# 85% of Health Research is Wasted: How to do great research, get it published, and improve health outcomes.

Trish Groves *reflects on the scandal of waste, error, and misconduct in clinical and public health research and describes a new effort to tackle research and publication integrity from both ends. This challenge matters everywhere, but it's specially urgent in low and middle income countries. The University of California, San Francisco and BMJ have teamed up to develop an eLearning programme for clinical and public health researchers called Research to Publication.*
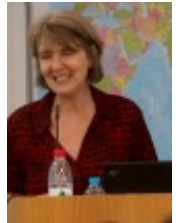
> *"What should we think about a doctor who uses the wrong treatment, either wilfully or through ignorance, or who uses the right treatment wrongly? Most people would agree that such behaviour was unprofessional, arguably unethical, and certainly unacceptable…What, then, should we think about researchers who use the wrong techniques (either wilfully or in ignorance), use the right techniques wrongly, misinterpret their results, report their results selectively, cite the literature selectively, and draw unjustified conclusions? We should be appalled. Yet numerous studies of the medical literature, in both general and specialist journals, have shown that all of the above phenomena are common…This is surely a scandal."*

This quote from statistics professor Doug Altman's editorial in The BMJ is more than 20 years old. Sadly, things haven't improved all that much, and we know that health research efforts and resources continue to be wasted in high and lower income countries alike. Extensive work by Doug Altman and others in the REWARD Alliance shows that about "85% of [health] research is wasted, usually because it asks the wrong questions, is badly designed, not published or poorly reported …many causes of this waste are simple problems that could easily be fixed, such as appropriate randomisation or blinding of a clinical trial." And then there's waste in publishing. Editors reject papers because research questions and methods are poor, and papers get retracted because they're unusable or untrustworthy.

This is why BMJ has spent 18 months, in collaboration with the University of California, San Francisco (UCSF), developing Research to Publication. This is a comprehensive eLearning programme on developing skills in clinical and public health research and getting studies published quickly, transparently, and ethically. It's aimed at early career researchers and their institutions worldwide, with a special focus on building research capabilities and supporting research integrity in low and middle income countries (LMICs).

Image credit: US Army Africa **U.S. Army medical researchers take part in World Malaria Day 2010 CC BY**

The concepts and topics in Research to Publication have had plenty of road testing, not least during more than a decade's outreach, teaching, and workshops run by The BMJ's editors with researchers in India, China, Africa as well as the global North. And The BMJ has a long history of driving improvements in research methodology and integrity. More recently, while Research to Publication was being developed, two free modules – from BMJ on publishing study protocols and from UCSF on an introduction to clinical trials – garnered good feedback from more than 1000 learners worldwide, most of them in LMICs thanks to links from the Global Health Network.

In LMICs there's a particularly urgent need to plan, conduct, and publish high quality health research. Nations need research evidence that is reliable and relevant enough to help them build universal health coverage (Sustainable Development Goal 3, target 8). A study on stroke done in Boston or Oxford may be largely irrelevant in Guangzhou, Mumbai, Sao Paulo, or Ibadan.

There are excellent, ongoing initiatives to build the capacity of health systems to do research, (such as WHO's TDR programme) and to use its outputs in developing policy (such as NICE International). Publication is an important link in that chain. Universities and medical schools use publication output to monitor the efficiency and effectiveness of their research efforts, to climb up the academic league tables, to grow internationally strong reputations, to attract funding and high calibre undergraduate and postgraduate students, and to build long term capacity to generate usable evidence and improve health. Some are making great strides but, even so, there's still a long way to go. For instance, Africa's share of annual research publications on health rose from 0.7% in 2000 to 1.3% in 2014, with just three countries – South Africa, Nigeria, and Kenya – contributing over half.

Why launch a programme that covers the integrity of publishing as well as of research? Well, analyses of retractions from MEDLINE confirm high rates of error and poor science, but also reveal alarming high rates of plagiarism and other publication misconduct. Some have shown that publications retracted for plagiarism are significantly more likely to have a first author from a low income than a high income country. None of this is surprising, when early career researchers worldwide (but increasingly in low and middle income countries) are under intense and often counterproductive pressure to get something – anything – published.

Medical writing courses and tips abound, but the key scientific and ethical requirements for successful publication

are a mystery to many authors. They need, but rarely find in journal instructions, clear answers to questions like: Why do medical journals reject clinical trials that were not pre-registered? How can PhD theses be turned into papers that journals will want to publish? Do study results have to be strongly positive to get published? Why shouldn't the professor's name be on the paper? How do editors make decisions? Are they biased against authors from far flung places? What's the best journal for this paper? Why should I care about open access?

Research to Publication covers – in six courses with 48 modules lasting more than 200 hours – everything from developing good research questions and the best and most ethical study designs (given local circumstances), through to reporting studies accurately and understanding what editors and peer reviewers are really looking for. Each module comprises a presentation of 30-60 minutes with video or narration that the learner can run at their own pace, along with up to 3 hours' worth of further reading and exercises. All materials include real examples, including policies and case studies about doing and publishing research in low and middle income countries.

So Research to Publication is far more than a medical writing course. It brings together insights from senior decision-making editors and senior academics in a form that's ideal for blended learning and offers universities the option of integration into a Master's programme. On completion of modules learners receive BMJ/UCSF certificates, and institutions can provide local accreditation too. To ensure that the programme is sustainable, it's available through an affordable institutional, as well as a personal, subscription model.

As Research to Publication rolls out, BMJ will be monitoring publication rates from learners' institutions and countries, and will encourage alumni to give feedback while learning and, later, when they successfully publish their research.

This is a longer version of an editorial published on The BMJ today: Research to Publication e-learning / DOI: 10.1136/bmj.i796

Note: This article gives the views of the author, and not the position of the LSE Impact blog, nor of the London School of Economics. Please review our Comments Policy *if you have any concerns on posting a comment below.*

About the Author

Trish Groves *trained in medicine and psychiatry and is currently Head of Research at BMJ, Editor-in-chief BMJ Open, and editorial lead for Research to Publication. She gets most of her news from Twitter. Follow Trish @trished and Research to Publication @BMJRtoP*