Medical Education and Patient Outcomes: Where Are We Going?

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Our Discussants

- Panel Members
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  - Gary Gaddis, MD, PhD*
  - (Carol Thrush, EdD**)
- Originally Presented (in longer form):
  - AAMC 2006, Seattle

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Glick, in 2005, stated:

"Choosing …[learning objectives and teaching content] of high priority is essential if education is to have maximum impact on quality of care…

These priorities should not derive from tradition and opinion, but should be informed by patient outcomes."

Glick TH, Viewpoint: Evidence-Guided Education: Patients' Outcome Data Should Influence Our Teaching Priorities. Acad Med 2005; 80: 147-151.

Overview

- Medical educators have been urged to link medical education and patient outcomes.
- Limited examples of such linkages exist. Some of these include:
  - CME
    - e.g. Fridriksson et al. *Acta Neurol Scand*. 2002:103:234-42.
  - GME
    - e.g. Battles & Shea. *Acad Med.* 2001:76:125-33.
  - UME
    - e.g. Gould et al. *Acad Med*. 2002;77:1011-8.

Overview (continued)

- It might seem simplest to ask, “What patient outcomes do our institutions permit us to measure currently?”
- Instead, we will suggest that we ask…

Overview (continued)

- "What *should* we measure & why?"

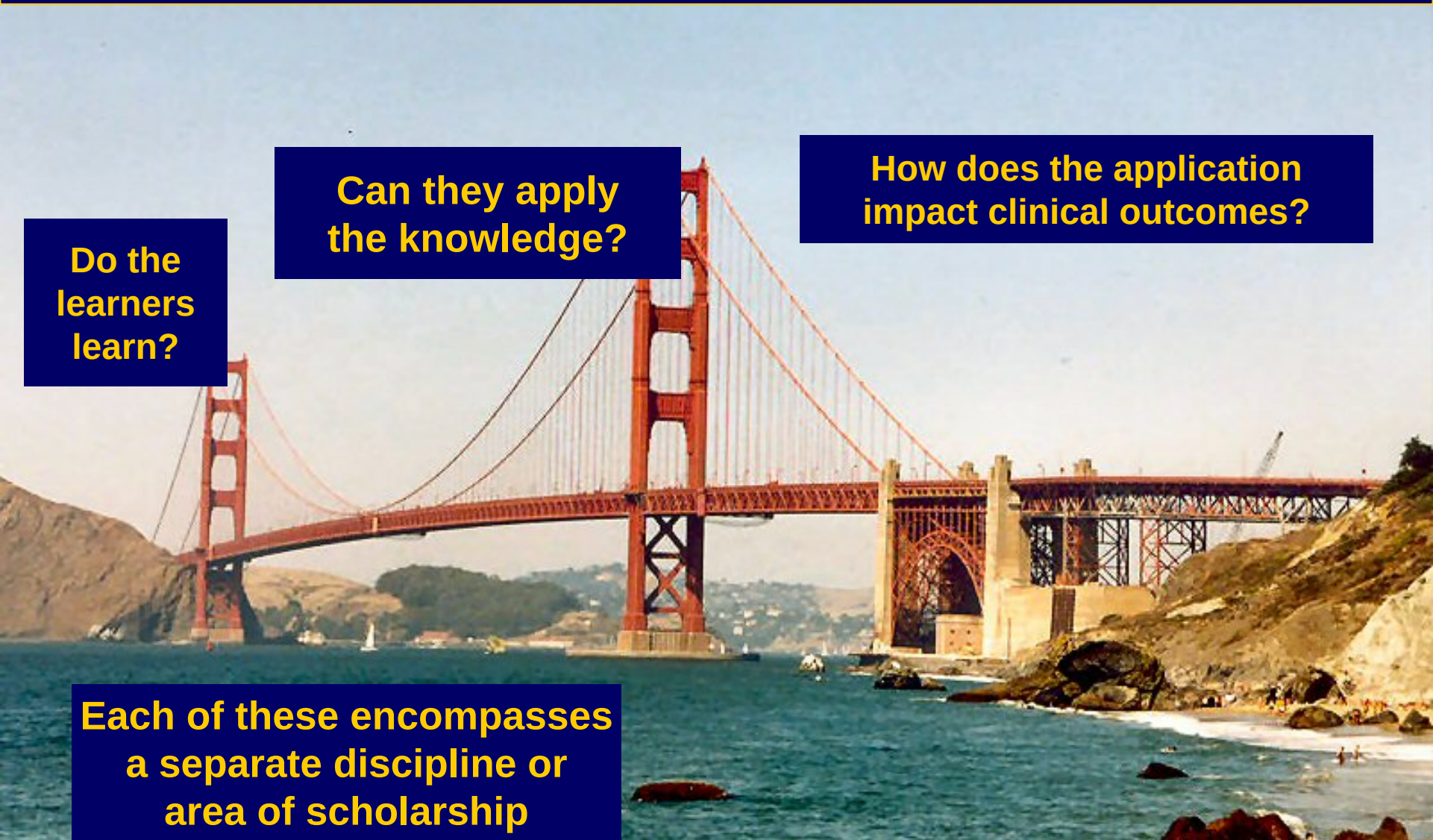
AND

- "How can we alter our current systems to permit us to measure those outcomes?"

Toward that end:

- To measure the clinical impact of outcomes, we need to articulate necessary steps along the way.
- And, we need to articulate the feedback mechanisms to make adjustments to our processes as they are developed and refined.
- Perhaps, more simply than Mitchell and with more detail than Chen

So, what are the steps?



Do the learners learn?

Can they apply the knowledge?

How does the application impact clinical outcomes?

Each of these encompasses a separate discipline or area of scholarship

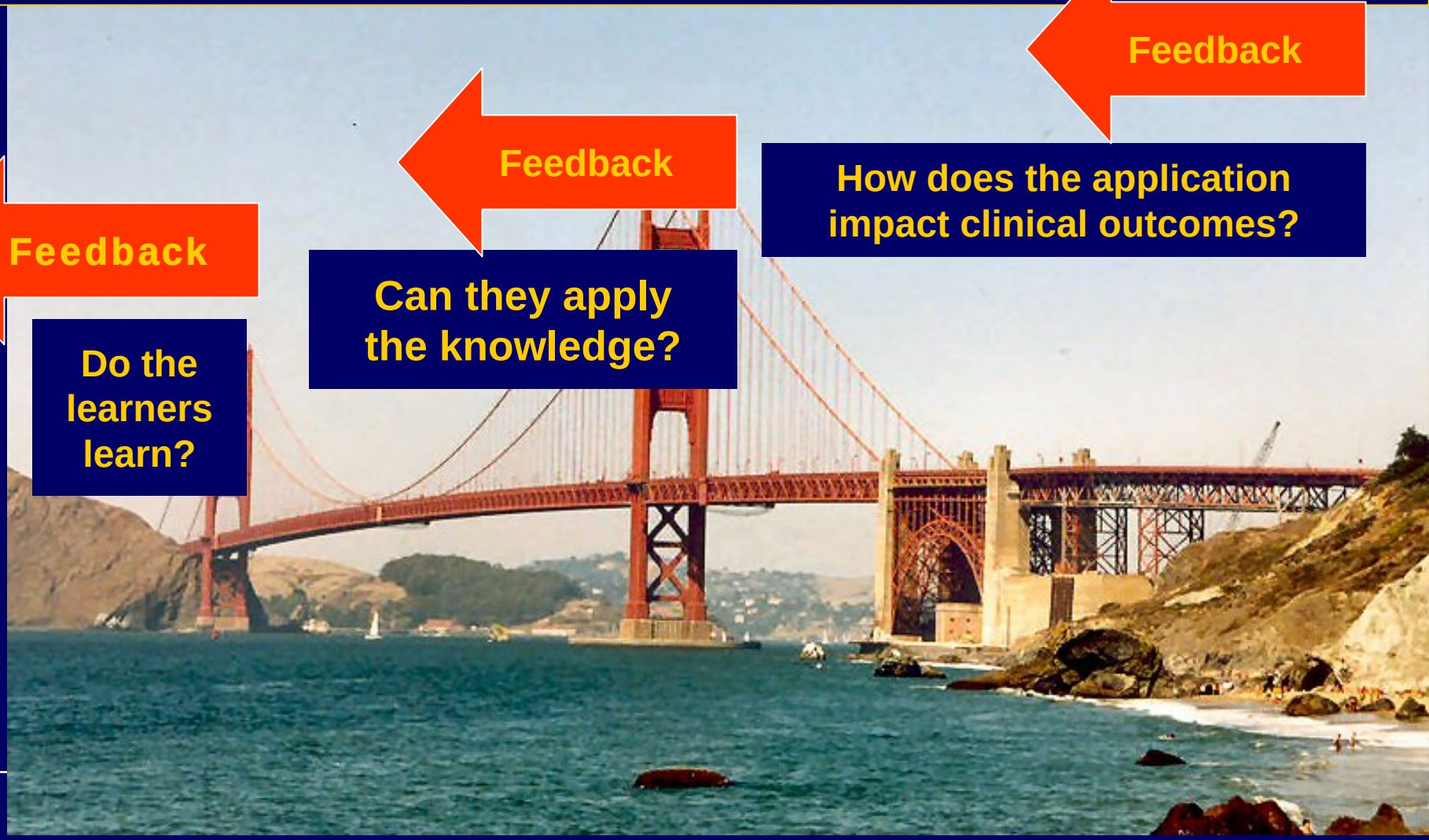
The path runs two ways!

This facilitates feedback!

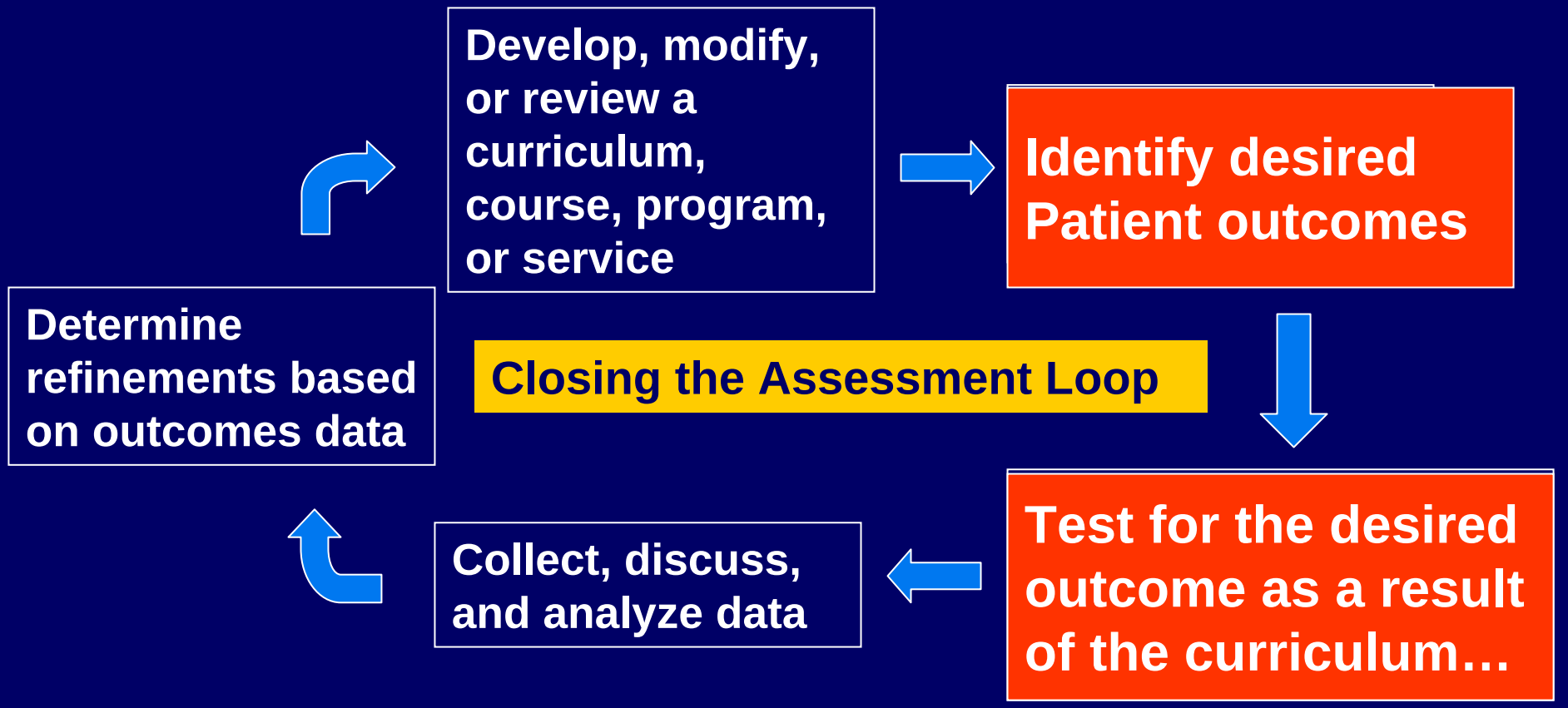
To show the timeliness of this:

- Abstract #3: (Brokaw et al.): “Training medical students in smoking cessation techniques: Improved knowledge does predict improved skill”
- Bottom line:
  - The learners DID learn the facts and improved their test scores
  - The learners exposed did not apply their skills any more effectively

What is missing?
How can we “close the loop”?



Leading to a process somewhat like this (as articulated by others) for the learning and application issues:



http://online.bakersfieldcollege.edu/courseassessment/Section_2_Background/Section2_5Accreditation_files/image001.gif

Linking Education with Outcomes Across the Continuum

- Model building through time – a strategic approach
- Outcomes – does one predict the next?
- A concrete example

An effort with patients:

- Gary Salzman, a pulmonologist at UMKC, has developed a team to educate asthma patients to better manage their disease.
- His patients' inpatient admissions and days have decreased by approximately 30%.
- His patients' ED visits have declined by a similar amount.
- The point is that an educational intervention with patients serves as a bridge between a group upon which an intervention was done, and a measurable outcome.
- In this case, the learners are patients rather than clinicians.

We have some bridges to build!

Discussion Questions

- Dream
  - What outcomes would you like to measure? How?
- Get real
  - What factors prevent or complicate your desired outcome measures?
- Get serious
  - How can you overcome the barriers?

Recent relevant talk:

- Medical Education to Patient Outcomes- Bridging the Divide
  - Carol Hodgson PhD; Judy Shea PhD
  - AAMC 2005

From Hodgson and Shea's talk

- Educational Interventions (and their impact on patient outcomes and patient health:
  - Medical Students
  - Residents
  - Practicing Physicians (CME)

Least Impact

Most Impact

What outcomes would you like to measure? How?

Ideas: What to measure, and how?

- Relate med ed to outcomes: Was the symptom, or the disease, treated?
  - Practicing physicians' behavior, tracked back to medical school of origin, and performance while as a student
  - Impact of student achievement level and the focus of their efforts

More ideas

- Computer as a reminder or prompt to improve quality or safety (or both) of patient care….examples include:
  - Enhance proper preventative care
  - Decrease drug-drug interaction problems
  - Diabetic foot exams and patient preparation

More ideas

- Look at resident electives: Do they help make the resident a better clinician?
  - We don't track this….can we?
  - Does sequence of exposure matter?
- Focus more on "High yield" or "High impact" diseases which are common (Examples: Obesity, addiction)…what can be done to better effect caregiver change?

More ideas

- The “unannounced” oversight of doctors-in-training….Observe how learners perform when they don’t suspect they are being watched.
  - Where is the role of simulation appropriate, and where might simulation be inadequate.
- Are student contributions under-noted or under-measured?
  - A potential role for more QUALITATIVE methods of assessment?

More ideas

- How do we get past the time gap between curricular content delivered to students, and an outcome which can be impacted in the future (as exemplified by teaching re suicidality and eventual suicide rate in the community)
- Does competency-based assessment make “a difference” in patient outcomes? The meaning of “difference” can be more specifically assigned depending on the outcome of interest

More ideas

- Impacts of proper communication by good discharge instructions, upon patient outcomes.
- What is the “right” number of patient exposures to “matter”?
- Impact of “by-physician” unexpected repeat visit rates until desired outcome.
- Use of standardized patients to evaluate impact of discontinuous patient care episodes, rather than the greater contemperaneous continuity that is present with simulated patient encounters. (Eg in patient simulated encounters, time gets compressed, compared to clinical reality).

More ideas

- Soliciting PARENTAL patient satisfaction input for student efforts

What factors prevent or complicate your desired outcome measures?

How can you overcome the barriers?

Ideas: How to overcome the barriers

- Using the “bridge” analogy, it must be kept in mind that educators must be mindful of ascertaining that each step along the way has been met.
- We DON’T DESIGN EVALUATIONS WITH PATIENT OUTCOMES IN MIND
  - Contrast to Canadian experience

More ideas:

- Can we somehow gain access to proprietary data which would be useful, such as prescribing data generated by big pharma?
- Access to NPDB would be helpful for some types of research but is not available now to medical researchers nor is it available for medical research purposes…its use is limited to credentialing

More ideas

- Patient safety initiatives may help compel more research congruent with the goals of this session.
- Create useful data bases, such as hospital privileges available to each physician, or other examples?
- FSLB has offered to let deans know of actions against graduates of individual schools

More ideas

- Improved data is needed, data existing has significant numbers of anomalies, but the number of good data bases with good data may be unavailable or inaccurate.
- Physician-specific quality data probably has a role, maybe we should be asking for it.
- DATABASES….make them accessible to us

Next steps:

- Improve access to the data
- IOM qualities of pt care, matched to competencies matrix?
- Lobby legislators for access to useful existing data; develop a “Plan of attack” and enlist stakeholders as allies first, then go forward. Current law holds data hostage
  - Work via AMA Section on Medical Schools to try to get a resolution toward this introduced and passed by AMA House of Delegates…priorities of the AMA may get added useful attention of lobbyists, etc

Nest steps

- Medical learners' portfolios…why not start an electronic portfolio as students, add as residents, add more as practitioners, and use this data in ways intended to link to outcomes.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"Writing a FINER research question" (After Hodgson and Shea's 2005 presentation at AAMC)

- **F**easible, **I**nteresting, **N**ovel, **E**thical, and **R**elevant
- Consider:
  - Patient characteristics
  - Trainee/provider characteristics
  - Educational intervention
  - Patient intervention
  - Design
  - Risk adjustments/controls
  - Process Measure outcomes
  - Patient Outcomes

A contrarian view:

- Medical education should NOT emulate health services research because:
- The target of medical education is LEARNERS, not patients
- Impacts on patients are often diluted and distant
- Changes in educational methods often occur before a question becomes fully studied

Significant Challenges:

- Education is “messy”
- Educational interventions might have no effect on learners
- New research designs may be needed, there is little likelihood of doing RCT
- What if we discover that educational processes DON’T MATTER?

Notes from presentation at Seattle:

- "Serious" discussion points:
  - Problems/barriers exist and need to be overcome:
    - "Silo problem": Compartmentalization of patient care into different departments is reality; there is a need to "cross silos" to get to outcomes for most diseases
    - Data access issue: Where can we go to get the data that we need?
    - Student-specific issue: Do students ever impact outcomes of interest?

Notes from presentation at Seattle:

- "Serious" discussion points:
  - Problems/barriers to be overcome (continued):
    - What clinical interventions actually work (and are likely to NOT be found of no value in the near term)? (Ex: Women's health initiative; estrogens and progestins)
    - Variable research methodologies used
    - Being able to recognize the high number of confounding variables, both planned-for, and unplanned.

Notes from presentation at Seattle:

- “Serious” discussion points:
  - Problems/barriers to be overcome (continued):
    - That which is unrecognized

Notes from presentation at Seattle:

- Solutions posited to overcome these barriers:
  - Identify the outcome variable PRECISELY as possible
  - Treat the educational achievement needed before implementation as the independent variable and the clinical outcome as the dependent variable:
    - This is problematic because educational achievement is also a dependent variable

Notes from presentation at Seattle:

- Solutions posited to overcome these barriers:
  - In other words, know the target as precisely as possible
  - Realize that the target can change locations, (but that some targets don’t change, which may be surrogate outcomes (simulated patients for example)

Notes from presentation at Seattle:

- Solutions posited to overcome these barriers:
  - Focus on that which is do-able
  - Consider qualitative measures as an important tool to the “toolbox”
  - Data must be accessible; perhaps Canadian data is more suited to use for study (or other national or provincial health systems’ data)

Notes from presentation at Seattle:

- Solutions posited to overcome these barriers:
  - Multi-center studies may show greater generalizability and be more powerful
  - A data “catch-phrase” similar to the catch phrase “translational research” would be useful to create a widely understood term to capture the meaning of that discussed in this session.
  - Keep in mind that medical care is a TEAM EFFORT and inputs from all team members must be considered

Notes from presentation at Seattle:

- The most useful discussion about manageable and practical solutions posited to overcome these barriers:
  - Try not to aim at a “moving target” as exemplified by the example of estrogens and progestins in the Women’s Health Initiative
  - Try for easily accessed data, as the Canadian provinces have.
  - Look at teamwork