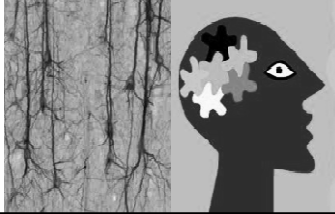


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*Developing a
scholarly project
with the aim of
publication*



What is a scholarly project?

◆ For the purposes of this discussion, I am talking about a small research project that someone might do as part of a headache fellowship or an early career headache clinician. I am assuming this is someone who aims to be a clinician-scholar and is most interested in doing clinical or translational, as opposed to basic, research. If you need advice about NIH submissions and other sorts of hardcore research experiences I am not the best person. I view a scholarly project as some sort of project that develops new knowledge. Might be a quality improvement project, a systematic review of other research, or a small observational study or data-mining study of existing information like electronic medical records or other databases. Re randomized trials: not a beginner's project.

Tips on selecting a scholarly project

- ◆ Plan for success: Keep it simple and small. Most common mistake is choosing something too big, adding on to a project and then getting nothing done or nothing done well.
- ◆ Research question is the place to start. Narrow. Relevant. Feasible. Start with your clinical experience. What do I want to know?
- ◆ Then think about study design. Is it feasible to study your question and what is the best way to answer the question? You may have to reformulate the question.

- ◆ Do background research on similar studies in your area of expertise and involving your research question. Note the methods.
- ◆ Bounce your ideas off more senior people.
- ◆ Consult a statistician!
- ◆ Simple and small. Set aside some time each day or every few days to work on it. Otherwise the urgent will crowd out the important.

Examples of projects that might be do-able for someone in a fellowship

- ◆ Systematic review: clinical question and then systematically identify relevant evidence and sort through it. There are directions for doing this and it takes effort to do it well but it IS the sort of thing that almost any motivated group of people could do. Effect of air pollution on ED admissions for headache
- ◆ Meta-analyses are related but more complex. Not a place to start.
- ◆ Survey studies: but even here there are many important considerations
- ◆ Quality improvement studies: before and after design (calling patients 2 days before appt) does this decrease no show rates. Asking patients to email their headache diary 2 days before appt – does this increase the proportion of patients with a completed headache diary at appts?

Examples of projects

- ◆ Analyze an existing database
 - Last year one of our fellows worked with Tobias Kurth to look at diabetes in women’s health study. Data sitting there but not yet analyzed.
 - There are many such sources of data: national studies that collect information on headache. Look at CDC website and investigate the National health Interview Survey, the National Health and Nutrition Examination Survey and others.
 - Electronic health records.
- ◆ Qualitative studies

What not to do

- ◆ Case reports
 - Very little chance of publication
 - Some exceptions: really groundbreaking cases – such as the person who had an aura while in the MRI scanner for another reason, got published in NEJM. Or a fascinating image associated with it: images in headache, even NEJM publishes short images or pictures.
- ◆ Small case series, e.g. I gave botox to 5 patients with cluster headache and they got better
- ◆ Audits with no intervention: no one really cares how many phone calls you get. They might care if you can design an intervention to reduce phone calls or identify associated factors that might help guide development of an intervention.

How to exploit resources

- ◆ Those of you who are at academic institutions should make it a point to identify resources available through your institution. In most cases they are far greater than you realize. Go to seminars, email people associated with the IRB, go to grand rounds, identify people at your institution doing the sort of research you might want to do, even if in another discipline. Most people flattered to be asked for advice and glad to help. We will talk about more formal mentorship later – but if you want more of their time and expertise than just a few casual chats then important to define those expectations and not go forward based on assumptions.

Some resources

- ◆ Access to pubmed –librarians are a great help for many things connected with research. If they hold seminars go to them. Ask them for help with searches.
- ◆ Electronic record data capture and databases – some of you are at institutions that have the capability to data-mine their administrative information. Network known as SHRINE that will involve a lot of institutions and make possible multicenter data mining efforts. Very powerful.
- ◆ REDCap
- ◆ Free statistical consultation or help.

Planning for publication

- ◆ Never too early to think about this. Most important thing is a good research question. Who will care?
- ◆ Aim for a realistic journal. Look at what they publish. No matter how great your paper it has to be in line with their aims. Sometimes a matter of luck or timing and can't be predicted with certainty. Look at instructions for authors. Prepublication inquiries.
- ◆ The paper itself must be well written. Spelling, grammar. Follow instructions for authors, word limits. Checklists for most kinds of research, even case reports. ALWAYS include a cover letter. It's your sales pitch.

What do editors want?

importance
originality
relevance to the audience
real potential to improve decision making
truth and transparency
clear writing that people want to read
excitement/ "wow" factor

Writing a paper

IMRaD

Introduction: why ask this research question?
Methods: what did I do?
Results: what did I find?
Discussion: what might it mean?

Writing a paper
The introduction

brief background for this audience
3-4 paragraphs only
what's known, and what's not, about your research question
don't bore readers, editors, reviewers
don't boast about how much you have read

the research question
state it clearly in the last paragraph of the introduction
say why it matters

Writing a paper
Methods

like a recipe
most important section for informed readers
describe:
inclusion and exclusion criteria
outcome measures
intervention or exposure
give references for standard methods
follow reporting guidelines as explained at
(<http://www.equator-network.org/>)
explain ethics issues

Writing a paper
Results

include basic descriptive data
text for story, tables for evidence, figures for highlights
confidence intervals
essential summary statistics
leave out non-essential tables and figures
don't start discussion here

How to please editors

choose the right journal
read the journal
follow advice to authors
submit online and follow instructions

How to please editors and peer reviewers

make sure the message is clear in the paper and abstract, not just in the cover letter

include extras eg STROBE checklist
cite (and send) any closely related papers
send previous peer review reports

Questions

- ◆ As an early career investigator, how do you chose a topic, particularly when you may be at an institution for a limited amount of time, and have to demonstrate grant funding potential?
- ◆ There is some luck involved here – getting involved in an area that is poised to take off. Tendency is to choose established topics or those that interest a mentor. Much to be said for that, esp as a way of gaining expertise. But very hard to sustain an interest in something you don't find fascinating. Have to strike a balance between studying only what interests you personally and studying what the world wants studied. Try to find an angle that interests you. In the end you must either research things the world wants researched OR convince the world that something needs to be researched. The most successful people do that – strike off in a NEW vein and mine it.
- ◆ So, my advice is take a look at upcoming trends. Right now comparative effectiveness research, decision aids, etc. Anything ACOs will need and anything that will help in appropriate care. Read the editorials in the major journals as a guide to what important and influential people are thinking. These topics are often signposted years ahead of time.

Questions

- ◆ At what point should you involve interdisciplinary collaborators (statisticians, other researchers) in the project, and how do you go about making these connections?
- ◆ As early as possible. This is probably the number one mistake of young investigators. Big ideas – too big – and do not test out ideas with experienced statisticians or researchers. Pilot studies very important.
