Scholarly activity for clinicians

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"Daddy works in a magical, faraway land called Academia."

What is scholarly activity?

- New knowledge is generated ("research")
  - Direct patient experience → case reports or case series
  - Review of charts or databases → new knowledge about outcomes
  - Surveys → new information about trainee or patient or MD perceptions
  - Prospective trials
  - QI projects – if properly constructed
  - Educational initiatives – if properly designed
  - Library review can be synthesized into lectures, review articles or metaanalysis
- The knowledge is disseminated to others (presentation and/or publication)
- Presentation should not be enough. You have already done most of the work, so why not publish it?

What makes a good research question?

- The question is clearly defined. (Not "What happens after X?" but "What is the frequency with which Y happens after X?)
- The patient population/disease process/independent and dependent variables/endpoints are clearly defined.
- The answer is not already known! You MUST review the literature.
- However, variations on a theme are acceptable. (rural setting, community hospital, Native Americans, octagenarians, 3rd year med students)
- You can access enough patient or subject material to answer the question
  - Sample size calculations if doing a trial
  - Easier: Look at similar sorts of published papers to see their "n"
- You care about finding the answer!

Designing the study

- Retrospective chart review vs retrospective database review vs. prospective database w retrospective review vs. prospective series vs. historical controls w prospective series vs. prospective randomized
- Inclusion and exclusion criteria (even for retrospective studies)
- Estimate record incompletion or patient dropout or survey non-return rates
- Now revisit the sample size!
- You should be able to get this done in a year from the time you start
- Be sure you have defined your variables clearly
- Design a data collection form
- Do a beta test and then revise the form and redefine your variables

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Getting help

- Lots of people want to help you. They just don't know it yet!
- Med students need to do research to distinguish residency apps & want to work with you to get letters of recommendation. They are also fun!
- Nurses may be going back to school for Masters/PhD and need projects.
- If it's clinically relevant, nurses and colleagues can help identify or recruit.
- Hospitals need quality improvement done and have staffs to do it.
- UND scientists need your samples and your insights for collaboration
- UND needs educational innovation and has professional educators who can help you design education projects.
- UND campus librarians can help with literature review and (later) editing
- Statistical help is available from UND faculty
- If in doubt, ask an experienced colleague, your campus dean, your chair, or me.

IRB's

- All projects must be approved by UND IRB. Some may be "exempt" and others "expedited", but only the IRB can make this determination.
- You will likely also need IRB approval by your local hospital IRB unless it's a national database study or non-patient survey.
- Most of the same stuff goes on both sets of forms but in different places.
- Find a previous successful IRB for a similarly structured study as a model
- Allow enough time for review and necessary changes.
- A sense of humor can be an asset.

Analyzing your results

- A good data form makes a big difference. You do NOT want to have to go back to charts to collect new data.
- There are lots of fancy stats packages, but Excel probably has what you need and is much easier. If you're going to use Excel, set up a mock data set and try the stats functions before entering real data, because some stats functions only work if the data is organized in a certain way.
- Get help from a colleague with a stats background prn.
- If the study "fails", it's still publishable! That your hypothesis was wrong may still be new knowledge.
- If the study "succeeds" but p >0.05, redo the sample size calculation with your new information. Is it realistic to keep going and enter more data? (Get help to do this prn)
- Sample size calculation for dummies: Just recopy a fraction of your data, add it back to the original data set, and redo the stats to see if p<0.05.

Abstracts

- Relatively easy and fun to write. Students like meetings because they are mini-vacations with free food.
- Pick the meeting based on what is usually accepted there.
- Some smaller meetings have mandatory manuscript submission requirements. Check and decide.
- Presenting without publishing has less impact both on the CV (for you and/or the student) and on the world at large (which is presumably why you started this in the first place).
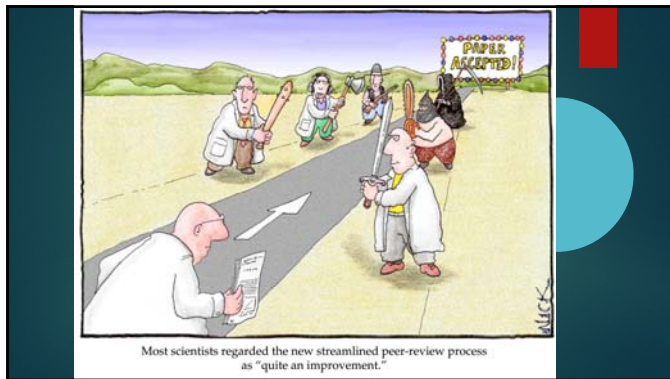

Manuscript writing step by step

- Abstract = meeting abstract
- Introduction: 3 paragraphs. First sets up the problem or question. Second elaborates your hypothesis. Third explains how you tested it.
- Methods: IRB approval. Study design. Patients (inclusion/exclusion) or Database description. Stats paragraph.
- Results. Narrate the figures.
- Discussion: 5-6 paragraphs
  - 1. Two sentence background. This study shows A, B, and C.
  - 2. A is your topic sentence. How is this credible/not credible/different from the literature/novel/important/problematic? Limitations of this conclusion?
  - 3,4. Same for B and C.
  - 5. 1-2 sentences summarize your conclusions. 1-2 sentences describe larger implications for clinical care or science or education or whatever.

Journals

- Pick a journal that has published similar stuff.
- PubMed listing is important.
- Print vs. on-line may be less so today.
- Impact factor as a selection tool
- Be realistic.
- Format to journal style. Ask campus librarian to show you EndNote or other bibliography manager.
- Always suggest reviewers in your cover letter.
- You can't suggest your brother or your partner, but you can suggest friends.
- Coauthors may also have friends!

Most scientists regarded the new streamlined peer-review process as "quite an improvement."

Rejection

- Most submissions get rejected on initial submission.
- If not, you may have shot too low! Would you really want to publish in a journal that would accept your work?
- Is it really a rejection or an opportunity for resubmission?
- If resubmission, do what they ask you to do and write a detailed point by point cover letter.
- If rejection, consider the reviews to see if there are things that can be corrected or criticisms that you can immunize yourself against by raising them yourself and dismissing them.
- Then move down the impact factor scale and submit somewhere else. Do so rapidly. Do not let papers sit or you will lose momentum.
- Anything can be published somewhere!

Some examples

- Strength of different surgical knots in running vs interrupted closure
- National survey of resident vs. faculty perceptions of teaching in residency programs
- Predictive factors for patient no-shows to surgery
- Case series on effect of latent claustrophobia on patients with hand casts
- Review article on short gut syndrome and intestinal adaptation
- Whipple in HIV+ patient (surgeon exposure from IVC Greenfield filter glove tear)
- Wound healing above or below the level of paraplegia (chart review)
- Case series and classification for Amyand hernias (appendix in inguinal hernia)
- Survey of what patients know and want to know when giving informed consent
- Case report and review of literature on diaphragmatic rupture
- Survey of patients' understanding of the medical hierarchy in a teaching program