MAKING IT COUNT TWICE: HOW TO GET CURRICULAR WORK PUBLISHED

27TH Annual Meeting
Society of General Internal Medicine
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Schedule:

10:30-10:35:	Introduction (DK)
10:35-10:50:	Presentations:
	How to Plan Curricula Work so that It Is Likely to be Publishable (MG)
	How to Prepare Curricular Manuscripts for Submission (DK)
	How to Respond to Editors' Letters / Reviewers' Comments (WB)
10:50-11:20:	Small Group Discussions
11:20-11:50:	Panel Discussion
11:50-11:55:	Closing Comments (WB)
11:55-12:00:	Evaluation of Workshop

TABLE OF CONTENTS FOR HANDOUT

HOW TO PLAN CURRICULAR WORK SO THAT IT IS LIKELY TO BE PUBLISHABLE

Michael L Green, MD, MSC, David E. Kern, MD, MPH

ELEVEN TIPS

1. Start Planning for Publishing at the Beginning of the Curriculum Development Process
2. Attend to Local "Contextual Variables" with a Needs Analysis
3. Focus Your Curriculum with Learning Objectives
4. Develop Instructional Strategies That Are Suited to the Type of Learning Objective, That Are Evidence-Based (if possible), and That Employ Multiple Methods
5. Pay Attention to Feasibility and Sustainability
6. Decide on Level(s) of Evaluation for Your Curriculum
7. Don't Apologize for Curriculum Descriptions
8. Select Outcome Measures that Correspond to Learning Objectives, Have Established Validity and Reliability, and Can Be Feasibly Collected by You or, Preferably Someone Else
9. Be Creative in Conducting the Evaluation, Especially If You Don't Have a Million Dollars
10. Consider the "Educational Significance" of Effects Attributable to the Curriculum
11. Decide What Aspect of Your Curriculum-Related Work to Submit for Publication in the Context of Knowing What Makes Curriculum-Related Work Publishable

ELEVEN TIPS ELABORATED (with quotes from Yogi Berra)

DEVELOPMENT AND IMPLEMENTATION TIPS (TIPS 1-5)

1. Start Planning for Publishing at the Beginning of the Curriculum Development Process

("I knew I was going to take the wrong train, so I left early.")

This is important to assure that you acquire sufficient resources and collect the required data. Considering "publication requirements" once the curriculum is up and running usually makes for a losing proposition. However, you need not feel mercenary in adopting this mind set. This process will likely lead to a better product and thus a better experience for your trainees. It forces you to 1) be patient, focused, thoughtful, careful, and systematic in your approach, 2) explicitly declare your objectives and develop your instructional and evaluation strategies to meet them, 3) collect information that will help you continuously refine your curriculum, and 4) collect information that will help you justify your activities and seek support from chair or administrators.

Phases of curriculum development (Kern, et al, 1998)

a) Problem ID and general needs assessment
b) Needs assessment of targeted learners
c) Goals and specific measurable learning objectives

d) Instructional strategies
e) Implementation
f) Evaluation and feedback

To increase the quality and publishability of your work, seek collaborators and mentors / expertise, if not in your division or department, in other departments or the medical school's office of education.

Consider possible funding sources (see Appendix A).

Determine whether Institutional Review Board (IRB) approval is required, and begin the process early. Check instructions to see if IRB approval is required *before* submitting the grant proposal.

2. Attend to Local "Contextual Variables" with a Needs Analysis

("I want to thank everyone for making this night necessary." On Yogi Berra Appreciation Day in St. Louis in 1947)

a) **Literature review** – Review existing curricula and related medical education literature. (See Green 2001, Reed 2005, and Haig 2003 for search strategies.) There is no single database devoted to medical education. Review of Medline or PubMed alone is often inadequate. Consider using a medical librarian to access databases such as Educational Resource Information Center (ERIC), British Education Index (BEI), PsycINFO, and the Cumulative Index to Nursing and Allied Health literature (CINAHL). The Campbell Collaboration (www.campbellcollaboration.org) maintains a database of trials in the Social, Psychological, Education and Criminological Trials Registry (C2-SPECTR) and prepares systematic reviews of educational interventions that are reported in the Register of Interventions and Policy Evaluation (C2-RIPE) database. Some curricula, guidelines, and other relevant information will not have been published, but be available via the internet. (see Thomas 2004 for search strategies). By reviewing the literature related to your topic of interest, you likely will find documentation of deficient performance among trainees or practicing physicians. This way you can point to a health care problem, document deficiencies in current training approaches, and justify the need for a new approach (*a. problem identification*). Your search of the educational literature may find effective instructional strategies to consider including in your curriculum or ineffective ones to avoid. You could raise the methodologic rigor of your literature search to the level of a systematic review for publication in its own right (see Hebert 2003, Green 1999 for examples of systematic reviews of educational interventions; see Reed 2005 for methodologic considerations).

b) **Local needs analysis** – The *local needs* assessment targets the learning needs of trainees at a particular program or institution. This can be accomplished by a combination of several methods, including surveys, focus groups, faculty interviews, or formal objective assessments of the learners. Like politics, "all curricula are local." With the needs analysis information, you can customize your curriculum to attend to "contextual variables," including parochial objectives, resources, institutional mandates, and values.

c) **Identification and catalogue of local resources** – These resources might include faculty time, faculty expertise, space, administrative support, equipment, and non-faculty human resources (like standardized patients). This will help you either constrain your curriculum within the limitations or seek institutional or external funding.

d) **Decision-making about objectives, content, structure, instructional strategies** – This represents the culmination of the development process, incorporating all of the information gleaned above.

3. Focus Your Curriculum with Learning Objectives

("If you don't know where you are going, you might wind up someplace else.")

a) Write the learning objectives in full sentences describing exactly what the learners will do. They should include active tense verbs that precisely convey the nature of a particular activity, such as "explain," "perform," "recognize," or "rate as important." These will inform the instructional strategies and evaluation more directly than a mere list of topics. Objectives can be classified as process, impact, or outcome.

   i) *Process objectives* express the planners' anticipation that the learners' actual experience (during implementation) will match the planned experience. For example, the learners will evaluate X patients, attend X seminars, or meet with a preceptor X times.
   ii) *Impact objectives* anticipate the effect of the curricular intervention on the learners' knowledge, attitudes, skills, and behaviors. The latter two represent two aspects of psychomotor activity, skills reflecting competence (can they do it) and behaviors reflecting performance (do they do it).
   iii) *Outcome objectives* anticipate the downstream effect of the curriculum, via the learners, on quality of care and patient outcomes. This relationship is difficult to isolate from the myriad other determinants of physician behavior and health outcomes.

b) In following the objectives, however, remember that they represent the "destination and not the journey" (see Ende, 1992). A single-minded focus on objectives can distract planners from the learners' actual experience. The outcome of instruction may be uncoupled from instruction itself, resulting in stark curriculum documents that consist only of an outline of knowledge topics or behavioral achievements.

4. Develop Instructional Strategies That Are Suited to the Type of Learning Objective, That Are Evidence-Based (if possible), and That Employ Multiple Methods

("I'm not going to buy my kids an encyclopedia. Let them walk to school like I did.")

a) Link educational methods to the objectives. Make sure they are "suited" for the type of objective (Kern 1998, chapter 5, tables 5.2 and 5.3).

b) Make them evidence-based, if possible.

c) Use multiple methods: thereby accommodating different learning styles, reinforcing learning, and enhancing the likelihood of success.

6. Pay Attention to Feasibility and Sustainability

("In theory there is no difference between theory and practice. In practice there is." "We made too many wrong mistakes.")

The fidelity of the translation of the curriculum on paper to the curriculum in reality may be limited by feasibility. Documentation of feasibility issues helps readers (considering adapting your curriculum) anticipate costs, obstacles, and potential for success in their setting.

a) Administrative requirements

b) Costs

   i) Financial, direct and indirect

   ii) Opportunity costs

c) Faculty time and expertise

d) Unexpected obstacles

EVALUATION TIPS (TIPS 6-10)

6. Decide on Level(s) of Evaluation for Your Curriculum

("You can observe a lot just by watching.")

a) Learner satisfaction (happiness index): Document for local purposes but this will not glean favor with editors and reviewers

b) Qualitative description / reflection about the implementation experience

c) Feasibility and sustainability (often together with b)

d) Scientific demonstration of *effectiveness*:

i) Impact on learners' knowledge, skills, attitudes, behaviors

ii) Impact on provider performance and patient level outcomes

7. Don't Apologize for Curriculum Descriptions

("Boy, I'd give my right arm to be ambidextrous." when discussing Mickey Mantle being a switch-hitter)

a) Is an effectiveness evaluation required for dissemination (publication)? My personal answer is "no." Curriculum descriptions are akin to reports of new therapies, developed on the basis of scientific principles and past experience. We find phase I and phase II trials to demonstrate feasibility, dosing, and toxicity before large scale clinical trials of "effectiveness. And, other groups could adapt your curriculum and conduct an effectiveness trial.

b) Don't "apologize" for curriculum descriptions. I've seen authors of descriptive pieces try to tack on a last minute limited effectiveness evaluation, like a quick survey or short test. I think this makes editors focus on the evaluation and condemn the paper for its weak evaluation methods and unfounded claims of effectiveness. (Thus, you have given your right arm to be ambidextrous) Better to document a thoughtful, step-wise curriculum development process and highlight the innovative aspects of the instructional strategies and qualitative implementation experience.

c) Remember that you can still (and should) include a meaningful evaluation, even if it is not an effectiveness evaluation. As in 6a, you can document learner satisfaction, feasibility, sustainability, and/or a qualitative reflection of the implementation experience.

c) Some journals publish largely descriptive curriculum reports (see appendix for more details)

i) *Academic Medicine* ("articles" section)
ii) Medical Teacher
iii) BMC Medical Education
iv) Medical Education On Line
v) Teaching and Learning in Medicine ("developments" section)

d) Examples of recently published curriculum descriptions (*see references*)

i) Ziegelstein and Fiebach, 2004 (*Academic Medicine*)
ii) Korthuis, et al, 2002 (*Medical Teacher*)
iii) Tandeter, et al, 2003 (*Teaching and Learning in Medicine*)
iv) Houston e al, 2004 (*Journal of General Internal Medicine)*

8. Select Outcome Measures that Correspond to Learning Objectives, Have Established Validity and Reliability, and Can Be Feasibly Collected by You or, Preferably Someone Else

("I don't know [if they were men or women fans running naked across the field]. They had bags over their heads.")

a) Link outcome measures to objectives (see Kern, 1998, table 7.3). Outcome domains (with some exceptions) in ascending of desirability, but also difficulty and cost of measurement:

(i) Knowledge (exams)
(ii) Skills or competence (observation [mini-CEX], OSCE)
(iii) Attitudes (questionnaires, interviews)
(iv) Behaviors or performance (vignettes, record audits)
(v) Patient level outcomes (record audits)

(vi) Effects on downstream learners as in faculty development curricula or other train-the-trainer type curricula

b) Ideally, select outcome measures with established validity and reliability.

9. Be Creative in Conducting the Evaluation, Especially If You Don't Have a Million Dollars

("If the guy was poor, I'd give it back." [When asked what would he do if he found a million dollars]

Strategies to conduct *effectiveness* evaluation "on the cheap." How can clinician educators with limited protected time and limited resources conduct rigorous effectiveness evaluations?

a) Study design and conduct (*ideal = pre-post, randomized, controlled trial*)

i) Build randomization into program structures (Watkins and Moran, 2004)
ii) Take advantage of natural experiments (Green and Ellis,1997)
iii) Use national or historic controls (Smith et al, 2004)

b) Outcome measures

i) General strategies

- Try to avoid self reports of skills, but if your only choice is self efficacy, measure in *retrospective pre-post fashion* (Green et al 2003, Skeff 1992)
- Use off-the-shelf instruments with established psychometric properties [PBLI, (Ogrinc, et al, 2004)]
- Borrow data already being collected
  - Institutional quality or utilization data [Hospitalists (Kulaga, et al 2004)]
  - Billing or pharmacy data [Narcotic prescribing (Ury, et al, 2002)]
  - Programmatic evaluation data [Day float, (Wong, et al, 2004)]
  - National data, like certifying examinations [PBL conference (Itani, et al, 1997)]
- Collaboration with students, residents, fellows

ii) Strategies for behavior / performance outcomes

Strategy	Curriculum	Outcomes
Commitment to change	Faculty development curriculum (Green, et al, 2003)	Teaching and practice behaviors
Automatic entry	Clinical question curriculum (Cabell, et al, 2001)	Information searching behavior
Subject entry	Web-based portfolio (Fung, et al, 200)	Learning episodes
Chart audits	Medical ethics curriculum (Sulmasy, et al, 1994	Advanced directives and documentation
Vignettes		Quality performance indicators

10. Consider the "Educational Significance" of Effects Attributable to the Curriculum

("Baseball is ninety percent mental and the other half is physical.")

a) Akin to judging the clinical significance of a statistically significant effect of a therapeutic intervention. An educational evaluation study with a large number of subjects may find statistical significance in even a small increase in, for example, mean test scores. But this small increase may lack practical educational meaning.

b) Strategies (Colliver, 1999)

i) Changes detected on instruments with established construct or criterion validity (especially established ability to discriminate between different levels of expertise)
ii) Proportion of variance (Ω^2) in scores attributable to curriculum compared this to impact of other know educational factors
iii) Effect size (d) = difference in means / pooled SD (Hojat, 2004)

- 0.8 large
- 0.2 small

DECIDING WHAT TO SUBMIT FOR PUBLICATION (TIP 11)

11. Decide What Aspect of Your Curriculum-Related Work to Submit for Publication in the Context of Knowing What Makes Curriculum-Related Work Publishable

("You better cut the pizza in four pieces because I'm not hungry enough to eat six.")

Consider what makes curriculum-related work publishable:

a) For All Types of Publications:

i) Adds important new knowledge to the existing literature
ii) Methodologically sound
iii) Clearly and concisely written
iv) Findings / data well displayed

b) Needs Assessments:

i) New data (for an example, see Lamb, 2004)

- Important topic that will guide future educational efforts
- Multi-institutional sample, or population sample (single institution needs assessments are seldom sufficient, especially when previous work on the subject has been published)
- Data collection instrument has been rigorously / systematically developed, has obvious face validity, has some additional measures of reliability and validity

ii) Systematic review of existing curricula (see 2-a)

- Methodologically sound literature search
- Clear, rational inclusion and exclusion criteria
- Classification of included reports by quality or study design
- Clear, strong qualitative or quantitative synthesis, whichever is appropriate
- Focus on objective evaluation methods

d) Description of an Educational Intervention (see 7-d for examples)

i) Usually has to be very innovative to be publishable without some evaluation replicable. Justified by a needs analysis (usually in Introduction). Discussion highlights "important contribution" of the educational intervention, places it in the context of prior efforts and the related medical literature.
ii) Clearly articulated, important educational objectives
iii) Educational strategies that are sound, and congruent with educational objectives
iv) Educational methods that are innovative
v) If very innovative and topical, then less rigorous evaluation may be acceptable

d) Evaluation of an Educational Intervention

i) Study design, conduct, and analysis issues parallel those for determining the effect of clinical interventions on patients.

- Clearly stated evaluation question(s)
- Generalizability of the sample: multi-institutional educational studies are starting to appear in the literature.
- Sufficient numbers / power analysis
- Strong evaluation design (control group, long-term follow-up, blinded raters). Ideal design is pre-post RCT but this is often difficult to pull off.
- Longer term follow up confirms durability of impact compared to immediate effects
- Analysis appropriate to type of question and type of data; when appropriate, control for confounding variables with multivariate analysis or stratification

ii) Outcome assessment (see 8-10 for more details)

- Assessment of important outcomes that are meaningful and congruent with rationale for and objectives of curriculum: behaviors/ performance > skills, attitudes > knowledge > satisfaction
- Strong assessment methods: measures with established reliability and validity (face < content < construct, criterion, predictive)

HOW TO PREPARE CURRICULUM-RELATED MANUSCRIPTS FOR SUBMISSION

David E. Kern, M.D., M.P.H., William T. Branch, Jr., M.D., Eric B. Bass, M.D., M.P.H.

Decide on Aspect of Your Curriculum-Related Work That You Wish to Publish:

- Needs Assessment
- Description of an Educational Intervention: entire curriculum or a component of it
- Evaluation of an Educational Intervention
- A Combination of Description and Evaluation
- Plan and write up in a manner that increases publishability (see above, How To Plan Curricular Work So That It Is Likely To Be Publishable, Tips 1-10 for planning, Tip 11 for factors that increase publishability).

Experience from the 2004 JGIM Education Issue (preliminary data provided by Brent Beasley, Carol Bates, Elizabeth Eckstrom, Stewart Babbott, and Renee Wilson)

	% of Submitted	% of Invited Revisions
• curriculum description/evaluation articles submitted:	60 (100%)	
• rejected without review	9 (15%)	
• sent for review	51 (85%)	
• rejected after review	35 (58%)	
• revision invited	16 (27%)	(100%)
• rejected after revision	4 (7%)	(25%)
• accepted	11 (18%)	(69%)
• 2nd revision requested, not returned	1 (2%)	(6%)

- Major Concerns on Papers (there is overlap on these numbers—papers had more than one problem; rejection papers had many problems)
  - Evaluation incomplete or inappropriate: 32 papers (53%)
    - > Needs stronger outcome measures (long term data, competency assessment, valid instruments, pre-/post-intervention data
    - > Needs more outcome measures (knowledge, attitudes, skills, qualitative information, etc.)
  - Intervention poorly described 29 papers (48%)
  - Not established as innovative 16 papers (27%)
  - Poorly referenced/placed in the literature 15 papers (25%)
  - Writing style flaws/didn't follow journal rules 10 papers (17%)
  - Inadequate needs assessment 10 papers (17%)
  - Objectives are not clear 8 papers (13%)

Preparing the Manuscript:

Getting Ready to Write:

- Define the specific objectives of the paper
- Identify the targeted audience
- Decide on journal to which to submit (see Appendix B)
  - know which journals publish educational articles (handout)
  - have they published articles like yours in the past?
  - choose journal to which you will submit first (don't be afraid to reach for the best journal for your target audience), but have back-up journals in mind
- Read and follow instructions for the authors
  - types of article, where does yours fit?
  - word limit

- abstract
- text
- tables and figures (look at examples for journal)
- references

- When instructions are not detailed enough, use Uniform Requirements for Manuscripts Submitted to Biomedical Journals (http://www.icmje.org)

General Approach to Writing an Aritcle:

- Develop an outline for each section. Agree upon it with co- authors before writing text.
- Write one section at a time. Start by writing the specific objective(s), the Methods, and the Results, then proceed to the Discussion and Abstract. The Introduction can be written before, after, or simultaneously (if there is more than one author) to the Methods and Results.
- Better to get first draft out than to create "perfect" first draft.
- Plan for several drafts with critical review and suggestions from others. Anticipate potential reviewers' comments, concerns, and criticisms before submitting.
- Be consistent in terminology throughout the entire manuscript.
- Make sure results are presented consistently throughout (e.g. don't have different response rates or values for results in different sections, or in the tables or abstract compared to the main text).
- Make sure the rationale for curriculum, the objectives, the educational methods, and the evaluation strategies are congruent.
- Format: Follow instructions. Include running title in header, and page numbers in footer.

Title / Title Page:

- Keep title as simple and succinct as possible
- Use it to grab attention
- The title should capture the essence of the manuscript: pose a question that the manuscript addresses or highlight the main finding
- Include all information requested in the instructions on the title page; acknowledge financial support, if any.

Abstract:

- Write last, but write well.
- Use a structured format whenever possible.
- Accurately capture the important findings.
- Include study population, educational methods, evaluation design and methods.
- When possible, include rationale for the study and contribution to the literature.
- Reviewers will look at this first. Most readers will only read this.

Introduction:

- 2-4 paragraphs, adequately but not exhaustively referenced (get idea of how many references from review of previously published articles in the journal)
- Make a strong, logical case for your work.
- Describe the importance of the curricular topic from a national / international perspective, and the need for a curriculum to address the problem.
- Briefly review previous work by others, and build case for your work.
- End with the purpose / goals / objectives of your work / manuscript. Goals should flow from the logical argument built in the Introduction.

Methods / Program Description:

- Describe learner population precisely.
- Describe setting of intervention.
- State timing of intervention.
- Describe curriculum development process.
- State educational objectives clearly.

- Describe the educational content and methods in sufficient detail to be replicated (use appendices or cite other sources of information if necessary).
- Describe the resources required to conduct the curriculum.

Methods/ Evaluation:

- Define study population precisely.
- State evaluation design.
- Define evaluation variables: independent (e.g. intervention, confounders) and dependent (e.g. learner satisfaction; change in knowledge, attitudes, skills, behaviors; clinical outcomes).
- Describe measurement methods. When possible describe a methodical process for instrument development, and provide some information on instrument reliability and validity. Cite references for established methods, and summarize information on reliability and validity.
- Describe data collection: timing and process.
- Describe data analysis methods: make sure they are appropriate for the evaluation question(s). How will educational as well as statistical significance of intervention be determined?
- Don't put results in Methods.
- Indicate IRB approval.

Results:

- Create appropriate subheadings.
- Include all relevant response rates.
- Provide data on the demographic and other relevant characteristics of study (and control) population(s), and to the extent possible on non-respondents.
- Provide results: descriptive data, main analysis (bivariate and multivariate), secondary analyses, qualitative analyses.
- Use tables & figures to present data succinctly and clearly.
- Don't repeat in text all data in tables & figures.
- Don't put methods in Results.
- Save commentary for Discussion.

Discussion / Conclusion:

- Very briefly summarize findings, and clarify what your article adds to the existing literature in terms of content or methods.
- Comment on educational, in addition to statistical, significance of results.
- Do not repeat results, or add results that should be in the Results section.
- Discuss interesting findings in the context of the literature.
- Discuss findings that are in conflict with previous publications.
- Cite appropriate references.
- Clarify methodological strengths of the intervention / evaluation.
- List and, when appropriate, briefly discuss limitations of intervention / evaluation.
- Indicate next steps that would advance progress / understanding in this area.
- End with a conclusion that raises interest by suggesting possible implications of the work, by conclusions that are thought provoking.
- Do not draw conclusions or make suggestions for change that go beyond what is scientifically valid based on your data / findings. Be very careful about how you word conclusions / suggestions.

References:

- Check for accuracy and completeness.
- Follow journal instructions, and Uniform Requirements (http://www.icmje.org) when not specified.
- Use reference manager software.

Tables:

- Check previous articles published by journal for format.

- Label rows & columns clearly.
- Use tables only when more efficient than using text.
- Combine tables with similar content.
- Use footnote symbols per journal instructions, or per Uniform Requirements (http://www.icmje.org) when not specified.
- Spell out or footnote abbreviations first time they are used.
- Tables should be self-sufficient, without having to read the text to understand them.

Figures:

- Check previous articles published by journal for format.
- Label them so that readers can easily interpret them!
- Use to highlight key findings where a visual image is more powerful than words.
- Use footnote symbols per journal instructions, or per Uniform Requirements (http://www.icmje.org) when not specified.
- Spell out or footnote abbreviations first time they are used.
- Figures should be self-sufficient, without having to read the text to understand them.

Writing Style:

- Abbreviations: spell out abbreviations the first time they are used in text and in tables / figures.
- Constructing paragraphs
  - Decide on main point of each paragraph
  - Use a topic sentence, concluding sentence, and transitions
  - Aim for half page per paragraph
- Constructing sentences
  - Easiest order is subject-verb-object
    - Keep subject and verb together
  - Break up long sentences
  - Find hidden verbs:
    - "evaluation" >> "evaluate"
    - "representative" >> "represent"
    - "significant" >> "signify"
    - "development" >> "develop"
    - "have representation" >> "represent"
    - "does listen" >> "listens"
    - "be dependent" >> "depend"
- Being succinct
  - Eliminate unnecessary phrases
    - "There are"
    - "It is important to note that"
    - "Based on the fact that"
    - "In the years that have passed since…"
  - Replace wordy expressions
    - "in order to" >>> "to"
    - "one of the" >>> "a"
    - "utilize" >>> "use"
    - "despite the fact that" >>> "although"
    - "a larger proportion of" >>> "more"
  - Avoid redundancy
    - If you need a 2nd sentence or phrase to explain the 1st, get rid of the 1st.
- Active vs. passive voice
  - Most editors and reviewers prefer the active voice.
  - Active voice much more interesting to read
    - Subject performs action vs. undergoes action
    - Enhances flow

- Less wordy

- Verb tense
  - Introduction: use present tense for current state-of-the-art, past tense when describing other's findings.
  - Methods & Results: use past tense for what was done
  - Discussion: use present, present perfect (has/have been) or past tense
- Before and after examples (see Appendix C)

HOW TO RESPOND TO EDITORS' LETTERS

Rejection Letter:

- If you received a rejection letter, it is usually not worth pursuing the issue further.
- In exceptional circumstances, a follow-up communication with the editor may be worthwhile (e.g. when there is a factual error in a review or assessment, upon which the rejection rested; the reviews were way off base).
- Examine the wording of the letter carefully to make sure it is a full rejection. Occasionally the editor's letter may reject a paper, but add wording to indicate that the journal would consider a resubmission as a new manuscript, usually with substantial revisions. In such cases a follow-up communication with the associate editor / editor may be helpful in clarifying what is being asked and give you a ball park estimate of the chances of acceptance if a suitable revision is submitted.
- *A rejection from one journal does not mean that your manuscript is unworthy for publication elsewhere.*
- Reaffirm that your manuscript has merit (see above list on factors that enhance the publishability of curriculum-related work).
- Seek advice from colleagues / trusted mentors.
- Resubmit to another journal on your list
  - Use editor's letter and reviews to revise
  - Do within 2-6 weeks, depending on extent of the required revisions. Don't let it sit.

Revision Letter (See Appendix D for sample editor's and author's response letters):

- One rarely receives an acceptance letter, with a request for no or only minor revisions.
- For manuscripts that are eventually accepted, one usually receives a "reconsider after revision" letter. This can be worded as "unable to accept in its current form, but would reconsider after revision" or as a straightforward request for a revision. Either way, such a letter is generally good news. If you do everything that is asked, chances for eventual acceptance are substantially higher than for initial submissions, and often good to very good.
- Read the editor's letter and the reviewers' comments carefully and achieve full understanding of the points and requests being made. Generally, the editor helps you by telling you which comments of the reviewers are most important / essential to address.
- Respond to each comment of the editor and reviewers, either by changes in the manuscript or by providing an explanation why you did not change the manuscript in the cover letter. In general, do what is asked, unless the request makes no sense, would weaken the manuscript, or is impossible (e.g. you don't have the data, in which case you could respond by adding as a limitation). It does not look good to argue with the majority or a large number of the requests. You generally have a fair amount of discretion in how you word a revision, so it is unusual not to be able to do something and frame it positively.
- Include a detailed cover letter with your revised manuscript:
  - Thank the editor and reviews for their comments and suggestions, noting that the requested revisions have strengthened the manuscript (this is almost invariably true)
  - Provide a response to each comment / request of the editor and each reviewer. Number your responses under the headings: "Editor", "Reviewer 1", "Reviewer #2", etc. Include the editor's / reviewer's comments / requests in the order they were sent to you, and follow each

with your response. Include page or section and paragraph number of each revision. Briefly explain your revision, or explain why your did or could not make a revision.
    - The letter needs to convince the editor / associate editor that you have responded in a conscientious, good faith, and acceptable (to the editor) manner.
- Resubmitted revised manuscripts may be judged soley by the editorial staff, go out to the original reviewers, or go out to new reviewers.

USE OF MENTORS, COLLEAGUES, RESOURCES, AND OTHERS' EXPERTISE

The importance of collaborating with others in planning curricular work, preparing manuscripts for submission, and responding to editors' letters cannot be overemphasized. Seek mentors and individuals with appropriate expertise (e.g. medical librarians who can help you with literature searches, statisticians, psychometricians) to help you with your project. Most medical schools have Offices of Education, which may provide or direct you to mentors, individuals with special expertise or similar interests, and important resources (e.g. standardized patient programs, information technology / web design support). This is especially important when such mentors, colleagues, appropriate expertise and resources do not exist or are insufficient in your own division or department. Collaborators at your or other institutions can provide ideas, constructive criticism and advice at every stage of a project, and perhaps an expanded learner population, which will help with the generalizability of your work. Team meetings and deadlines can help keep you on track. Clarify team leadership, team member roles, first and senior author status early. Do not work in isolation.

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APPENDIX A

Finding and Applying for Funding Support

FUNDING SOURCES FOR CURRICULUM DEVELOPMENT

from
D. E. Kern, MD, MPH
Johns Hopkins Faculty Development Program
Longitudinal Program in Curriculum Development
February 17, 2005

General Information:

- COS (Community of Sciences) Funding Alert: a weekly email notification service with a customized list of funding opportunities based on specified criteria provided by COS members. http://www.cos.com Headquarters: 1629 Thames Street, Suite 200, Baltimore, Maryland 21231, Phone: 410-563-2378, Fax: 410-563-5389. Help Desk (for customer inquiries): Mon - Fri, U.S. EST, 8:30 AM - 5 PM, phone: 410-563-2378, press 1 on main menu. Or email http://www.cos.com/cgi-bin/helpdesk.cgi . Provides customized information on government and non-government funding opportunities. Best general approach to identifying funding resources for your particular interests.

Federal Funding Sources:

- AHRQ (Agency for Healthcare Research and Quality): http://www.ahrq.gov, click on funding opportunities. Focus is on research to enhance the quality, appropriateness, and effectiveness of health care services and access to those services. AHRQ supports research not only on the organization, financing, and delivery of health care services, and the effectiveness and appropriateness of clinical practice, but also on the promotion of improvements in clinical practice. AHRQ uses mechanisms of grants, cooperative agreements, and contracts to carry out research projects, demonstrations, evaluations, and dissemination activities. Sometimes research on the promotion of improvements in clinical practice and dissemination activities can be framed in curriculum development terms. Fewer $ than NIH, but also quite competitive. Having had intensive research training and having a funded mentor are very helpful.

- FIPSE (Fund for the Improvement of Postsecondary Education): http://www.ed.gov/about/offices/list/ope/fipse/index.html , FIPSE, 1990 K Street, NW, 6th Floor, Washington D.C. 20006-8544, Tel: (202) 502-7500 Fax: (202) 502-7877, E-mail: fipse@ed.gov . Director: Dr. Leonard L. Haynes, III, Ph.D. Non-medical focus on college and graduate level curriculum and faculty development, assessment, graduate and teacher training, student-centered, and technology mediated strategies. FIPSE looks for significant and innovative ideas that address significant issues and problems in postsecondary education, action-oriented and risk-taking projects (rather than basic educational research) with the potential of developing into national models, the likelihood of continuing to operate after funding ends, and the leverage of funding. No reason why medical curricula that fit these criteria can't be funded. Applications must be organizational rather than individual.

- Health Resources and Services Administration (HRSA), Bureau of Health Profession (BHPr): http://bhpr.hrsa.gov, click on Medicine & Dentistry. Competitive funding of proposals for Predoctoral Training, Residency Training, and Faculty Development Training in Primary Care (Title

VII funds). These are substantial, desirable grants, averaging about $235,000 per year. In practice, only programs that satisfy the funding preference are funded. The funding preferences are defined differently for each type of grant, but all relate to the placement of graduates in practices / setting that serve defined underserved patient populations.

- NIH (National Institutes of Health): http://www.nih.gov, click on grants and funding opportunities. Most funding is directed toward clinical, basic science, or disease oriented research, and awarded through disease-oriented institutes. Sometimes educational research and development can be targeted toward specific disease processes, and fall within the purview of one of the institutes. The NIH's increased interest in translating research into practice may create opportunities for educators to incorporate educational initiatives into grant proposals. Career development K awards can provide substantial support to individuals for periods of 3-5 years to develop as research scientists. Lots of $, but very competitive. Having had intensive research training and having a funded mentor are very helpful.

Selected Private Foundations (that fund projects in medical education):

- Commonwealth Fund: http://www.cmwf.org , One East 75th Street, New York, NY 10024, tele 212-606-3800, fax: 202-606-3500, email: cmwf@cmwf.org . Focus is on improving healthcare access and quality, improving health professional diversity, and promoting international exchange on health care policy and practice. The fund predominantly supports health services research, but some needs assessment, educational intervention studies, and conferences might be supported.

- Arthur Vining Davis Foundations: http://www.jvm.com/davis , Dr. Jonathan T. Howe**,** Executive Director, Arthur Vining Davis Foundations, 225 Water Street, Suite 1510, Jacksonville, FL 32202-5185, Tel: (904) 359-0670, email: arthurvining@bellsouth.net . The foundation has identified Health Care (Caring Attitudes) as one of their numerous foci.

- Fetzer Institute: http://www.fetzer.org , Fetzer Institute, 9292 West KL Avenue, Kalamazoo, MI 49009, Telephone: 269-375-2000, Fax: 269-372-2163, Email: info@fetzer.org . The Institute focuses on the relationship among body, mind, and spirit. It does not accept unsolicited proposals. Occasionally, it offers funding opportunities in the form of awards and requests for proposals. In the past it has funded communication skills training, research and development. Currently it is collaborating with researchers from the Indiana University School of Medicine and Regenstrief Institute Inc. on a project of nearly $2 million to study how to better educate future doctors to include human relations as they dispense health care. They are investigating how relationship-centered care -- which brings physicians' relationships with their patients, their patients' families, other caregivers, and communities into play -- can be incorporated in a medical school formal, informal, and hidden curriculum and post-medical school training thereby influencing the way future physicians practice medicine. The researchers also will conduct investigational studies on relationship-centered care itself.

- The Foundation Center: http://www.fdncenter.org , guide to private foundations.

- Arnold P. Gold Foundation for Humanism in Medicine: http://www.humanism-in-medicine.org , 619 Palisade Ave., Englewood Cliffs, New Jersey 07632, (201) 567-7999; Fax (201) 567-7880, Email: goldfdtn@gold-foundation.org . The foundation funds curriculum development projects related to humanism, ethics and compassion, and research focused on an aspect of humanism in medicine, at up to $25,000, with an opportunity for renewal for a second year.

- John A. Hartford Foundation: http://www.jhartfound.org , 55 East 59th Street, New York, NY 10022-1178, Phone: 212-832-7788, Fax: 212-593-4913, email: mail@jhartfound.org. The Harford Foundation funds numerous programs related to geriatric education and health services, usually in

conjunction with other organizations. Support for unsolicited individual projects is limited, and by invitation only after submission of a 2-5 page letter of inquiry.

- William Randolph Hearst Foundations: http://hearstfdn.org , 888 Seventh Avenue, 45th Floor, New York, New York 10106, Telephone: 212-586-5404, Fax: 212-586-1917. Funds programs in the areas of education, health, social service, and culture / the arts. Website states that preference is given to institutions of higher education, particularly in the fields of teaching and health care, both undergraduate and graduate.

- W.K. Kellogg Foundation: http://www.wkkf.org , One Michigan Avenue East, Battle Creek, Michigan 49017-4058, USA. Tele 269-968-1611, Fax: 269-968-0413. Medical education a small proportion of grants. Has a broad focus on building the capacity of individuals, communities, and institutions to solve their own problems and improve the quality of life and that of future generations.

- Josiah Macy, Jr., Foundation: http://www.josiahmacyfoundation.org/jmacy1.html , 44 East 54th Street, New York, New York 10021, tele 212-486-2424, fax 212-644-0765, email: jmacyinfo@josiahmacyfoundation.org. The Foundation has focused its resources specifically on improving the education of health professionals, particularly physicians' mission "to develop, monitor, and evaluate projects which demonstrate new approaches to addressing problems in health professions education". The foundation has defined four areas of particular emphasis in grant making. They are: 1) projects to improve medical and health professional education in the context of the changing health care system; 2) projects that will increase diversity among health care professionals; 3) projects that demonstrate or encourage ways to increase teamwork between and among health care professionals; and 4) educational strategies to increase care for underserved populations.

- NBME (National Board of Medical Examiners) / Edward J. Stemmler, M.D. Medical Education Research Fund: http://www.nbme.org , 3750 Market Street, Philadelphia, PA 19104-3102, Telephone (215) 590-9500. E-mail Inquiries: General, Webmail@nbme.org ; Stemmler Fund, Stemmlerfund@nbme.org . The NBME accepts proposals from LCME or AOA-accredited medical schools. The goal of the Stemmler Fund is to provide support for research or development of innovative assessment / evaluation approaches. Expected outcomes include advances in the theory, knowledge, or practice of assessment at any point along the continuum of medical education, from undergraduate and graduate education and training, through practice. Pilot and more comprehensive projects are both of interest. Collaborative investigations within or among institutions are eligible, particularly as they strengthen the likelihood of the project's contribution and success. In the 2005-2006 cycle, applicants may request up to $70,000 of NBME funding support for a project period of up to two years.

- Pew Charitable Trusts*:* http://www.pewtrusts.org , 2005 Market Street, Suite 1700, Philadelphia, PA 19103-7077, ph: 215.575.9050 / fx: 215.575.4939; 1425 K Street NW, Suite 900, Washington, DC 20005-3674, ph: 202.207.2150 / fx: 202.207.0360,e-mail: info@pewtrusts.com . They have programs in culture, education, environment, health and human services, public policy, and religion. They also have a venture fund that allows them to support goals and objectives that fall outside the six program areas. In the past they have funded a Partnership for Quality Education program (subsequently funded by RWJ Foundation), which funded eight academic health centers and managed care organizations to work together to better prepare physicians to practice high quality, cost-effective care, and the ACP Community-Based Teaching Project. Medical education, however, is a small part of their focus.

- Donald W. Reynolds Foundation: http://www.dwreynolds.org/index.htm . 1701 Village Center Circle, Las Vegas, Nevada 89134, Phone: 702-804-6000, Fax 702-804-6099, Email: GeneralQuestions@dwrf.org . Program on Aging & Quality of Life: grants aimed at improving the training of physicians in geriatrics.

- Robert Wood Johnson Foundation*:* http://www.rwjf.org/index.jsp , 2003 P.O. Box 2316 College Road East and Route 1, Princeton, NJ 08543, tele: 888-631-9989. The Generalist Physician Faculty Scholars Program supports the career development of outstanding junior faculty in academic departments/divisions of family practice, general internal medicine, and general pediatrics, who are nominated by their dean, and complete an application project including a proposed research project, several of which constitute educational research. Awards range from $230,000 to $300,000 for 4 years, and include some salary support. No call for proposals yet for 2005. The Robert Wood Johnson Foundation puts forward calls for proposals, and accepts unsolicited proposals that address one of their focused portfolios or specific missions. Their statement:

  The Robert Wood Johnson Foundation seeks to improve the health and health care of all Americans. To achieve the most impact with our funds, we prioritize our grants into four goal areas:

  - To assure that all Americans have access to quality health care at reasonable cost.
  - To improve the quality of care and support for people with chronic health conditions.
  - To promote healthy communities and lifestyles.
  - To reduce the personal, social and economic harm caused by substance abuse — tobacco, alcohol, and illicit drugs

  To accomplish these goals, we use a variety of strategies. We support training, education, research (excluding biomedical research), and projects that demonstrate the effective delivery of health care services. Rather than paying for individual care, we concentrate on health care systems and the conditions that promote better health.

For subspecialty oriented curricula, contact the relevant subspecialty organization. e.g. Am Rheum Assoc

For faculty at VA hospitals, explore VA career development awards as well as funding opportunities for individual projects.

Learn about any grants offered by your own institution.

PREPARING A GRANT APPLICATION

- Identify focused goals that are based on your own passionate interests and could help you achieve your broader goals.
- Identify potential funding sources and opportunities (see above).
- Chances are usually better if a funding agency has called for applications in a specific area, than if you present an unsolicited idea to a funding agency.
- However, it does not hurt to ask an agency if they would consider a proposal on a topic of importance to you.
- Faculty development awards generally provide both partial salary support and some funding for research expenses. There is usually considerable flexibility in terms of the research project(s) the applicants may propose, i.e. unsolicited ideas for research are usually part of the process, although the award may specify a general area of focus.
- Get additional information, instructions, and application materials.
- Decide whether the focus of the grant award is appropriate and the potential financial award is worth the effort. A small grant takes nearly as much effort as a large one, so don't be afraid to think big.
- Identify and discuss the opportunity and the application process with a mentor or colleague who has received funding from this source previously. If previous successful proposals are available, review them.
- Review the instructions in detail. Assess the complexity of the application process.
- Identify the most appropriate leader, taking into consideration the skills, experience and time needed to lead the project as well as the funding agency's expectations for the leader. (Sometimes, because of curriculum development expertise, you may be asked to play a role in and / or write part of a grant for

which someone else is Principal Investigator. For such a role, you are generally written in for partial salary support, which can provide protected time to accomplish the work to which you commit.)

- Assemble a team that has the appropriate combination of expertise. Look for opportunities to connect with colleagues who have been successful in obtaining peer-reviewed funding. Try to include colleagues from outside your own institution as advisors if not as co-investigators. Aim for a balance between junior and senior team members, keeping in mind that junior colleagues are likely to have more time to spend on a project.
- Develop a list of components for the application and a timetable. Leave plenty of time to complete the process. Allow time for review of the proposal by all team members.
- Determine whether Institutional Review Board (IRB) approval is required, and begin the process early. Check instructions to see if IRB approval is required *before* submitting the grant proposal.
- Determine whether letters of support are required or desirable. Contact individuals early. Give them a sample letter that they can revise.
- Delegate components of the application process / grant writing to colleagues when appropriate. Assign due dates, and follow-up. You are responsible for revising and consolidating individual contributions into a persuasive, coherent whole.
- Follow instructions precisely.
- Leave time for approval by Grants Administration Office (approximately two weeks).
- Grants are usually quite competitive. Put your best effort into the process, and get help / feedback / reviews from others. It is particularly helpful to obtain feedback from someone who was not involved in drafting the proposal.
- Be realistic in predicting needed time commitments, and budget appropriate salary support, whenever possible, to cover this time.
- Be prepared to submit a proposal more than once to get it funded. For most funding agencies, only 20 – 30% of proposals are funded. Be persistent!
- Look for opportunities to learn more about grant writing (e.g. serve on a study section for a funding agency or take a course on grant writing).

APPENDIX B

JOURNALS THAT PUBLISH MEDICAL EDUCATION ARTICLES

Medical Education Journals

Academic Medicine (http://www.academicmedicine.org/)

The journal publishes *Articles*, Commentaries, Research Reports, and Special Features, as well as items in other categories. Articles can be descriptive pieces on topics directly and practically relevant to medical school education, residency training, GME, and CME. Such topics include descriptions of innovative programs, and articles on medical informatics, information and medical technologies, the history of medical education and training, and humanities topics.

Advances in Health Sciences Education (http://www.kluweronline.com/issn/1382-4996)

The journal will not only publish empirical studies but also stimulate theoretical discussions and address practical implications. Reviews of important developments in the field will be particularly encouraged, since advances in a field can only result from a deep understanding of what has already been accomplished. The editors welcome contributions in which a line of reasoning is illustrated with multiple experiments or correlational studies. *In addition, the editors encourage submission of new ideas for health sciences education, papers that are not necessarily empirical in nature, but describe interesting new educational tools, approaches or solutions.*

The journal will accept articles on topics such as problem-based learning, tutorial guidance, self-directed learning, staff development, achievement testing, forms of motivation and how to promote them, learning styles, curriculum development, curricular comparisons, program evaluation, expertise development, continuing education, community-based education, and communication skills.

BMC (Biomed Central) Medical Education (http://www.biomedcentral.com/bmcmededuc/)

BMC Medical Education (ISSN 1472-6920) is an online journal publishing research articles after full peer review. The journal also publishes perspective pieces in a *Debate* section. All articles are published, without barriers to access, immediately upon acceptance. The journal is published by BioMed Central Ltd, Middlesex House, 34-42 Cleveland Street, London W1T 4LB, UK. *BMC Medical Education* publishes original research articles in undergraduate, postgraduate, and continuing medical education. *BMC Medical Education* (ISSN 1472-6920) is indexed/tracked/covered by PubMed, MEDLINE and BIOSIS.

Education for Health (http://www.network.unimaas.nl/efh/)

EDUCATION for HEALTH: Change in Learning and Practice (EfH) is a peer-reviewed, MEDLINE-indexed international, professional journal that publishes original contributions of interest to educators, administrators, and learners in the health professions. It is the journal of the *The Network: Towards Unity for Health*, a consortium of health professions schools in more than 60 countries that share a commitment to finding ways to improve the preparation of future health professionals, with a particular concern for ensuring that they are responsive to the needs of the communities in which they learn and work.

For publication in *Education for Health: Change in learning and practice* we invite reports on qualitative and quantitative research that can enhance educational practice, especially if it will help enhance clinical practice. We also invite thoughtful analyses, innovative ideas, and conceptual statements that may not necessarily be the product of research but which have implications for the decision-making of teachers and educational leaders.

Education for Health is unique among health professions education journals. We seek manuscripts that focus on one or more of the following:

1. understanding the process of achieving constructive and worthy change/innovation in health professions education;
2. educational programs that help learners be responsive to the needs and characteristics of their surrounding communities;
3. the interdependence of education and practice;
4. interprofessional education and collaboration;
5. preparing health professionals for providing the highest quality primary care;
6. contributions from and for health professions educators who work in the developing parts of our world.

Education for Primary Care (http://www.radcliffe-oxford.com/journals/J02_Education_for_Primary_Care/default.htm)

UK-based *Education for Primary Care* aims to reflect the best experience, expertise and innovative ideas in the development of undergraduate, postgraduate and continuing primary care education.
We aim to publish:

- high-quality academic articles
- *practical ideas based on relevant experiences*
- news and opinions on developments
- posters of pertinent research.

The journal accepts the following types of publications: general articles, original contributions, news and review articles in the general areas of undergraduate, postgraduate and vocational training, and continuing education of healthcare professionals in the United Kingdom and overseas.

We welcome articles from authors who have had teaching experience, and who have evaluated new and successful teaching methods which they would like to share with their colleagues.

Journal of Continuing Education in the Health Professions (http://www.jcehp.com/)

The Journal of Continuing Education in the Health Professions publishes articles relevant to the theory and practice of continuing education in the health sciences. The journal's primary purpose is to provide thoughtful and practical advice to CE practitioners in the development, conduct and evaluation of continuing education programs. The editors solicit thoughtful essays and research on a wide range of subjects that affect the lifelong professional commitment, competence, and performance of the continuing health education practitioner.

J Contin Educ Health Prof invites manuscripts addressing continuing education and continuing professional development in the health sciences. The Journal serves those who design, implement, or evaluate learning and behaviour change and those who develop policy involving continuing education. Topics of special interest include continuous quality improvement, health policy and professional performance, competency assessment, knowledge translation, team learning, and disease management.

Medical Education (http://www.mededuc.com/)

Medical Education is an international, peer reviewed journal with distribution to readers in more than 80 countries. The journal welcomes papers on any aspect of medical education. Medical Education publishes original research papers, review articles, discussion papers, special feature pieces, short reports of research in progress or of educational innovation, commentaries, letters to the editor and book reviews

'Really good stuff': new ideas in medical education: Twice a year, *Medical Education* publishes a selection of the best short structured reports submitted to its 'Really Good Stuff: new ideas in medical education' section. *Many of these are descriptions of new ideas in curriculum design, teaching practice, assessment or evaluation and some describe attempts at programme or curriculum change.*

Medical Education Online (http://www.med-ed-online.org/)

Medical Education Online (MEO) is a forum for disseminating information on educating physicians and other health professionals. Manuscripts on any aspect of the process of training health professionals will be considered for peer-reviewed publication in an electronic journal format. MEO publishes three general categories of articles:

Feature Articles include articles discussing issues of general interest to the health education community. For example (but not limited to) presenting perspectives as well as reviews and commentary on the literature on a specific topic. With the exception of invited articles and editorials, feature articles are peer-reviewed.

Research Articles present high quality completed research or evaluation studies. Research articles are peer-reviewed.

Trend Articles present new ideas as well as studies or descriptions of programs in the early stages of development. Trend articles are envisioned as a means of quickly disseminating innovative ideas, descriptions of new programs and preliminary results from research and evaluation studies. Manuscripts submitted to this section are peer-reviewed. The preliminary nature of the material submitted will be taken into account in the review process though descriptions of new programs are expected to have at least some minimal level of formative evaluation data.

In addition MEO publishes letters to the editor and book reviews as well as provides a repository for resources such as curricula, data sets, syllabi, software, and instructional material developers wish to make available to the health education community. *Medical Education Online* is not affiliated with Medical Education which is a separate peer-reviewed journal disseminated in both electronic and paper formats by Blackwell Publishing**.**

MedEdPORTAL (http://www.aamc.org/meded/mededportal)

MedEdPORTAL is a web-based tool of the Association of American Medical Colleges (AAMC) that posts peer reviewed instructional materials, assessment materials, virtual patients, and faculty development materials, classified by ACGME competency, level of learner, and location of learning.

Medical Teacher (http://www.medicalteacher.org/)

Medical Teacher is the journal of the Association for Medical Education in Europe, an international association for all involved with medical and healthcare professions education. Papers published typically, but not exclusively, relate to accounts of new methods of teaching and learning; guidance on structuring and evaluating courses and curricula; assessing achievement; and aspects of professionalism. Papers may be published in various formats including: reports of innovation and research in medical education, case studies, survey articles and practical guidelines. Article types also include short communications on matters of topical interest or work in progress.

Teaching and Learning in Medicine (http://www.siumed.edu/tlm/)

Teaching and Learning in Medicine (TLM) is is a peer reviewed subscription journal published quarterly that serves an international forum for scholarly state-of-the art research on the purposes and processes of teaching and learning in the education of medical professionals. Its articles address practical issues in the conduct of medical education, as well as issues more basic to medical education, and provide analysis and empirical research needed to facilitate educational decision making by administrators, teachers, and learners. Its scope includes all levels of medical education, from premedical to postgraduate and continuing medical education.

TLM publishes manuscripts in the following categories: Perspectives/Editorials; Analyses/Reviews of Literature; Applied Research; Research Basic to Medical Education; Research Methodology; Book Reviews; and Developments.

Developments**:** This section describes innovations and newly developed programs, the purpose being to permit researchers a ready communication forum for their curriculum developments in progress, but not yet fully researched.

General Medical Journal that Publish Some Curricular Articles

American Journal of Medicine (http://www.amjmed.com/)

The *American Journal of Medicine*, the official journal of the Association of Professors of Medicine, publishes original clinical research of interest to physicians in both inpatient and outpatient settings in academia and community-based practice. They occasionally publish commentaries, reviews, and reports on selected programs in their green pages. Rarely do they publish unsolicited educational articles.

Annals of Internal Medicine (http://www.annals.org/shared/author_info.shtml)

The mission of *Annals of Internal Medicine*, the journal of the American College of Physicians (ACP), is to promote excellence in the practice of internal medicine and in clinical research. They publish reports of original research reviews, debate, and commentary on a broad range of topics related to the care of adults and adolescents. The intended readership includes clinicians, clinical researchers, managers, and other persons involved in providing medical care. Rarely do they publish unsolicited articles on medical education.

Archives of Internal Medicine (http://archinte.ama-assn.org/)

The Archives, a subspecialty journal of the American Medical Association (AMA), publishes manuscripts of interest and relevance to practicing generalist and subspecialist internists. The journal rarely publishes articles on medical education.

British Medical Journal (http://bmj.bmjjournals.com/advice/sections.shtml#practice)

The *British Medical Journal* has just launched a new section, "Learning in practice." This monthly section includes original research papers and review articles which highlight good teaching and learning practices, or draw attention to gaps in such practice. The original research papers should follow the same style as articles for the Papers and Primary care sections while the review articles should conform to the same style as those for Education and debate.

The BMJ has long had a section called, **"**Education and debate." These are mostly commissioned articles, but they do welcome reports on all aspects of medicine and health including sociological and ethical aspects of medicine; polemical pieces; and educational articles. These are peer reviewed, and relatively short (1500 words, no more than 24 references).

Journal of the American Medical Association (http://jama.ama-assn.org/ifora_current.dtl)

JAMA has an annual medical education theme issue, published in September. The submission deadline for consideration for the theme issue is generally in April of that year. *JAMA* occasionally to rarely publishes educational articles in other issues.

Journal of General Internal Medicine (http://www.blackwellpublishing.com/submit.asp?ref=0884-8734)

The *Journal of General Internal Medicine* is the official journal of the Society of General Internal Medicine (SGIM). It promotes improved patient care, research, and education in primary care. Article categories are: Original Articles, Innovations in Education and Clinical Practice, Health Policy, Populations at Risk, Brief Reports, Reviews, Perspectives, Editorials, GIMedia Reviews, Letters to the Editor, and Reflections. Educational articles could fit within several categories. The *Innovations in Education and Clinical Practice* may be particularly relevant for curricular work. Articles in this section provide succinct descriptions of innovative approaches to improving education and patient care in general internal medicine (see editorial in *J Gen Intern Med.* 1999; 14:775-6).

Reports of non-randomized educational or behavioral interventions should follow the recommendations of the Transparent Reporting of Evaluations with Non-randomized Designs (TREND) statement. See the original article (*Am J Public Health* 2004; 94:361-366) or http://www.trend-statement.org/.

In 2004, JGIM introduced an Education Issue. In 2005, the types of submission that were invited included: Educational Innovations, Original Articles, Brief Reports, Perspectives, Reviews, Resource Papers, and Recommendations / Guidelines.

APPENDIX C

WRITING STYLE: BEFORE AND AFTER EXAMPLES

Before:

In the months that have passed since September 2001, there has been increasing recognition and awareness among physicians and other health professionals about the risks of a wide variety of different types of terrorist attacks in the U.S. Attacks using biological or chemical agents known to have high potential for causing epidemic disease were attempted and could be attempted again with a large number of serious consequences for our nation and its citizens. Based on this reason and other reasons, a project was conducted in order to review and synthesize all available published studies and educational curricula on the training of health professionals in how to detect disease and manage patients in the event of an attack.

After:

Clinicians now recognize that terrorists could use biological agents to attack the U.S. An attack could cause a devastating epidemic of disease, but little is known about clinicians' ability to respond to an attack. Therefore, we conducted a systematic review of studies that evaluated the training of clinicians in how to respond to a bioterrorist attack.

APPENDIX D

EXAMPLE EDITOR'S AND AUTHORS' RESPONSE LETTERS

This article was rejected by JAMA and J Gen Intern Med before being accepted by Adv Health Sci Edu. In the process it underwent major revisions. The editor's letter is actually an "accept" rather than "reconsider" letter. However, the issues raised and the responses given are very similar to what often appears in "reconsider" letters.

Editor's Letter:

Advances in Health Sciences Education[1]
Theory and Practice

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Nov. 14, 2002

Dr. Paul Haidet
Houston VA Medical Center
2002 Holcombe Blvd.(152)
Houston TX 77030
USA

Dear Dr. Haidet:

Thank you very much for submitting your manuscript:

AHSE 135-02

to *Advances in Health Sciences Education*.

Let me begin with an apology for the long delay as I explained in my e-mail. However, when I finally get moving, I move fast.

[1] An international journal published by Kluwer Academic Publishers, P.O. Box 17, 3300 AA Dordrecht, The Netherlands
Tel. (31) (78) 639 22 06; Telex 29245; Fax (31) (78) 639 22 54; E-mail: joy.carp@WKAP.NL

And I bring good tidings. I am pleased to inform you that, on the advice of the two external reviewers, we would like to accept this paper for the Journal. In my own review, I was very impressed with the care you took in the study design, and the intriguing findings. It is indeed a nice piece of work.

While the reviewers and I have a number of issues, I don't think these all need attention. I suggest the following:

1) I would drop "pseudo-randomized" as a descriptor and be a bit more specific as to how residents ended up where they did. In particular, is there any reason to presume that residents selected the session that was, in their view, compatible? That is, they were not aware before they got there as to whether they would get didactic or active, so there is good reason to presume that they crossed over for unrelated reasons and no bias would result.

2) It is a bit deceiving to suggest that you got as much learning with only 50% nas much teaching. After all, I assume the teacher was there, even if he didn't say anything. So it's not that the is any real economizing.

3) Tell us some more about the MCQ questions. How many per test? Why did you ask for "standard" and "hard" questions, and was performance different on the two types?

4) Was followup complete. Are mean scores for the final test from all participating residents? If there was serious dropout (say > 10%), do stayers look the same as dropouts on pretest and immediate post test?

5) I really think that you could do a bit more careful analysis of the learning outcomes. Having reported the overall test, repeat the analysis for just pretest and post test to see whether there is an interaction with group assignment (i.e. it looks like active learns more. Do they?). Similarly, do the analysis for just post test and follow up (it looks like active forgets faster. Do they?).

6) Finally have a look at the detailed comments of the reviewers. I am not insisting that you deal with any or all of them, with the exception of the comments above. But you might want to examine them for merit and make some small changes.

Please send the revised manuscript direct to the publishers. When you resubmit, please make sure that you also enclose a computer diskette version of the paper, that you have signed the copyright form, and that the references are in the appropriate (APA or Vancouver (uniform requirements)) style.

The revised manuscript will **not** sent out for formal review; you can assume that it is accepted for publication subject to an adequate response to these comments, in the view of the editors. So we can assure you that the response time will be much shorter.

Thank you for considering AHSE.

Sincerely,

Geoff Norman, Ph.D.,
Academic Editor

Author's Response Letter:

Jan 12, 2003

Geoffrey Norman, PhD
Editor, *Advances in Health Sciences Education*
Mc Master University
Room 2C14, Health Sciences Centre
Hamilton, Ontario
Canada L8N 3Z5

Dear Dr Norman,

Thank you for your letter dated Nov 14, 2002 informing us of your conditional acceptance of our manuscript AHSE 135-02. Below, we detail our responses to your comments and those of the reviewers. Enclosed with this mailing are three hard copies of the revised manuscript, as well as an electronic copy in Word 2000 format. If you are in need of any additional information, please do not hesitate to contact me.

Sincerely,

Paul Haidet MD MPH

Responses to the Editor and Reviewers:

1) *I would drop the term 'pseudo-randomized'…*
We eliminated this term from the first paragraph of the methods section. We describe in detail how many residents crossed over and how many were 'walk-ins' in the first paragraph of the results. We discuss the fact that residents had no prior knowledge of the teaching method to be employed at either session and that cross over was likely due to reasons unrelated to the teaching method in the discussion at the top of page 16.

2) *It is a bit deceiving to suggest that you got as much learning with only 50% as much teaching…*
A primary question in this study was whether the same amount of content could be covered in the active session as in the didactic without detrimental effects on learning outcomes. We agree that it is deceiving to suggest that 50% less time was spent teaching, because the teacher is still in the classroom for the same period of time, and, in a real-world application, would use the time during small-group activities to 'float' and clarify points, etc. We have changed the language in the first paragraph of the discussion section (page 12) to more accurately reflect our intent and study question.

3) *Tell us some more about the MCQ questions…*
We have added additional information about the MCQ questions and the knowledge assessment to the methods section in the first paragraph at the top of page 8.

4) *Was followup complete…*
Eight participants did not complete the followup knowledge assessment. 4 of these were from the active group, 4 were from the didactic group. There were no differences between stayers and dropouts on either the pre- or the post-tests. We have added this information to figure 1 and to the text on page 11 ('learning outcomes' section, first paragraph)

5) … is there an interaction with group assignment (looks like active learns more)…

There was no significant interactions between group assignment and test scores for either pre- to post analyses or for post- to followup analyses. We have added the results of this analysis to the results section on learning outcomes (page 11, 3rd paragraph, second sentence).

6) *Have a look at comments of reviewers…*
We have incorporated additional suggestions regarding language contained in the reviewers comments.

7) Please note that the order of authors has changed (Dr Richards is now listed last), and that Dr Wrister's name has been changed to Dr. O'Malley to reflect her married surname.