How to write an abstract, paper, grant application

Pushpa Narayanaswami

Associate Professor, Neurology

Beth Israel Deaconess Medical Center

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Big Picture that reviewers are looking for

- What does your project hope to accomplish?
- Do you and your team have the necessary expertise to accomplish the goals and objectives
  - i.e., can you do it?
- How will your results improve the field?
- How wide is the impact?
  - Does it address a highly prevalent disease?
  - Does it make a difference to a rare but serious disease?
- How will you disseminate and apply the results to change practice?

Starting Out

- Not easy to start from scratch
- Becomes easier with each grant to some extent
- Initially, aim for small grants by foundations
  - Develop infrastructure for a bigger project
  - Gather pilot data for a bigger future project
  - Perform exploratory analyses
  - Refine your clinical question/hypothesis

Preparation

- Read the request for applications (RFA) carefully
- A request for application (RFA) is a notice in which an organization announces that grant funding is available
  - outlines who is eligible to apply, what the expectations are, how to submit applications and how they are reviewed
  - Organizations typically have funding periods- once ot twice a year
    - Remember to review RFAs during these periods to find something applicable to your research

pcori Patient-Centered Outcomes Research Institute

BLOG NEWSROOM HELP CENTER SUBSCRIBE CAREERS CONTACT

ABOUT US RESEARCH & RESULTS TOPICS ENGAGEMENT FUNDING OPPORTUNITIES MEETINGS & EVENTS

Funding Opportunities > Broad PCORI Funding Announcements -- ...

Funding Opportunities

What & Who We Fund

What You Need To Know To Apply

Applicant Training

Merit Review Process

Broad PCORI Funding Announcements -- Cycle 1 2019 (for Addressing Disparities, Assessment of Options, Communication and Dissemination Research, Improving Healthcare Systems)

Letters of Intent were due Thursday, January 31, 2019, by 5:00 p.m. ET.

Those selected to submit a full application were notified by Tuesday, February 26, 2019

Beth Israel Deaconess Medical Center

HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Help Center

The Broad PCORI Funding Announcements (PFAs) seek investigator-initiated applications for patient-centered comparative clinical effectiveness research (CER) projects aligned with our priority areas for research. This PFA covers the following four priority areas: Addressing Disparities; Assessment of Prevention, Diagnosis, and Treatment Options; Communication and Dissemination Research, and Improving Health Systems. Applications should address needs of patients, caregivers, clinicians, and other healthcare stakeholders in making personalized clinical decisions across a wide range of conditions, populations, and treatments. Note: In general, PCORI will not cover costs for interventions that are being compared in the proposed study. (See Appendix 2 in the Application Guidelines for details.)

These broad areas encompass the patient-centered comparative clinical effectiveness research we support. As our work progresses and we engage with a broad range of patients, caregivers, clinicians, and other healthcare stakeholders, we may develop additional national priorities for research.

Our National Priorities for Research and Research Agenda is a framework to guide our funding of comparative clinical effectiveness research that will give patients and those who care for them the ability to make better-informed health decisions. The framework was developed by workgroups of our Board of Governors, members of our Methodology Committee, and staff. It was revised in response to public comments and accepted by the Board on May 21, 2012.

87 page PFA description and instructions

Plan the grant

- Clarify your hypothesis
- State your specific aims
- Some funding agencies want a letter of intent
  - Placeholder
  - “mini-grant”, full application invitation after LOI is reviewed
- Specific Aims page or LOI are often most difficult to write
  - Conveys the research and its impact and feasibility in one page

Plan the grant

- Your project should address important research within your expert area
  - Careful with concepts that cannot be supported with your preliminary data or published data from other investigators
- "High level": ask yourself what objectives you can reasonably achieve within the timeframe and budget of a grant

Plan the grant

- Start broadly with an emphasis on significance
  - then focus on generating experiments with clear endpoints reviewers can readily assess
- Limit your application to a few Specific Aims
  - common mistake is being overly ambitious
  - better to think small and propose less than to do the opposite

Iterative Process

- Propose a project in your area of expertise that:
  - Addresses a highly significant problem
  - Is innovative—can create new knowledge
- Outline draft Specific Aims and one or more hypotheses
  - PICOT questions are useful
- Outline experiments- study design, sample size, inclusion and exclusion criteria, outcome measures, statistical analysis
-

Iterative Process

- Assess feasibility
  - access to all needed resources and expertise.
- Make sure the project is not growing too big for your targeted time and budget
- Identify a potential funding institute that would funds projects in your research area
- If you hit a roadblock, go back to the failure point and revise your plans.

Your audience- reviewers: tell them:

- Your proposal has a strong potential to have a high impact on its field
- Your approach is logical and innovative
- Your institution will give you the support you need
- You and your collaborators are the people to do this research
- Testing your hypothesis is worth the organization's money

Follow Instructions

- Be aware of specific rules for your study design: human subjects, vertebrate animals, etc
- Address every point that the application asks you to address, clearly
- Specific aims page if required, then research strategy, with all required sub-headings, forms, etc.
- Add appendices where required (questionnaire used, laboratory procedures used)

Craft a Title

- Title is specific, indicating the research area and the goals of your project
- Stick to the character/letter limit
- Use as simple language as possible
- State the research problem and if possible your approach to studying it.
- Use appropriate keywords if applicable
  - If you are applying to an agency that funds CER, then the title should state comparative effectiveness

Write the grant

- Significance, Innovation, Approach
- Visual appeal: add figures, tables, graphs where you can
- Use bold, italics, underline judiciously
- Number separate sections, bold headings
- Follow rules regarding font size, margins
- Describe not just the aims of the study and how you will achieve them but also potential pitfalls and how you will get around them

Draft the budget

- For small pilot grants, this is relatively simple
- For large federal or other grants, grants administrators in your institution
  - They are busy- get them involved early
- Who is involved?
- What do they do?
- How long does it take?
- Submit on time!

Get input

- Get colleagues to read and critique the specific aims page or research strategy section
- When reviewers' scores and comments come in, if you are not funded, use them to improve the grant for the next submission to the same or a different agency
- You get better at it over time

Writing an Abstract and a Paper

Steven L. Lewis, MD

Chair, WFN Education Committee

Editor-in-Chief, Continuum: Lifelong Learning in Education

Regional SubSaharan Africa Course

Accra, Ghana September 2019

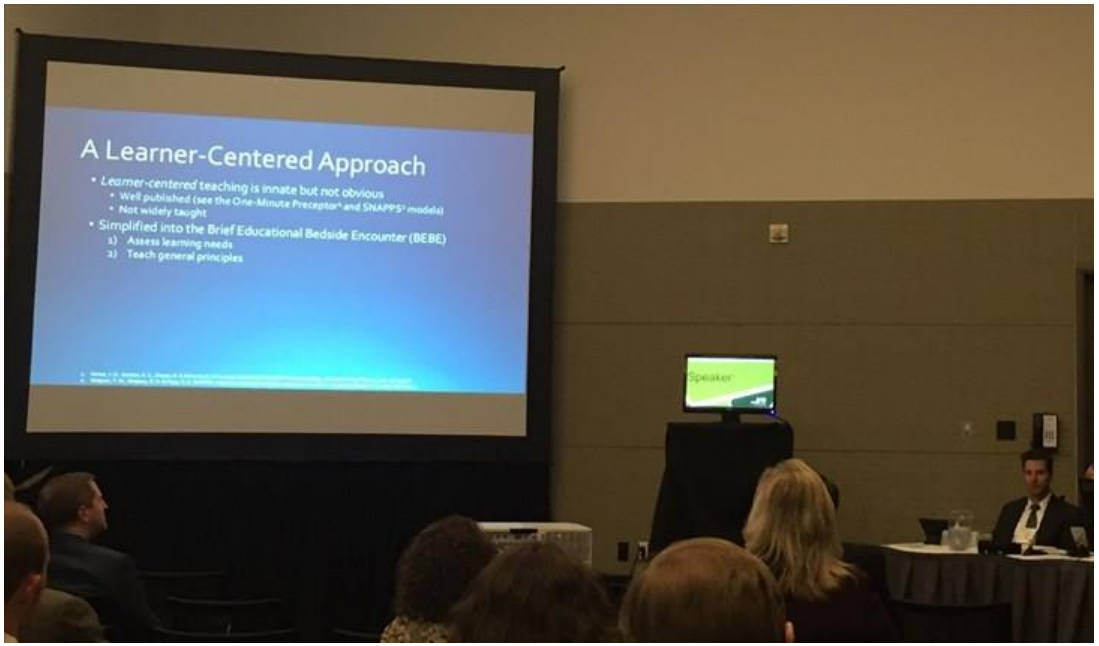
What is an Abstract?

1. A summary of a study or case or case series submitted to be presented at a national or international meeting
2. A summary of a paper that's being submitted to a journal

What is an Abstract?

1. **A summary of a study or case or case series submitted to be presented at a national or international meeting**
2. A summary of a paper that's being submitted to a journal

Two Kinds of Meeting Presentations



Keys to Writing an Abstract for a Meeting

- Follow the outline provided
- Choose the best subspecialty category
- Adhere to the word count
- Do not assume preexisting knowledge by the reviewer (besides being a neurologist)
- Have it proofread by a colleague

Keys to Writing an Abstract for a Meeting

- After reading the abstract, the reviewer should have a basic understanding of:
  - Why you did the study (or reported the case)
  - How you did the study (or found the cases)
  - What the implications are of your study results (or case)
  - (What further studies might be needed)

Keys to Writing an Abstract for a Meeting

- Remember: Most abstracts for meetings are accepted
- Only submit an abstract if your work is completed and ready to be reported
- And you plan on attending the meeting if accepted (which it will be!)

Writing a Paper

- Kinds of papers:
  - Research studies
  - Case reports, case series
  - Review articles
  - Letters to the editor
  - Others

Keys to Getting a Paper Accepted

- Choose the right journal for the right kind of paper
- Look at journals on line or on paper if available
- Many journals do not accept case reports
- Look at the journal you plan to submit to
- Review the instructions for authors and adhere to them

Paper Sections

- Introduction
- Materials and Methods
- Results
- Discussion

Summary of What a Paper Entails*

- Tell them what you're going to tell them
- Tell them
- Tell them what you told them

*Courtesy of Nina Schor, MD

Tables and Figures

- Needed for research studies to present data
- Tables and figures should tell the same story that the text does (each should be clear on their own)
- Make sure information is presented clearly and accurately and succinctly
- Make sure patient identifying information is not present on any image (eg, MRI).

Abstract for a conference poster/ presentation

- An abstract is a summary of the talk or poster you want to present at an academic conference (250 – 300 words)
- **Explain why your work is important**
  - set the context and pre-empt the question "So what?"
- **Describe the objective(s) of your work**
  - What are *you* adding to current knowledge?
- **Briefly explain the methods**
  - Unless the research is about methods, this should not be a major focus of your abstract
- **Succinctly state results, conclusions, and recommendations**
  - This is what most people want to know

A good abstract

- Factual, noncritical, informative account
- Use clear, grammatically accurate, exact, and stylistically uniform language
- Provide rationale or justification for the study
  - The purpose, need, and significance of the investigation (hypothesis or how the present work differs from previous work)
- State the objectives clearly
  - What do you want to do?
- Give a brief account of the methods used
- Outline results, conclusions and recommendations
- No references

PROMISE-MG: A Prospective Multicenter Observational Study of the Comparative Effectiveness of Treatments for Myasthenia Gravis (MG)

- Introduction. We report the development and status of an ongoing PCORI-sponsored prospective observational study of the comparative effectiveness of treatments for MG.
- Objectives. To compare the effectiveness of azathioprine and mycophenolate mofetil in immunosuppressive-naïve MG patients, and to compare the outcomes in patients who do or do not receive an adequate dose and duration of these agents.
- Methods: 220 adult patients with acquired autoimmune MG who have not previously received an immunosuppressive agent, corticosteroids or thymectomy, and who had their first study site visit after 1/1/17 will be treated and followed for 24 months according to their physician's standard of care at 20 North American sites. The primary patient-centered outcome measure of response to treatment is the MG-QOL15R.
- Results: The study began 12/1/17 and will conclude 11/30/20. Enrollment began 5/3/18.
- Conclusions: This study is designed to provide real world evidence to guide treatment selection for MG patients.

How to write a manuscript

- **I**ntroduction: 1 to 1.5 double spaced page
  - What is the disease/ condition you are writing about?
  - What is the question?
  - What did you/others do previously?
  - What did you do and why? (hypothesis, specific aims)
- **M**ethods: How did you do it?
  - Study design, sample size calculations, inclusion and exclusion criteria, intervention, comparator, outcome
- **R**esults: What did you find?
- **D**iscussion: What does it all mean?

How to write a manuscript

- Read (and download) instructions for authors
- Plan the category of article you want to submit
  - Full research reports, short communications, reviews, editorials , issues and opinions, case reports
- Review the requirements for each: abstract or not, word count limit, font and formatting, reference limit, instructions for tables, figures
- I usually
  - select the journal
  - Plan the article type at outset
  - Follow the format and add the title page first
  - Format references to journal specifications with a bibliography manager
  - Add tables and figures as I go
  - Keep an eye on word count
  - Final edits to word count limits

Parkinsonism and Related Disorders 30 (2016) 73–77

Contents lists available at ScienceDirect

Parkinsonism and Related Disorders

journal homepage: www.elsevier.com/locate/parkreldis

Short communication

Drooling in Parkinson's disease: A randomized controlled trial of incobotulinum toxin A and meta-analysis of Botulinum toxins

Pushpa Narayanaswami [a, *], Thomas Geisbush [a, 1], Andrew Tarulli [a, 2], Elizabeth Raynor [a], Shiva Gautam [b], Daniel Tarsy [a], Gary Gronseth [c]

[a] Department of Neurology, Beth Israel Deaconess Medical Center/Harvard Medical School, BIDMC, 330 Brookline Ave, Boston, MA 02215, USA
[b] Department of Medicine, Beth Israel Deaconess Medical Center/Harvard Medical School, BIDMC, 330 Brookline Ave, Boston, MA 02215, USA
[c] Department of Neurology, Kansas University Medical Center, 3901 Rainbow Blvd, Mail Stop 1033, Kansas City, KS 66160, USA

ARTICLE INFO

Article history:
Received 9 May 2016
Received in revised form
19 June 2016
Accepted 4 July 2016

Keywords:
Parkinson's disease
Botulinum toxin
Sialorrhea
Clinical trials randomized controlled
Clinical trials systematic reviews/meta-analysis

ABSTRACT

Introduction: Botulinum toxins are a therapeutic option for drooling in Parkinson's Disease (PD). The aims of this study were to: 1. evaluate the efficacy of incobotulinum toxin A for drooling in PD. 2. Perform a meta-analysis of studies of Botulinum toxins for drooling in PD.

Methods: 1. Primary study: Randomized, double blind, placebo controlled, cross over trial. Incobotulinum toxin (100 units) or saline was injected into the parotid (20 units) and submandibular (30 units) glands. Subjects returned monthly for three evaluations after each injection. Outcome measures were saliva weight and Drooling Frequency and Severity Scale. 2. Systematic review of literature, followed by inverse variance meta-analyses using random effects models.

Results: 1. Primary Study: Nine of 10 subjects completed both arms. There was no significant change in the primary outcome of saliva weight one month after injection in the treatment period compared to placebo period (mean difference, gm ± SD: −0.194 ± 0.61, range: −1.28 to 0.97, 95% CI −0.71 to 0.32). Secondary outcomes also did not change. 2. Meta-analysis of six studies demonstrated significant benefit of Botulinum toxin on functional outcomes (effect size, Cohen's d: −1.32, CI −1.86 to −0.78). The other studies used a higher dose of Botulinum toxin A into the parotid glands.

Conclusions: This study did not demonstrate efficacy of incobotulinum toxin A for drooling in PD, but lacked precision to exclude moderate benefit. The parotid/submandibular dose-ratio may have influenced results. Studies evaluating higher doses of incobotulinum toxin A into the parotid glands may be useful.

CONTEMPORARY ISSUES

Financial relationships between neurologists and industry

The 2015 Open Payments database

Aditi Ahlawat, MD, and Pushpa Narayanaswami, MD

Neurology® 2019;92:1006-1013. doi:10.1212/WNL.0000000000007640

Correspondence
Dr. Narayanaswami
pnarayan@
bidmc.harvard.edu

Abstract

Objective

To analyze research and nonresearch payments from the pharmaceutical and device industry to neurologists in 2015 using the Centers for Medicare and Medicaid Services (CMS) Open Payments Database.

Methods

In this retrospective database analysis, we computed the percentage of neurologists in the United States receiving payments, the median/mean payments per neurologist, payment categories, regional trends, and sponsors. We computed the number of practicing neurologists from the Association of American Medical Colleges State Physician Workforce Data Book, 2015.

Results

In 2015, approximately 96% of US neurologists received nonresearch payments totaling $93,920,993. The median payment per physician was $407. The highest proportion of neurologists (24%) received between $1,000 and $10,000. Food and beverage was the most frequent category (83% of the total number of payments). The highest amount was paid for serving as faculty/speaker for noncontinuing medical education activities (49%). The top sponsor of nonresearch payments was Teva Pharmaceuticals ($16,461,055; 17.5%). A total of 412 neurologists received $2,921,611 in research payments (median $1,132). Multiple sclerosis specialists received the largest proportion ($285,537; 9.7%). Daiichi Sankyo paid the largest amount in research payments ($826,029; 28%).

Conclusions

The Open Payments program was established to foster transparent disclosure of physician compensations from industry, in response to legislative and public concerns of the effect of conflicts of interest on practice, education, and research. The effects of this program remain unclear and studies of changes in prescribing practices, costs, and other outcomes are necessary. CMS should ensure that incorrect information can be rectified quickly and easily.

RELATED ARTICLE

Editorial
Relationships between neurologists and industry
NPub.org/9nilyb

- avoid unnecessary words: "however", "in the form of"
- Use active voice "we performed"
- State the limitations of your study
- Provide only data in the results- not your interpretation
- Do not speculate and over-emphasize the importance of your results