An insiders' guide to getting published

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Competing interests

I have two jobs. One is for an Irish medical education company called IHEED the other is as an Associate Editor for the BMJ where I am paid to select articles to publish. Nobody else pays me.

The Fletcher family motto is “recta pete” or “seek what is right” so I’m inclined to do that even when it lands me in trouble.

What I aim to cover

- How medical journals select what research to publish
- How to increase your chances of publication
- Changes in medical publishing

How do journals decide what to publish?

- Who decides what is published in a journal?
- Who bears the responsibility for decisions to publish (when something goes wrong)?
- Who can buy or sell the journal or close it down?

Key considerations

- The scope of the journal
- The mission statement (or objectives or aims)
- Funding
- The publishing model

What do journals want to do?

- Publish ground breaking research
- Promote debate
- Entertain readers
- Influence clinical practice and policy making
- Add value

- Make money
- Increase their impact factor
- Showcase the institution's work
- Keep members in touch
- Promote community values and norms

Peer reviewed journals

- Editorially independent
- “Peer reviewed”

Are there other types of “journal”?

- Fake journals (often fee for publishing)
- Puppet journals (Owned edited and published by a single organisation with a strong interest in what is published)
- Databases of published works (Cochrane Database)
- Public relations newsletters dressed up (Small societies and associations)

International Committee of Medical Journal Editors (ICMJE) definition of peer review

"Peer review is the critical assessment of manuscripts submitted to journals by experts who are usually not part of the editorial staff.

Because unbiased, independent, critical assessment is an intrinsic part of all scholarly work, including scientific research, peer review is an important extension of the scientific process."

http://www.icmje.org/recommendations/browse/roles-and-responsibilities/responsibilities-in-the-submission-and-peer-peview-process.html

Editors' role in peer review

"A peer-reviewed journal is under no obligation to send submitted manuscripts for review, and under no obligation to follow reviewer recommendations, favorable or negative.

The editor of a journal is ultimately responsible for the selection of all its content, and editorial decisions may be informed by issues unrelated to the quality of a manuscript, such as suitability for the journal. An editor can reject any article at any time before publication, including after acceptance if concerns arise about the integrity of the work." ICMJE recommendations

http://www.icmje.org/recommendations/browse/roles-and-responsibilities/responsibilities-in-the-submission-and-peer-peview-process.html

Evidence on peer review's effectiveness

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2007 Cochrane review on editorial peer review

"...little empirical evidence is available to support the use of editorial peer review as a mechanism to ensure quality of biomedical research. However, the methodological problems in studying peer review are many and complex. At present, the absence of evidence on efficacy and effectiveness cannot be interpreted as evidence of their absence.
A large, well-funded programme of research on the effects of editorial peer review should be urgently launched."

Jefferson T, Rudin M, Brodney Folse S, Davidoff F. Editorial peer review for improving the quality of reports of biomedical studies. Cochrane Database of Systematic Reviews 2007, Issue 2. Art. No.: MR000016. DOI: 10.1002/14651858.MR000016.pub3.

3 decades of research on peer review

"The credibility of journals depends on robust quality assurance mechanisms. This requires continued and more rigorous testing of the operating characteristics of peer review and publication to make sure that all the labor and costs are justified. Large multijournal (and multifunder) controlled trials, as were done admirably by the *Nature* and PLOS journals, of at least 2 sorts of peer review (before, during, and after publication) are still needed. Previous experience testing blinding in peer review shows that this will be expensive and time-consuming."

Rennie D, Flanagin A. Three Decades of Peer Review Congresses. *JAMA.* 2018;319(4):350–353. doi:10.1001/jama.2017.20606

Does peer review improve research reporting? I

Design Retrospective before and after study.
Setting BioMed Central series medical journals.
Sample 93 primary reports of randomised trials published in *BMC*-series medical journals in 2012.
Main outcome measures Changes to the reporting of methodological aspects of randomised trials in manuscripts after peer review, based on the CONSORT checklist, corresponding peer reviewer reports, the type of changes requested, and the extent to which authors adhered to these requests.

Hopewell S, Collins GS, Boutron I, YuLy M, Cook J, Shanyinde M et al. Impact of peer review on reports of randomised trials published in open peer review journals: retrospective before and after study. *BMJ* 2014;349 :g4145

Does peer review improve research reporting? II

Results ...Most changes requested by peer reviewers had a positive impact on the reporting of the final manuscript—for example, adding or clarifying randomisation and blinding (n=27), sample size (n=15), primary and secondary outcomes (n=16), results for primary or secondary outcomes (n=14), and toning down conclusions to reflect the results (n=27).

Some changes requested by peer reviewers, however, had a negative impact eg adding additional unplanned analyses (n=15).

Hopewell S et al. *BMJ* 2014;349 :g4145

Biases in peer review

Peer review research has identified many potential biases:

Author-related
prestige (author/institution)
gender
geography
Paper-related
positive results
English language
Reviewer-related
competing interests
personal issues

Closed review:

- double blind
- single blind

 - authors masked
 - reviewers masked

Open peer review: different models

Open identities: Authors and reviewers aware of each other's identity

Open reports: Review reports published alongside articles eg The BMJ, BMJ Open

Open participation: Community can contribute to review process eg Science Open

Open interaction: Direct reciprocal discussion between author(s) and reviewers, and/or between reviewers, allowed and encouraged eg eLife, BMJ Open Science

Open pre-review manuscripts: Manuscripts made immediately available (e.g., via pre-print servers like arXiv) in advance of any formal peer review procedures

Open final-version commenting: Review or commenting on final "version of record" publications eg F1000Research

Open platforms ("decoupled review"): Review is facilitated by a different organizational entity than the venue of publication eg PubPeer, PubMedCommons

Ross-Hellauer T. What is open peer review? A systematic review [version 2; referees: 4 approved]. *F1000Research* 2017, 6:588 (doi: 10.12688/f1000research.11369.2) https://f1000research.com/articles/6-588/v2

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What does The BMJ publish?

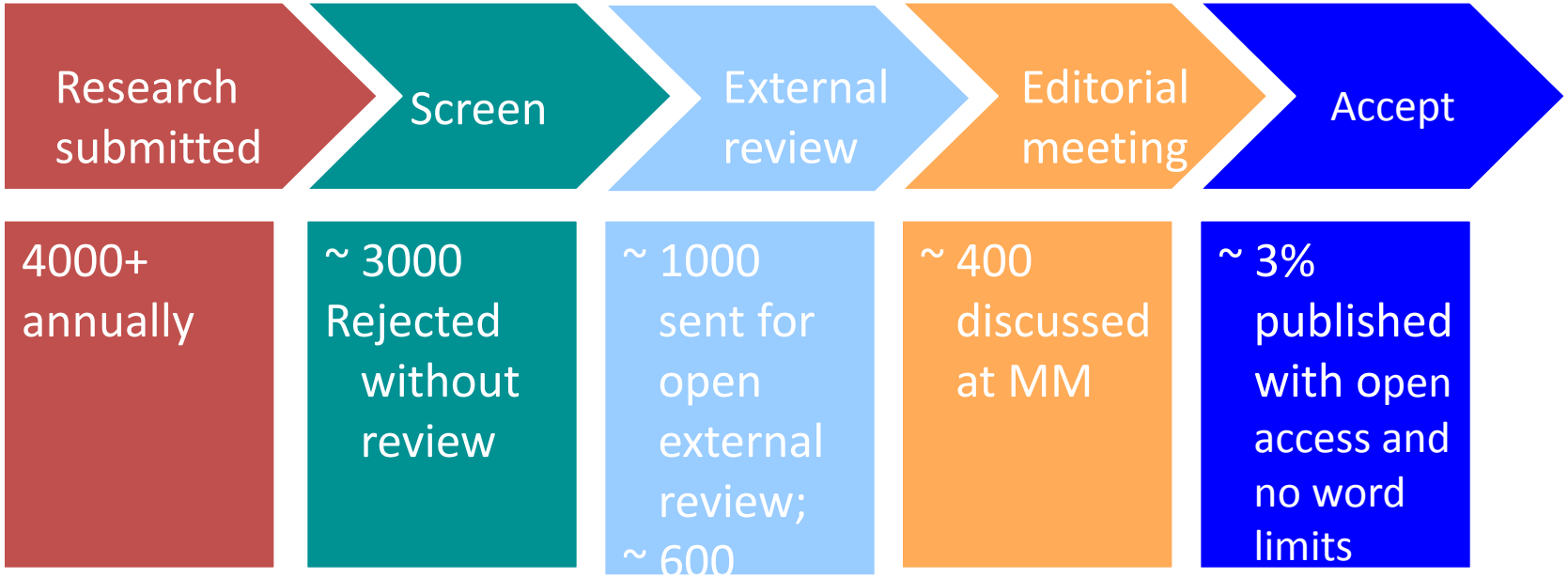
"The BMJ's mission is to lead the debate on health, and to engage, inform, and stimulate doctors, researchers and other health professionals in ways that will improve outcomes for patients. We aim to help doctors to make better decisions."

- Research
- Education
- News and views
- Analysis

Research priorities at The BMJ

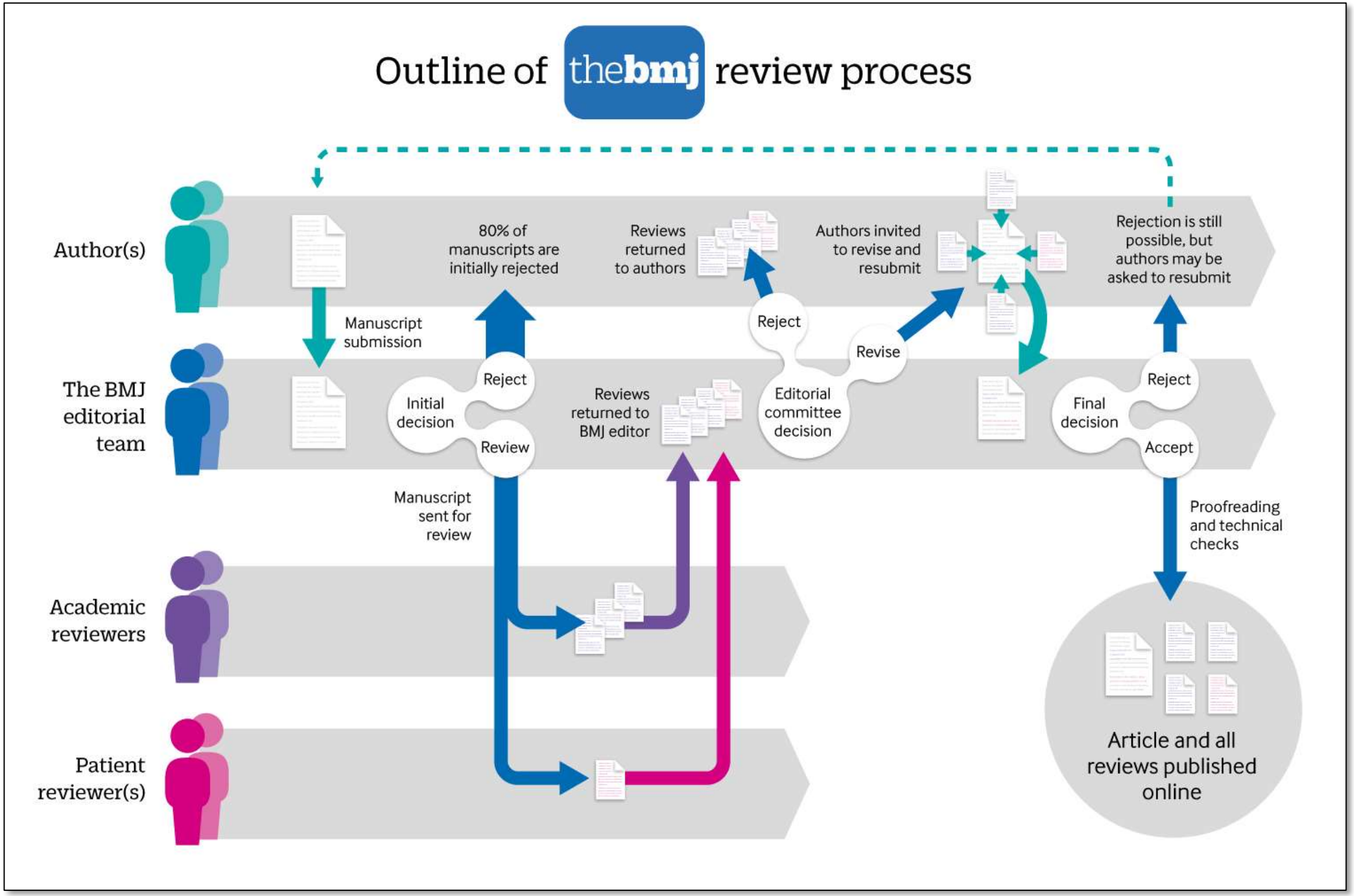
- Systematic reviews and meta-analyses of risk factors, outcomes and treatments
- Clinical trials that compare the effectiveness and safety of drugs, devices, or other interventions that are tested against the optimal current treatment at clinically valid doses.
- Studies of the risks, advantages and properties of diagnostic tests
- Clinical and population based observational studies that look at the causes, prognosis, risks and safety of common diseases or therapies
- Clinical observation studies that provide support for inferences applicable to clinical practice or healthcare policy

How the BMJ deals with submissions



What the BMJ editors do

- “Screening” step: *senior editor (50% rejected)*
- Read and review (about half proceed to meeting)
- Manuscript meetings (about half accepted)
- Our criteria: RIOT
  - Relevant
  - Important
  - Original
  - True


Outline of thebmj review process
Author(s)
The BMJ editorial team
Academic reviewers
Patient reviewer(s)
Manuscript submission
Initial decision
Reject
Review
80% of manuscripts are initially rejected
Manuscript sent for review
Reviews returned to BMJ editor
Reviews returned to authors
Editorial committee decision
Reject
Revise
Authors invited to revise and resubmit
Final decision
Reject
Accept
Rejection is still possible, but authors may be asked to resubmit
Proofreading and technical checks
Article and all reviews published online

Why do we reject research?

Reasons for rejection: clinical/methodological

Research question

- Lacks novelty, interest/relevance to journal audience

Outcomes

- Not sufficiently clinical or important to patients

Study design

- is not the best possible choice to answer the study question, so the results may be unreliable
- the population is not representative/generalisable to a wider setting or the sample is small/biased/ lacks sufficient power to determine effect
- Incomplete or inappropriate statistics

Study Answer

- is unlikely to impact on practice, policy or research
- over interpretation of results

Reasons for rejection: Ethical/transparency

Transparency

- unregistered or retrospectively registered trials
- lack of commitment to share anonymised patient level data upon reasonable request.

Ethics

- Not approved by by a formally constituted research ethics committee or, in the USA, an institutional review board.

Writing papers that editors will want to publish*

*A BMJ perspective

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Editors look for clear, important, relevant, new research questions

Journals want questions that meet the FINER criteria:

Feasible - answerable with available resources

Interesting - not only to the investigators

Novel – confirms/refutes/extends knowledge, fills gap

Ethical - likely to be approved by ethics committee/IRB

Relevant- could influence practice, policy, more studies

Introduction: Why this research Q?

- target background to journal audience
- 3-4 paragraphs only - keep it short to keep readers interested
- outline what's known/not known on research question – citing systematic reviews where possible
- don't bore readers, editors, reviewers
- don't cram in your whole literature review
- spell out why it was important to ask the RQ and why the answer matters

Methods: what exactly did you do?

- most important section for informed readers
- provide enough detail to ensure the study could be reproduced and include references for lab/stats methods
- describe PECO/PICO elements of the study
- follow reporting guidelines eg CONSORT Statement
- describe measures to ensure ethical conduct
- provide trial registration details (and study protocol if required)

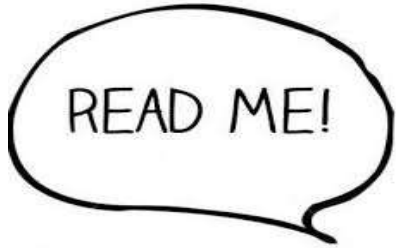
Results: what did you find?

- report results fully & honestly, as pre-specified according to registration if the study is a trial
- text (story), tables (evidence), figs (highlights)
- report primary outcomes first
- give effect sizes and confidence intervals for main results
- report essential summary statistics eg NNT, ARR
- share data, code, and/or metadata if required

Discussion: what does it mean and why does it matter?

- state principal findings
- highlight strengths & weaknesses of the study and strengths & weaknesses in relation to other studies (especially systematic reviews), & key differences
- consider possible mechanisms & explanations for findings
- outline potential implications for clinicians or policymakers
- be cautious not to draw conclusions that are not supported by the data
- flag unanswered questions and future research priorities

Abstract: why should anyone read your study?



- may be the only part of the paper that is accessible to all
- clarity will encourage selection and reading of the full paper
- editors may screen and reject articles by reading only abstract
- peer reviewers are often invited with a link only to abstract
- all authors must approve it
- Journals may require trial registration to be documented in the abstract
- use reporting guidelines eg CONSORT or PRISMA for abstracts

Tips for submission

- check journal policies and advice to authors before submission, use the cover letter to convey the importance of the study question, what makes this study novel, what it adds, how it will change practice/policy and whether previous work on the topic has been well cited and accessed
- be brief, clear and evidence based and write in plain English.
- ensure all authors have seen and approved the draft before submission
- include all required statements and supplementary files eg copyright, conflicts of interest, guarantors, protocol, checklist, registration.
- Reach out to editors before submission if you have specific queries
- Tell us if your paper has been considered and rejected from elsewhere, provide reviews if you can.

Draw up a list of journals

- Decide at the start the order in which you are going to try
- Start at the top and work down. This avoids discouragement or getting stuck in lengthy appeals

Responding to peer review

- provide a point by point response
- don’t have to agree, but state why you disagree and justify decision not to make amendments or take suggestions on board
- bear in mind who will read the revision letter

Appeals

- mistakes and errors of judgement happen
- one appeal allowed per article at The BMJ
- provide a clear rebuttal letter with detailed responses to reasons given for rejection
- appeals on decisions made at manuscript meeting are all seen by the EIC

Other article types

- Getting non-research articles published in good journal can be easier (or harder!)
- Harder: Editorials, reviews
- Easier
  - Ten Minute Consultation
  - Easily missed
  - Endgames case review, spot diagnoses
  - Minerva picture
  - Letters

The changing face of journals - Follow the money

- Publishing was once very profitable and relatively easy money
    - Advertising
    - Library subscriptions
- These have fallen by 50% or more in many journals in the last decade while publishing costs have increased
- MJA, CMAJ, Norwegian MJ have all fired editors in last five years

- Smaller journals under increasing pressure
    - Member subscriptions
    - Publishing fees

- Open access publishing

The change to magazine format

50s

60s

70s

80s

90s

00s

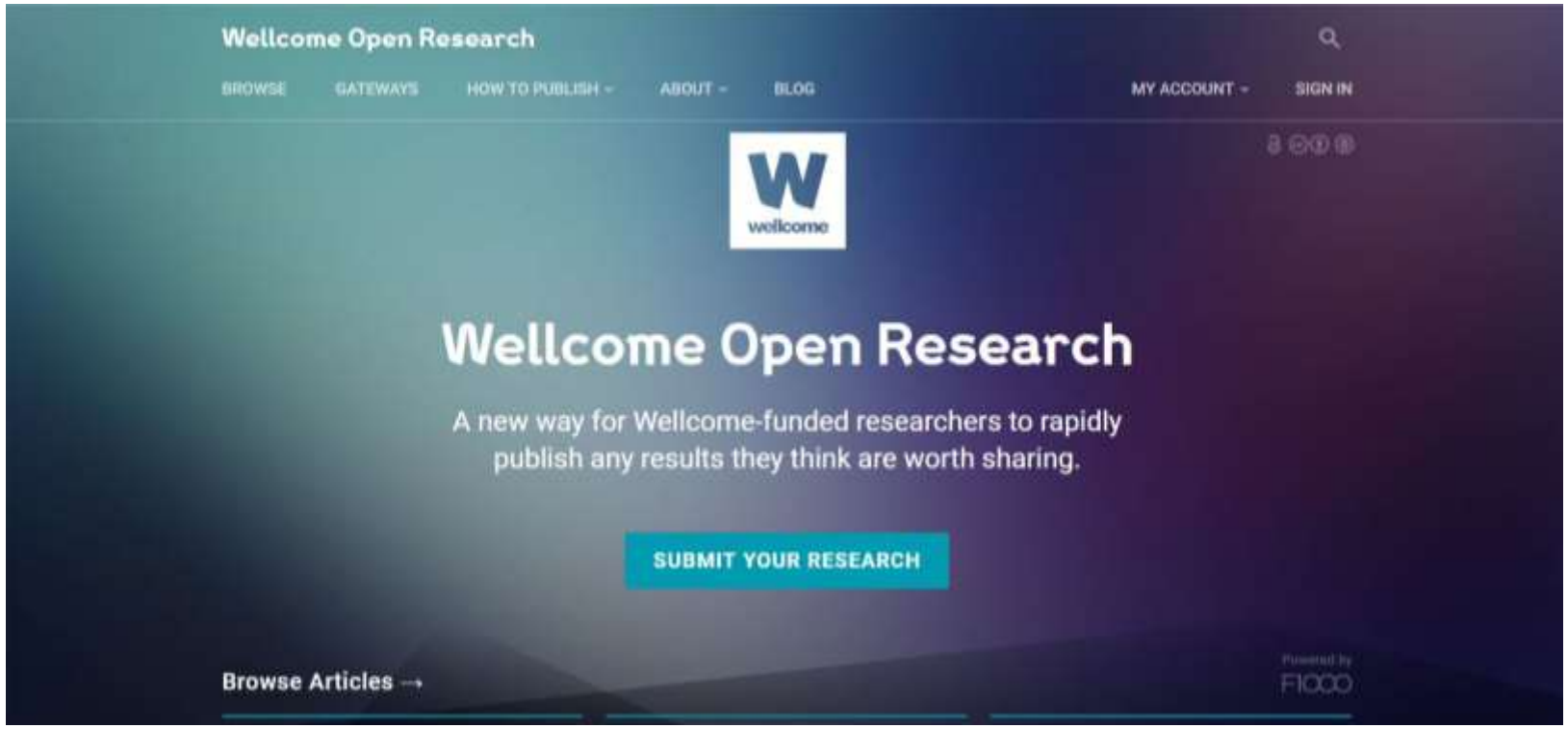
10s

19

Changing character of journals

- Magazine content: readable, reliable, interesting
    - Expensive to produce
    - Reader pays

- Database publishing: full reporting, plenty of detail, free access, for reference only
    - Bulk publishing
    - Funder / researcher pays



Open Research platforms:

Subscriber pays ->
author pays ->
funder pays ->
funder publishes ->
academia ditches IF ->
who needs journals?

F1000 announces partnership with the Bill & Melinda Gates Foundation

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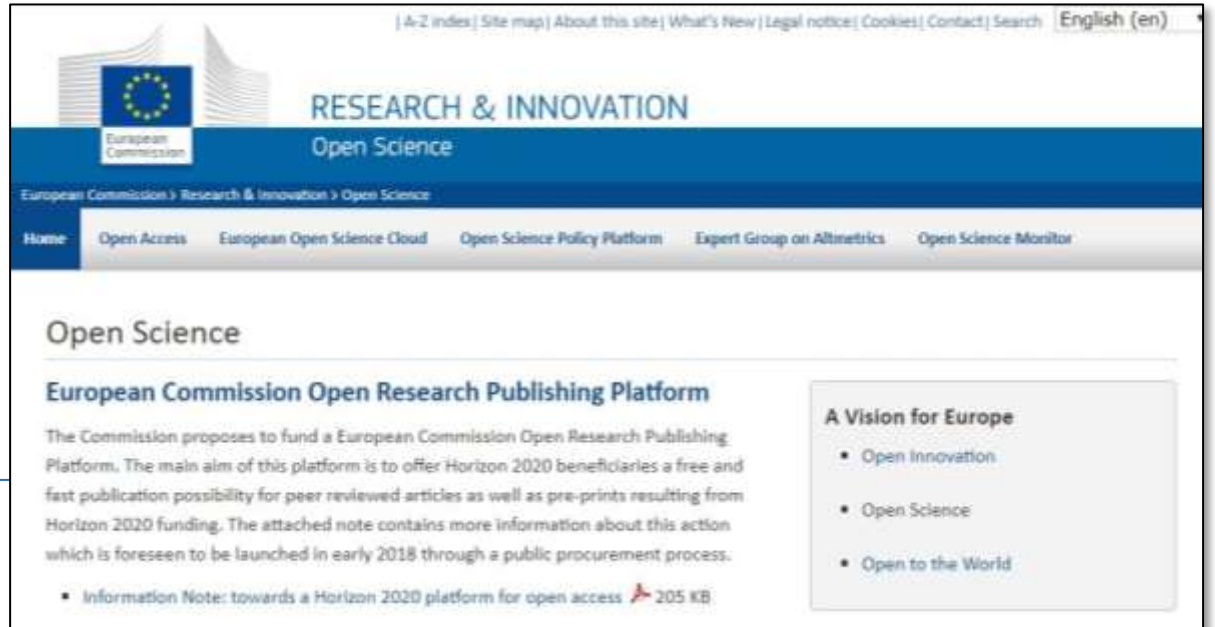

VIEWPOINT

Medical Preprints—A Debate Worth Having

David M. Maslove, MD, MS
Faculty of Health Sciences, Queen's University, Kingston, Ontario, Canada; and Kingston Health Sciences Centre, Kingston, Ontario, Canada.

Following a similar movement in other academic fields, most notably the physical sciences and computing, biomedical researchers are increasingly exploring the use of preprint servers to rapidly disseminate their scholarly output.[1-3] Preprint servers consist of online repositories that make scientific manuscripts available to view and cite, without prior external peer review. The largest and most popular site for preprints, arXiv.org, began accepting papers in 1991, and now contains more than 1.3 million articles from the physical sciences, with nearly 1 billion downloads as of August 2017.[4] More recently, bioRxiv.org has begun to offer preprint services for the biological sciences and is growing rapidly, with nearly 17 000 preprints posted since its inception in 2013, most of them in the last year.[5]

While some preprints may be or will eventually may be lower in the clinical sciences than the physical sciences, making the former more accessible. Patients may be exposed to early, unsubstantiated claims relevant to their conditions, while lacking the necessary context in which to interpret these. The results from more provocative manuscripts could be reported by the media, with little regard to the preliminary nature of the findings. Even for the most seasoned scientist, vigilant mindfulness of the preliminary nature of these manuscripts could prove elusive; once read, such manuscripts may be difficult to later discount in the light of newer findings, much as a jury may find it difficult to disregard inadmissible evidence heard in court, even when instructed by a judge to do so.

Second, the manuscripts found on preprint servers look very much like those that might be found in peer-reviewed journals, with similar formatting, headings, and

Sharing science at today's pace: an experience with preprints

July 11, 2018

The use of preprints in medical research is past-due, says Rohan Khera

The BMJ has just published our peer reviewed research paper addressing the population impact of a recent overhaul of the clinical guidelines for hypertension in the United States and China. The study is important for my coauthors and me, not only as a scientific contribution, but because it was our first experience of using a preprint platform. Preprints represent an avenue for investigators to share their completed research openly with the community for critique and feedback before its vetting by the peer review process at journals and their eventual publication as manuscripts. Their use has been common in several areas of science, but has only recently gained visibility in biomedical and clinical research. Since the use of preprints is uncommon for studies published in major medical journals, we share our experience of the practical aspects of such an approach.

Editorial

Clinical Orthopaedics and Related Research, *The Bone & Joint Journal*, *The Journal of Orthopaedic Research*, and *The Journal of Bone and Joint Surgery* Will Not Accept Clinical Research Manuscripts Previously Posted to Preprint Servers

Leopold, Seth S., MD; Haddad, Fares S., FRCS(Orth); Sandell, Linda J., PhD; Swiontkowski, Marc, MD

Clinical Orthopaedics and Related Research®: January 2019 - Volume 477 - Issue 1 - p 1–4
doi: 10.1097/CORR.0000000000000565
REGULAR FEATURES

OPEN

- May be a self-serving move by individuals with secondary-gain incentives and by those whose work is unlikely to withstand serious scrutiny
- Seems unlikely that the kind of prepublication dialogue that has taken place in other academic disciplines will take place in medicine or surgery because the incentives are very different
- May lead to conflicting, versions of the “same” content being available online at the same time, which can cause confusion and harm
- For the vast majority of medical and surgical) diagnoses, a few months of review of a study’s findings do not make a difference; the pace of discovery and dissemination generally is adequate
- There are better ways to mitigate positive-outcome bias and promote transparency

Post publication peer review
Not as much as you might expect

Authors should respond promptly to substantive queries and requests from the editors or readers after publication, particularly regarding the integrity of the published article

Concerns may be raised by editors or readers through:

- letters to the editor
- complaints to the editor, the publisher, or via the Committee on Publication Ethics (COPE)
- media or social media
- other forums eg PubMed Commons

What we covered

- How medical journals select what research to publish
- How to increase your chances of publication
- Changes in medical publishing

Thank you

Questions?

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