JOINT WORKSHOP ON SCIENTIFIC WRITING IN FIELD EPIDEMIOLOGY

Lecture 9: Abstract Last
Friday afternoon - 2014-02-28

Pakse, Champasak Province, P.D.R. Lao
International Field Epidemiology Training Programme
25 February - 1 March 2014

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SCIENTIFIC-WRITING WORKSHOP

Lecture 9:

Writing the Abstract Last

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The Abstract

Compose the Abstract last, not first; ensure it contains quantitative content, not promises

- Only after
  - Finishing the Discussion ...
  - … which was based on evidence in Results ...
  - … which was produced by Methods ...
  - … which was envisioned by Introduction ...
  - ... do you really know for sure what the Abstract should say
- Select and summarize the major highlights of each section to comprise the Abstract
- Every section merits at least a phrase or sentence in the Abstract.

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The Abstract - 2

Provides thumbnail sketch of paper

- Nothing more ...
  - No content in abstract not also in paper
- Nothing less ...
  - Every section of paper merits at least a phrase or a sentence in the Abstract

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The Abstract - 3

Service to readers

- Give specific, hard numbers and facts
  - Abstract may be all they have time to read
  - Abstract is available free to all on PubMED
    - Reader may not have free access to full paper
- If interested in details, they will read the main parts
- Do not "advertise" what the paper will say
  - Teases readers to buy the product
- Even complex research can be generalized for summary in the Abstract

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The Abstract - 4

Structured

- Structured headings
  - May be specified by some journals
- Otherwise
  - You may opt to apply your own, or no heading
    - "Introduction:"
    - "Methods:"
    - "Results:"
    - "Conclusions:"

Chloroquine/sulphadoxine-pyrimethamine for Gambian children with malaria: Transmission to mosquitoes of multidrug-resistant Plasmodium falciparum *

ABSTRACT

Objectives: In the Gambia, chloroquine (CQ) plus sulphadoxine-pyrimethamine (SP) is the first-line antimalarial treatment. *Plasmodium falciparum* parasites carrying mutations associated with resistance to each of these drugs were present in 2001 but did not cause a significant loss of therapeutic efficacy among children receiving the combination CQ/SP. We measured their effect on parasite transmission to *Anopheles gambiae* mosquitoes.

Design: We conducted a single-blind, randomised, controlled trial with follow-up over 28 d. Mosquito feeding experiments were carried out 7, 10, or 14 d after treatment.

Setting: The study took place in the town of Farafenni and surrounding villages in the Gambia.

Participants: Participants were 500 children aged 6 mo to 10 y with uncomplicated *P. falciparum* malaria.

Interventions: Children were randomised to receive CQ, SP, or CQ/SP.

Outcome Measures: Outcomes related to transmission were determined, including posttreatment gametocyte prevalence and density. Infectiousness was assessed by membrane-feeding *A. gambiae* mosquitoes with blood from 70 gametocyte-positive patients. Mutations at seven loci in four genes associated with drug resistance were measured pre- and posttreatment and in the midguts of infected mosquitoes.

Results: After SP treatment, the infectiousness of gametocytes was delayed, compared to the other two treatment groups, despite comparable gametocyte densities. Among bloodmeal gametocytes and the midguts of infected mosquitoes, the presence of the four-locus multidrug-resistant haplotype TYRG (consisting of mutations *pfcrt*-76T, *pfmdr*1-86Y, *pfdhfr*-59R, and *pfdhps*-437G) was associated with significantly higher oocyst burdens after treatment with the combination CQ/SP.

Conclusions: Parasites with a multidrug-resistant genotype had a substantial transmission advantage after CQ/SP treatment but did not have a significant impact on in vivo efficacy of this drug combination. Protocols that include measuring transmission endpoints as well as therapeutic outcomes may be a useful strategy when monitoring the evolution of drug resistance in malaria parasites in vivo.

* Hallett RL, *et al*. PLOS Clin Trial. 21 July 2006;1(3):e15

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The Abstract - 5

- Excellent Abstract (**Vaccine** 2010;28:3856-3864)
  - Each section of paper represented, in order
  - Has specific quantitative data!

I.
M.
R.
D.

ABSTRACT

A complete economic study was carried out to assess the economical impact of two rotavirus vaccine in Colombia. A Markov decision model was built to assess the health outcomes from birth to 24 months of age for three hypothetical cohorts: one unvaccinated, one vaccinated with 2 doses of Rotarix™ and the third, with 3 doses of Rotateq™. Without vaccination, the annual number of medical visits by diarrhea in children under 2 years would be 1,293,159 cases, with 105,378 medical visits and 470 deaths (IC95% 295–560) related to rotavirus. Without vaccination, rotavirus disease would cost around USD$8 millions including direct and indirect costs. Assuming a cost per dose of USD$7.5, average cost-effectiveness ratio would be USD$663/DALY with Rotarix and USD$1391 with Rotateq. When price per dose falls below USD$7 both vaccines yield a similar average cost-effectiveness ratio (USD$1063/DALY). Incremental cost-effectiveness ratio of Rotateq versus Rotarix was USD$7787/DALY. Cost-effectiveness ratio was influenced mainly by vaccine cost and cost per case hospitalized. Other programmatic aspects such as number of doses to be applied, likelihood of completing vaccination schedule with shorter versus longer schedules, and storage space within the chain cold should be considered to make decisions on which vaccine should be introduced. In conclusion, vaccinating against rotavirus in Colombia with either vaccine would be very cost effective. If cost per vaccinated children falls below USD$3 per dose vaccination would be cost saving.

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The Abstract - 6

- Unsatisfying Abstract (**Vaccine** 2006;24/S3:S178-186)
  - Economic model of vaccine usage (**HPV**)
  - Hard to discern surrogate phrases/sentence standing in for each section of paper
  - No data
  - Promises the paper will "highlight" things
    - What "different models" were "explored"?
    - What "model results are consistent" in predicting utility?

Abstract

The impact of human papillomavirus (HPV)-16/18 vaccination on the incidence of infection and disease can be explored in a range of different models. Here we explore the epidemiological and economic impact of vaccination where screening is absent and where it is well established. The importance for epidemiology of assumptions about naturally-acquired immunity and heterogeneity in risk behaviours are highlighted, as are the importance for health economic outcomes of vaccine costs and the ability to modify screening strategies. To date, model results are consistent in predicting a useful role for vaccine, but further epidemiological data are required to help test the validity of models.

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Exercise 7 – Write an Abstract from a Published Paper

- **Paper "A" > Workshop subgroup A**
  - **Phongmany** S, Rolain J-M, Phetsouvanh R, *et al*. Rickettsial infections and fever, Vientiane, Laos. Emerg Infect Dis 2006;12(2):256-262. (http://dx.doi.org/10.3201/eid1202.050900)
- **Paper "B" > Workshop subgroup B**
  - **Ly** KA, Ton TGN, Ngo QV, Vo TT, Fitzpatrick AL. Double burden: a cross-sectional survey assessing factors associated with underweight and overweight status in Danang, Vietnam. BMC Public Health 2013;13:35. (http://dx.doi.org/10.1186/1471-2458-13-35)
- **Paper "C" > Workshop subgroup C**
  - **Valarcher** J-F, Knowles NJ, Zakharov V, et al. Multiple origins of foot-and-mouth disease virus serotype Asia 1 outbreaks, 2003–2007. Emerg Infect Dis 2009;15(7):1046-1051. (http://dx.doi.org/10.3201/eid1507.081621)
- **Paper "D" > Workshop subgroup D**
  - **Wangchuk** S, Chinnawirotpisan P, Dorji T, Tobgay T, Dorji T, Yoon I-K, Fernandez S. Chikungunya fever outbreak, Bhutan, 2012. Emerg Infect Dis 2013;19(10):1681-1684. (http://dx.doi.org/10.3201/eid1910.130453)

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End of Exercise 7

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Lecture 10: Keep Editors and Reviewers Happy
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SCIENTIFIC-WRITING WORKSHOP

Lecture 10:

Keeping Editors and Reviewers Happy
-
Cover Letters for Invited Revisions

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Peer Review
Sympathize with reviewers.

Harper's Magazine, May 2011

[Critiques]
JEER REVIEW

From comments appended to manuscripts under consideration by reviewers for the journal Environmental Microbiology. *The journal publishes a selection of reviewer comments each year in its December issue.*

The biggest problem with this manuscript, which has nearly sucked the will to live out of me, is the terrible writing style.
More explanation is required; most readers will not know what "krigged" means.
The trees are crap, but, besides this, excellent work.
The Abstract describes results that I could not find in the Results section.
This is an interesting manuscript, not because of its results, but because of its complete ignorance of due scientific process.

"Hijacked" is a very dramatic word; maybe the bacteria are more polite with their biosynthesis.
I felt like I was teaching my grandmother to suck eggs. Accept with minor revision.
"Gentile" stream of nitrogen. It is not clear why this stream needs to be non-Jewish.
I like lipids, but they have their limitations, which appear to have been overlooked.
I recommend that this manuscript be rejected because I can't figure out what they did.
This was a possible candidate for the "worst use of statistics to substantiate a falsehood" award.
I'm not convinced that they know what they're talking about.
I nearly said reject, but then I recalled that I have a hangover and am feeling grumpy.
For the sake of time I have listed only a few (thirteen!) of the most glaring errors.
Alfachetoglutarate
The finding is not novel and the solution induces despair.

Peer Review - 2
Keep peer reviewers and editors happy

- Decision fatigue
  - It is stressful to make difficult decisions
    - *"Parole"* vs. *"no early release from prison"*
      - See Sunday *N.Y. Times Magazine*, 2011-08-21
        http://www.nytimes.com/2011/08/21/magazine/do-you-suffer-from-decision-fatigue.html?pagewanted=all
    - *"Guilty"* vs. *"not Guilty"* in trials
    - *"Accept"* vs. *"Reject"* in scientific publications
  - Many factors can affect decisions
    - Time of day, hunger, bad night's sleep, low brain/blood glucose, family problems, etc.
  - Make your revision cover letter (and the original submission) as painless as possible for reviewers who may be suffering decision fatigue

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Peer Review - 3
Keep peer reviewers and editors happy

- Reviewers usually volunteers
  - Hurried, tired, busy, distracted
  - Unconscious factors may be in effect
    - Physiological, biological, personal, professional
- Make their work as easy as possible
  - Format according to advice in prior lecture
    - Write for generalists (reviewers and readers)
      - Not necessarily familiar with your field's jargon
    - Label clearly lines, pages, figures, tables
    - Define clearly terms and abbreviations

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Handling Rejections
Rejection is not necessarily a negative judgment on your work of manuscript; if it is, use it as a learning experience

- Many journals try to maintain focus on their narrow subject matter
  - Your paper may be outside that scope
- Your paper may be duplicative
  - The 10th paper reporting a finding adds little to first nine
- If rejection was based on poor quality, take advantage of the reviewers' criticisms before submitting elsewhere

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Invitation to Revise
In cover letter, respond in detail to every reviewer comment

- Prepare cover letter for revised manuscript (ms.)
  - Copy word-for-word each reviewer's comments
    - Saves reviewers' and editor's time looking up past comments
  - Explain point-by-point how paper changed in response to each comment or criticism
    - Set off by indenting, font, and color to ease readability
  - Show a quote of the changed sentence or item
  - If disagreeing with reviewer, provide a polite rebuttal
- In the revised manuscript:
  - Highlight the changed items
    - Avoid *italics*, **boldfacing**, underlining to avoid accidental publication
  - Use continuous line numbering, not resetting each page

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Invitation to Revise - 2
In cover letter, respond in detail to every reviewer comment.

- Use formatting to set off comment from response
- Provide page and line numbers to find changes

3. The authors may wish to cite the paper listed below which showed differences in stability of measles vaccines after reconstitution for nebulization.

Dilraj A, Cutts FT, Bennett JV, Fernandez de Castro J, Cohen B, Coovadia HM. Persistence of measles antibody two years after revaccination by aerosol or subcutaneous routes.
Pediatr Infect Dis J. 2000 Dec;19(12):1211-3.
Thank you for the reference (now #38 in the manuscript, line 358) of which were not previously aware.

Specific comments

Page 2, line 9 and page 4, line 16, of former manuscript. Responder cells were PBMCs, not T lymphocytes; PBMCs also contain B cells. PBMCs contain B and T cells, so there is no evidence that T cell proliferation is enhanced.
We consider our assay is generally accepted as one for measuring T cell specific proliferation, but following the reviewer comment we have changed "T cell" for "PBMC" (page 2, line 8 and page 4, line 16).

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Invitation to Revise - 3
In cover letter, respond in detail to every reviewer comment.

- Examples
  - Quote the actual changed text or citation

7. Either in the introduction or the discussion, the authors should review the (supportable) hypothesis that NIDs tend to have a leveling influence on coverage across economic quintiles.

We have added the following sentence to the second paragraph of section 1:
"Supplementary immunization activities may serve to reduce these disparities, but they are limited to polio and measles vaccines and therefore have no benefit for other target diseases."

2. The IGA levels were surprisingly low. I wonder if there is a positive control for this or how well the assay has been worked up or validated. The authors should comment on this as I couldn't find a reference to this assay in their lab.
   - Both IgG and IgA assays have been previously validated in plasma and mucosal samples. Specificity of the isotype-specific anti-monkey IgG and IgA reagents were addressed in *Miller CJ, et al. J Virol. 1997, 71(3) p. 1911-21.* This reference is now included in the antibody section of the material and methods.

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Invitation to Revise - 4
In cover letter, respond in detail to every reviewer comment.

- One need not agree with every reviewer suggestion
  - Politely explain disagreement

1. Inclusion of the obtained titers from the vaccinated hamsters in an ELISA format would be informative. The immunoblots show the presence of reactivity, but do not show the level of reactivity. The possibility exists that the observed lack of protection is a function of relatively minor antibody titers being achieved from one primary immunization and one boost.
Titers by, e.g., ELISA would actually not be informative because they would be totally arbitrary, there being no correlate of immunity with which to compare them. We have used doses and regimes similar to those reported by others, as now emphasised (lines 188-190).

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Invitation to Revise - 5
In cover letter, respond in detail to every reviewer comment.

- Examples
  - Highlight new text in revised manuscript

393 vaccine. However, the rates of grade 3 local and general symptoms (including fever
394 >39°C) remained low in all groups and only one grade 3 unsolicited AE considered as
395 related to vaccination (transient inflammation of the armpit) was reported. Moreover,
396 neither pIMDs nor SAEs related to vaccination were reported. The clinical impact of
397 these observations remained limited and both vaccine dosages had clinically
398 acceptable reactogenicity and safety profiles.

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Invitation to Revise - 6
Include every answer to reviewer question in revised manuscript

- Readers of the publication may have the same questions as reviewers did
  - Ensure revision averts future questions by clarifying the matter

P18. Were there any CD8+ T cells induced in the mice?

Using flow cytometry assay we were unable to detect any CSP-specific CD8+ T cell responses in mice.

They answered the reviewer's question, but was the ms. changed to ensure readers will not have the same question?

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Invitation to Revise - 8
Example of ideal cover-letter formatting

Reviewer #3:

Line 271: States "pneumonia hospitalization rates were increasing prior to 2010". But this is not substantiated by figure 1, since the pneumonia rates fluctuated widely between 2007, 2008, and 2009.

Reviewer comment flush left

As the reviewer has pointed out and suggested, we changed the word "increasing" to "fluctuating" in lines 271-272, which now reads as follows:

"Childhood pneumonia hospitalization rates were fluctuating prior to 2010 and decreased significantly in the two years after PHiD-CV introduction."

Author response indented in different font and color

Quoting actual sentence in text font saves reviewer from scrolling all the way to that line in text to verify.

268 12.65% when pre (2002-09) and post vaccination introduction periods (2011-12) were
269 compared and adjusted for seasonality and secular-trend (p<0.001). On the other hand,
270 non-respiratory admission rates remained stable comparing both periods (p=0.39).
271 Childhood pneumonia hospitalization rates were fluctuating prior to 2010 and decreased
272 significantly in the two years after PH... ion. Conversely, the rate of non-

In actual text, use font color and/or highlighting to show revisions. Do not use boldface, underline, or italics, which may inadvertently get into print.

Invitation to Revise - 2
Sample cover letter opening statement

- For either
  - Original submission
  - Re-submitted revision

[Letterhead of Institution, if available and appropriate]

Corresponding Author firstname, lastname, degrees
Return Address
City, State, Postcode, Country
Telephone: +##.##.###.####
Fax: +##.##.###.####
email: aaaaaaa@bbbbbb.com

Month 201#

Aaaaaaa B. Ccccccccc, MD, PhD
Editor-in Chief, Journal of Ddddddd
Address 1, Address 2
City, State, Postcode, Country

Dear Dr. Ccccccccc:

I hereby submit the accompanying [initial/revised] manuscript entitled "[manuscript title]" for consideration for publication in the *Journal of Dddddddd*.

This paper reports a study [a brief explanation of the work and the significance of its findings in the field. No more than 4-to-5 sentences.]

This version of the manuscript has been read and approved by all its authors, has not previously been published, and is not currently under consideration by another journal. It will not be submitted elsewhere until the final decision by your journal regarding publication. [other declarations, as may be required by the journal, as specified in its instructions for authors.]

We thank in advance you, your other editors, and reviewers for the time and effort in evaluating this submission for publication.

Sincerely yours,
[signature]
Corresponding Author firstname, lastname, degrees

[If a revision, point-by-point response to reviewer comments follows immediately here:
"Point-by-point Response to Reviewer's Comments"]

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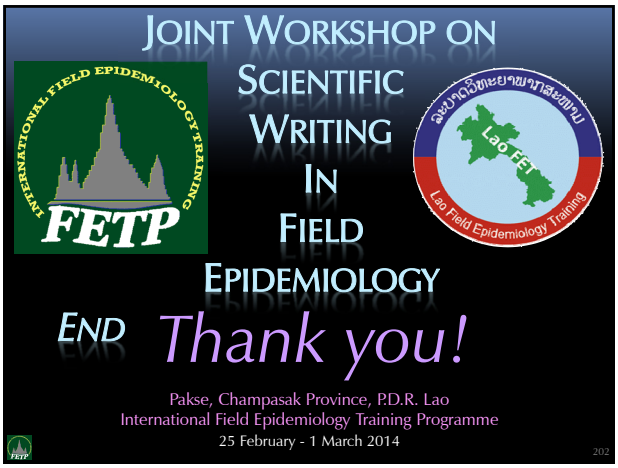
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Thank you!
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