  - Most patients need immunizations

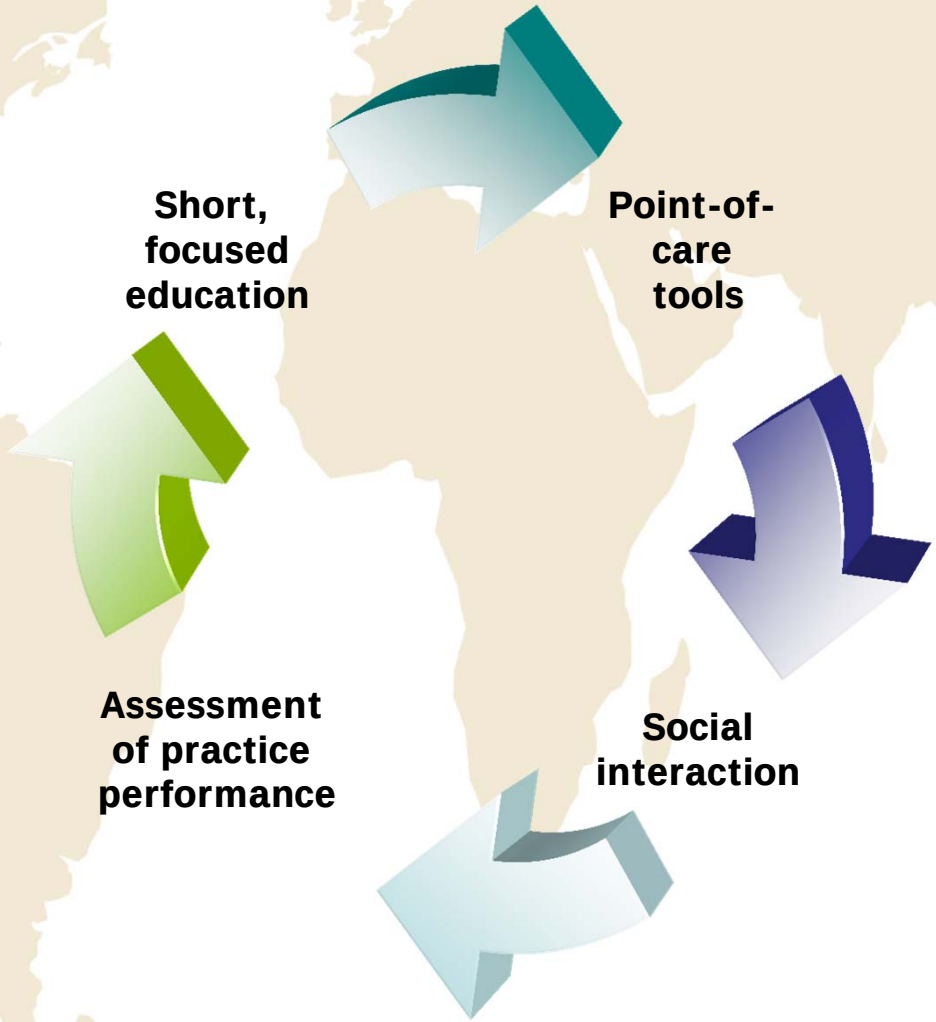
Process: Challenges

- Doing the right things does not ensure a good outcome
- Complexity and case mix still have an effect
- A sizeable number of a doctor's patients need to be sampled

"In Paris they simply stared when I spoke to them in French; I never did succeed in making those idiots understand their language."

M Twain

Workplace Assessment: Practice



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Short Focused Education

- Education should be short and focused on relevant aspects of practice
  - Multiple methods including interactive and didactic sessions
  - Opportunity for practice
  - Periodic

"Some people talk in their sleep. Lecturers talk while other people sleep."

Albert Camus

Point-of-Care Tools

- Learning best occurs in the context of patient care
  - Patient-specific point-of-care tools
    - Evidence-based, short focused answers to clinical questions
    - Reminder systems to avoid errors of omission

"Be careful about reading health books. You may die of a misprint."

Mark Twain

Social Interactions

- Physician leadership
  - Create a non-threatening environment
  - Encourage information exchange
  - Align incentives properly
  - Partner with family and community
- Peer interactions
  - Non-threatening discussion of practice data

"Leadership is the art of getting someone else to do something you want done because he wants to do it."

Dwight Eisenhower

Summary

- Workplace assessment
  - Applicable to training and practice
  - Aimed at current deficiencies in assessment
  - Integral to education
  - Faces a variety of challenges

"Don't let it end like this. Tell them I said something."

last words of P Villa