

Publishing Research and Quality Improvement Projects as a Community Health- System Pharmacist

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OhioHealth | Columbus, OH | 2022

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Objectives

Identify Identify regulatory processes and guidelines for publishing research and quality improvement studies

Review Review the publication process and associated professional standards

Discuss Discuss strategies and institutional resources for overcoming barriers to publishing scholarly work

Why publish?



Data
Sharing



Visibility



Credit



Recognition



Peer
Review



Professional
Service

<https://researchforevidence.fhi360.org/practitioners-publish-research-journals>

<https://anchor.fm/s/54831478/podcast/play/49807992/https%3A%2F%2Fd3ctxlq1ktw2nl.cloudfront.net%2Fstaging%2F2022-2-29%2F256705285-44100-2-ce8bfeaa5161f.m4a>

<https://anchor.fm/s/54831478/podcast/play/51193982/https%3A%2F%2Fd3ctxlq1ktw2nl.cloudfront.net%2Fstaging%2F2022-3-27%2F262158198-44100-2-97a4cc78cb2eb.m4a>

https://mcdn.podbean.com/mf/web/bhieb6/VerifiedRx-PracticaltipsforPublishing_Final.mp3

What makes a project publishable?

FINER criteria

Is it replicable?

Is it worth replicating?

Who stands to benefit?

✗ When NOT to Publish ✗

- Insufficient methods
 - Not aligned with professional standards
 - Not replicable
 - No control for major confounders
 - Untrustworthy data
- No/limited novelty
 - Inappropriate or unnecessary comparison
 - Research question already answered
- No/limited external application

Do I need IRB approval to publish?

- Research vs quality improvement (QI) IRB processes

Research vs QI: Largely a matter of intention


Research

- Add to literature
- Hypothesis-testing in human subjects
- Prospective IRB approval
- Full IRB protocol submission

Quality Improvement

- Improve a process
- Applying best practices
- Prospective IRB review if intention to disseminate, *not required* to conduct internally
- Brief application for QI determination

Do I need IRB approval to publish?

- YES (in some form or another)
- [Research vs QI IRB processes](#)
- OHRI is here to help!
 - Full out an [IRP](#) and [submit a ticket](#)
 - Follow this guide on eSource 
- Bottom line: conducting research and presenting research/QI projects outside the organization require IRB review

Pharmacy Resident Resources

- OhioHealth Residency Homepage
- System Pharmacy Residency Manual
- Research
 - OHRI Academic Resource Resident Orientation
 - Stats Education
 - Preparing for First Meeting with Biostatistician
 - Overview of Biostatistics used in Clinical Research
 - Stats Lecture not for CE Credit
 - Stats Lecture Handout 1
 - Stats Lecture Handout 2
- Residency Orientation
- Pharmacy Resident Status Report
- Research Project Tracker
- Pitch Panel Template
- IRP Template
- Publication Manuscript Template Blank
- Additional Research Reading Materials
 - Developing Your Research (PICO + FINER)
- [Guide to Pursuing Research and QI Data Collection](#)
- Scientific Writing Presentation Primer
- Continuing Education
 - Guidance for Application & Presentation of CPE Activity

Does it
cost
money to
publish?



Traditional Journals vs. Open Access Journals

Traditional

- No required cost to authors
- Costs covered by subscription and/or advertising
- May be more trustworthy and universally accepted
- No one likes paywalls
- Journal usually retains copyright

Open Access

- Usually \$300-\$3000 per article
- Costs usually paid by authors, sometimes gov't
- Perceived as less legitimate by some
- Increased access increases readers, may increase citations
- Authors may retain rights

Other Journal Options

Hybrid – most traditional journals now offering open access option

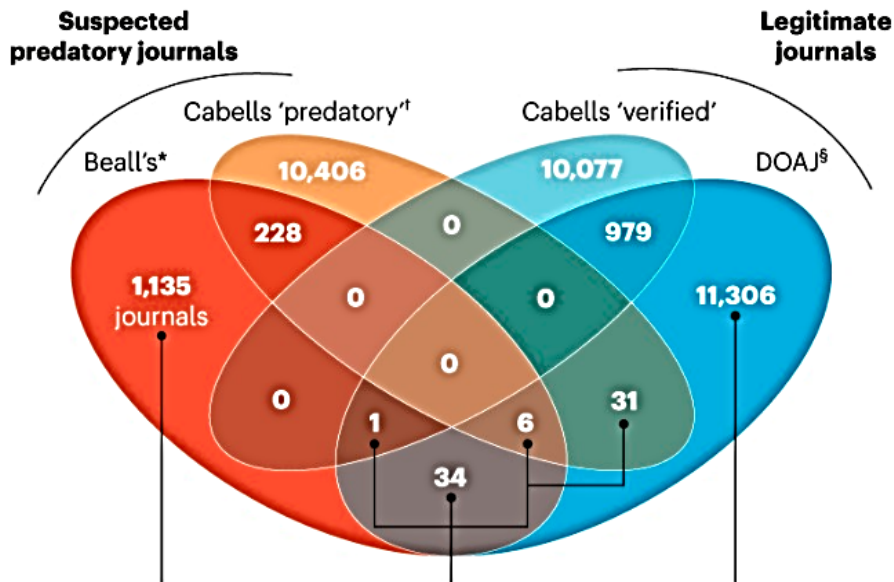
New/innovative platforms e.g. Cureus



✗ Beware Predatory Journals ✗

NO LIST TO RULE THEM ALL

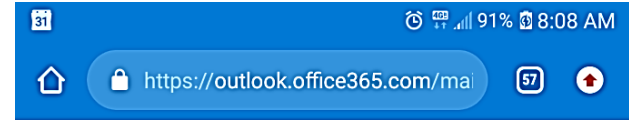
Assessments of which journals are likely to be predatory or legitimate do not tally, and titles can appear in both categories. There is no way to know which journals were considered for a list but left off, or which were not considered.



Beall's list highlighted the issue of predatory journals, but faced criticism over transparency and legal threats from listed titles. It ceased operation in 2017.

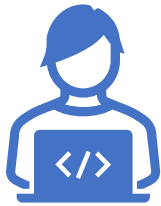
Some journals deemed legitimate by the DOAJ were deemed predatory by Beall's and/or Cabells lists.

The DOAJ relies mainly on information from publishers. It regularly purges titles that do not meet quality criteria.



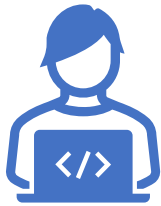
- *** CAUTION: *** If you delete a message using the DELETE BUTTON below, the message will NOT BE recoverable.**
 - Follow up: Manuscript request
From Annals of Clinical Case Reports (ISSN 2474-1655) (editor@accronlineojp.info)
MAIL FROM return@accronlineojp.info
To sara.jordan@ohiohealth.com
2/12/21 6:24 AM | Data Protection | 6.7 kB
Release **Delete**
 - Dear Dr. Sara Jordan Hyland, We provide an international scientific platform for your research
From Rene Brinley (editor@ccrionlineojp.info)
MAIL FROM return@ccrionlineojp.info
To sara.jordan@ohiohealth.com
2/12/21 6:49 AM | Data Protection | 6.6 kB
Release **Delete**
 - Sara Jordan Hyland, could you give a speech at ICGO-2022(Europe)?
From annali (annali4@neurotalk-2020.com)
MAIL FROM annali4@neurotalk-2020.com
To sara.jordan@ohiohealth.com
2/12/21 6:43 AM | Data Protection | 22.5 kB
Release **Delete**

Does it
cost
money to
publish?



- Generally, no
- Options that do incur \$:
 - Open access
 - Preprints
 - Color printed figures
 - Extra journal copies

Can I make money publishing?



- No – authors, peer reviewers, and most editorial board members do not make money throughout the publication process to limit bias
- Suspect predatory journal if payments offered
- Indirect incentives

Publishing Process – Get Started



Establish/refresh professional **online presence**



Determine **authorship** early



Classify study/article type and pull **reporting guidelines** for initial checklist



Pick 2 ideal **target journals**



Find 2 similar articles in journal to **template**

Your (and Your Work's) Professional Online Presence

ORCID[®] ID <https://orcid.org/about/what-is-orcid/mission>

Twitter[®] <https://accpjournals.onlinelibrary.wiley.com/doi/abs/10.1002/jac5.1120>

Google[®] Scholar

h-Index

LinkedIn[®]

Altmetrics[®] / PlumX Metrics[®]



Sara J. Hyland, PharmD, BCCCP

FOLLOW

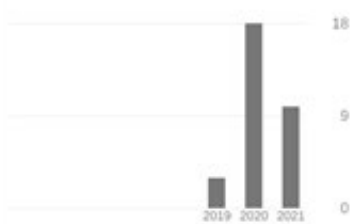
Grant Medical Center (OhioHealth)
Verified email at ohiohealth.com

perioperative medicine emergency medicine analgesia/anesthesia enhanced recovery clinical pharmacy practice

TITLE	CITED BY	YEAR
<input type="checkbox"/> Liposomal bupivacaine versus standard periarticular injection in total knee arthroplasty with regional anesthesia: a prospective randomized controlled trial S.J. Hyland, D.G. Deliberato, R.A. Fada, M.J. Romanelli, C.L. Collins, ... The Journal of arthroplasty 34 (3), 488-494	19	2019
<input type="checkbox"/> Clinical pharmacist perspectives for optimizing pharmacotherapy within Enhanced Recovery After Surgery (ERAS®) programs J.K. Lovely, S.J. Hyland, A.N. Smith, G. Nelson, O. Ljungqvist, R.H. Parrish II International Journal of Surgery 63, 58-62	5	2019
<input type="checkbox"/> Clinical Pharmacist Service Associated With Improved Outcomes and Cost Savings in Total Joint Arthroplasty S.J. Hyland, B.J. Kramer, R.A. Fada, M.M. Lucki The Journal of arthroplasty 35 (9), 2307-2317. e1	4	2020
<input type="checkbox"/> Perioperative clinical pharmacy practice: Responsibilities and scope within the surgical care continuum G.P. Patel, S.J. Hyland, K.L. Birrer, R.C. Wolfe, J.K. Lovely, A.N. Smith, R.L. Dixon, ... Journal of the American College of Clinical Pharmacy 3 (2), 501-519	3	2020
<input type="checkbox"/> Perioperative Pain Management and Opioid Stewardship: A Practical Guide S.J. Hyland, K.K. Brockhaus, W.R. Vincent, N.Z. Spence, M.M. Lucki, ... Pain Practice 21 (1), 1-11		2021

Cited by

	All	Since 2016
Citations	31	31
h-index	3	3
i10-index	1	1



Co-authors

EDIT



Olle Ljungqvist
Professor Surgery, Örebro Unive...



CLINICAL PHARMACY FORUM



Perioperative clinical pharmacy practice: Responsibilities and scope within the surgical care continuum

Gourang P. Patel Pharm.D., M.Sc.¹ | Sara J. Hyland Pharm.D.² |
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Amanda Giancarelli Pharm.D.³ | William R. Vincent III Pharm.D.¹² |
Carole Richardson Pharm.D.¹³ | Richard H. Parrish II Ph.D., FCCP¹⁴

Perioperative clinical pharmacy practice: Responsibilities and scope within the surgical care continuum

Overview of attention for article published in JACC[®]: JOURNAL OF THE AMERICAN COLLEGE OF CLINICAL PHARMACY, December 2019

12

About this Attention Score

In the top 25% of all research outputs scored by Altmetric

Mentioned by **16** tweeters

Citations **2** Dimensions

Readers on **6** Mendeley

SUMMARY | Twitter | Dimensions citations

Title Perioperative clinical pharmacy practice: Responsibilities and scope within the surgical care continuum

Published in JACC: JOURNAL OF THE AMERICAN COLLEGE OF CLINICAL PHARMACY, December 2019

DOI 10.1002/jacs.1185

Authors Gourang P. Patel, Sara J. Hyland, Kara L. Birrer, Rachel C. Wolfe, Jenna K. Lovely, April N. Smith, ...

TWITTER DEMOGRAPHICS | MENDELEY

The data shown below were collected from the profiles of 16 tweeters who shared this resour...

ICMJE Authorship Criteria

Substantial contributions to conception or design of the work; or the acquisition, analysis, or interpretation of data

AND

Drafting the work or revising it critically for important **intellectual content**

AND

Final approval of the version to be published

AND

Agreement to be **accountable for all aspects** of the work

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

CRedit Taxonomy for Author Roles

Conceptualization

Data curation

Formal Analysis

Funding acquisition

Investigation

Methodology

Project administration

Resources

Software

Supervision

Validation

Visualization

Writing – original draft

Writing – review & editing

Authors vs. Acknowledgements

“The authors gratefully acknowledge the contributions of...”

Reporting and Style Guidelines

Equator Network

Enhancing the
QUALity and
Transparency Of
health Research

<https://www.equator-network.org/reporting-guidelines/>

https://www.nlm.nih.gov/services/research_report_guide.html



Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
Observational studies	STROBE	Extensions
Systematic reviews	PRISMA	Extensions
Study protocols	SPIRIT	PRISMA-P
Diagnostic/prognostic studies	STARD	TRIPOD
Case reports	CARE	Extensions
Clinical practice guidelines	AGREE	RIGHT
Qualitative research	SRQR	COREQ
Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	
Economic evaluations	CHEERS	

Publishing Process - Get Started



Establish/refresh professional **online presence**



Determine **authorship** early



Classify study/article type and pull **reporting guidelines** for initial checklist



Pick 2 ideal **target journals**



Find 2 similar articles in journal to **template**

Journal Selection

- MUSTs? = **peer-reviewed and indexed**
- Impact Factor
 - <https://www.scimagojr.com/journalrank.php>
 - Probably unimportant to you at this point
- Key Driver = **target audience**
- Ultimate Drivers = **published and findable**

JANE

Journal/Author Name Estimator

Insert title/keywords → find journals to submit to

<http://jane.biosemantics.org/>

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6300233/>

Finding
"Template"
Articles

Similar topic

Similar methodology/rigor

Can't find? Reassess
journal selection

Found? Consider structure,
style, length, etc.

Publishing Process – Get Going



Gather and update **references** -
Use a reference manager!



Pull journal Instructions for Authors



Setup your **draft** manuscript per **journal require**
ments



Visualize the publication **process**



Set **timeline**, goals

Reference Managers

EndNote®

Zotero®

Mendeley®

Paperpile®

The screenshot displays the Paperpile web application interface. At the top, there is a navigation bar with the Paperpile logo and a search bar. Below the search bar, there are buttons for "Add Papers" and "Select". The main content area is divided into a left sidebar and a central list of papers. The sidebar contains navigation options: "ALL PAPERS (1286)", "STARRED (1)", "FOLDERS" (with a sub-item "NMB (141)"), "LABELS", "SHARED FOLDERS" (with a sub-item "periop pain/opioid stewardship (36)"), and "TRASH (17)". The central list shows four papers, each with a checkbox, title, authors, journal name, year, and type. The first paper is "Prothrombin Complex Concentrates for Bleeding in the Perioper Setting" by Ghadimi K, Levy JH, Welsby IJ, published in *Anesth Analg*, 2016, Review. The second is "Prothrombin complex concentrate in cardiac surgery for the treatment of non-surgical bleeding" by Hayes K, Fernando MC, Young L, Jordan V, Cochrane Heart Group, published in *Cochrane Database Syst Rev*, 2020, Journal Article. The third is "The outcomes of emergency pharmacist participation during acute myocardial infarction" by Acquisto NM, Hays DP, Fairbanks RJ, Shah MN, Delehanty J, Nobay F, Guido J, Ha, published in *J Emerg Med*, 2012, Journal Article. The fourth is "ASHP Guidelines on Emergency Medicine Pharmacist Services" by Ortmann MJ, Johnson EG, Jarrell DH, Bilhimer M, Hayes BD, Mishler A, Pugliese RS, Roberson TA, Slocum G, Smith AP, Yabut K, Zimmerman DF. To the right of the paper list, there is a section for "[1-15]" with a "Paperpile citation" button. Below this, a list of six citations is displayed, corresponding to the papers in the list.

← → ↻ 🏠 📄 paperpile.com/app

Paperpile

+ Add Papers ▾ Search your papers Select ▾

ALL PAPERS (1286)

- ★ STARRED (1)
- FOLDERS
 - NMB (141)
- LABELS
- SHARED FOLDERS
 - periop pain/opioid stewardship (36)
- TRASH (17)

Prothrombin Complex Concentrates for Bleeding in the Perioper Setting ★
Ghadimi K, Levy JH, Welsby IJ
Anesth Analg, 2016 – Review

Prothrombin complex concentrate in cardiac surgery for the treatment of non-surgical bleeding ★
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[1–15]

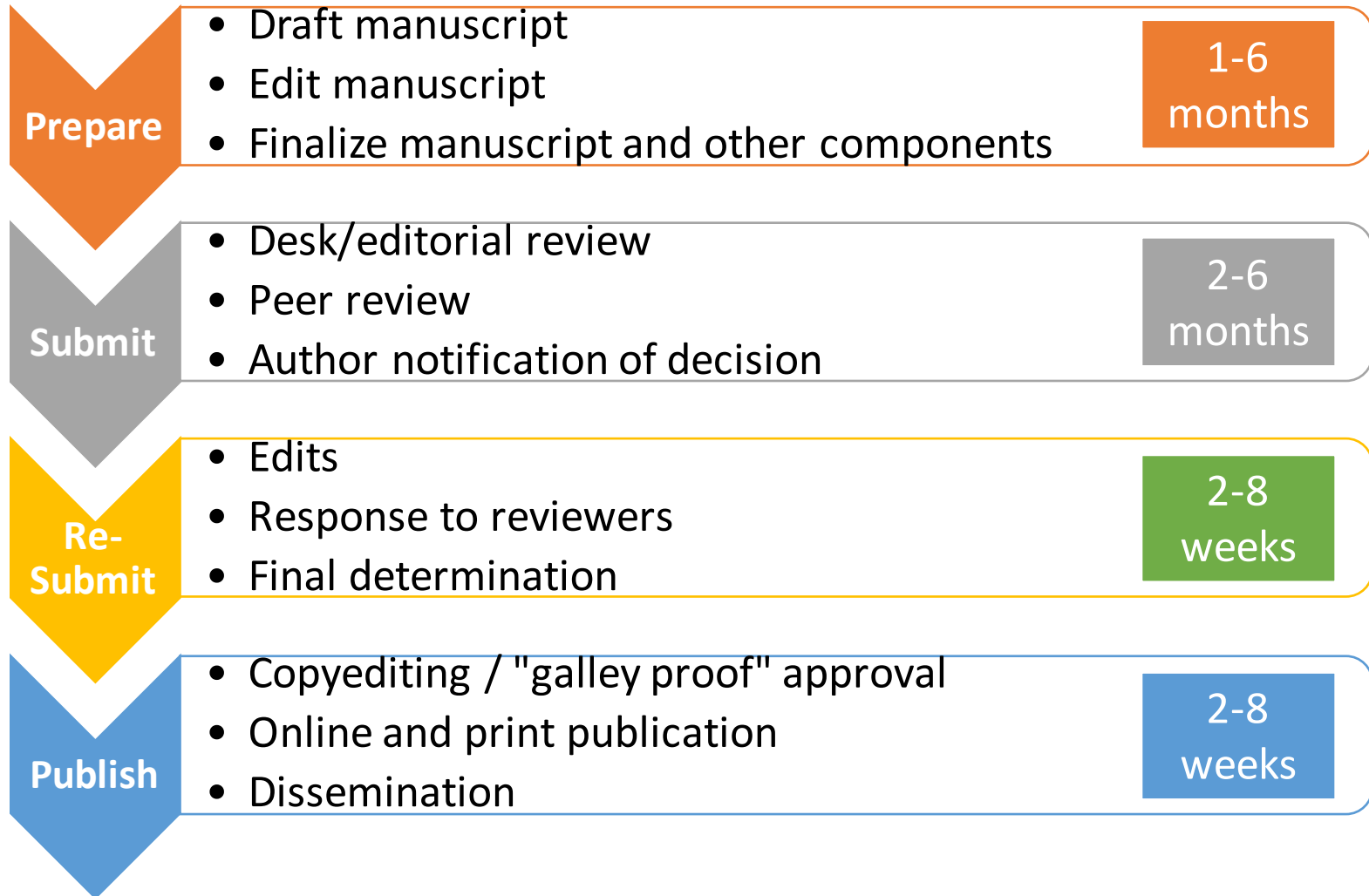
Paperpile citation ✎

1. Thygesen K, Alpert JS, Jaffe AS, Chaitman BR, Bax JJ, Morrow DA, et al. Fourth Universal Definition of Myocardial Infarction (2018). *J Am Coll Cardiol*. 2018;72: 2231–2264. doi:10.1016/j.jacc.2018.08.1038
2. Meyers EP, Weingart MDS, Smith FS. The OMI Manifesto. [cited 22 Feb 2021]. Available: <https://www.albanycritcare.net/s/The-OMI-Manifesto-PDF-32918.pdf>
3. Ibanez B, James S, Agewall S, Antunes MJ, Bucciarelli-Ducci C, Bueno H, et al. 2017 ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: The Task Force for the management of acute myocardial infarction in patients presenting with ST-segment elevation of the European Society of Cardiology (ESC). *Eur Heart J*. 2018;39: 119–177. doi:10.1093/eurheartj/ehx393
4. O’Gara PT, Kushner FG, Ascheim DD, Casey DE Jr, Chung MK, de Lemos JA, et al. 2013 ACCF/AHA guideline for the management of ST-elevation myocardial infarction: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. *Circulation*. 2013;127: e362–425. doi:10.1161/CIR.0b013e3182742cf6
5. Levine GN, Bates ER, Blankenship JC, Bailey SR, Bittl JA, Cercek B, et al. 2015 ACC/AHA/SCAI Focused Update on Primary Percutaneous Coronary Intervention for Patients With ST-Elevation Myocardial Infarction: An Update of the 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention and the 2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction. *J Am Coll Cardiol*. 2016;67: 1235–1250. doi:10.1016/j.jacc.2015.10.005
6. Levine GN, Bates ER, Bittl JA, Brindis RG, Fihn SD, Fleisher LA, et al. 2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients With Coronary Artery Disease: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines: An Update of the 2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention, 2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery. 2012

Setting up Your Draft

- Carefully read journal requirements
 - Font type, size, spacing
 - Section headers
- Leave comments containing journal specs
 - Max word counts
 - Number of keywords
 - Max references
 - General guidance for each section

The Publication Process





Like watching grass grow...

← Submissions Being Processed for Author

Page: 1 of 1 (1 total submissions)

Results

Action  	Manuscript Number ▲	Title ▲	Initial Date Submitted ▼	Status Date ▲	Current Status ▲
View Submission Author Status Correspondence Send E-mail			07/07/2021	01/20/2022	Undergoing peer review

Tips for Academic Productivity

Critical appraisal of competing priorities

Scheduling tasks

Specifying tasks – "micro-listing"

Choose **active** collaborators and seek **mentorship**

Writing efficiency α writing volume

Language services

Done well >>> not done, but perfect

Micro-listing and Scheduling Tasks



Unlikely to Work

To do Tuesday:

- Write *Methods* section
- Prep for Wed meeting
- Get gas on the way home



Setup for Success

Tuesday calendar:

Write Methods section – study design, participants and timeline section
1430 for 1 hr



Active Collaborators

Complementary skills or perspectives

Genuine interest

Capacity for commitment

Effective mentors

Tips for Academic Productivity

Critical appraisal of competing priorities

Scheduling tasks

Specifying tasks – "micro-listing"

Choose **active** collaborators and seek **mentorship**

Writing efficiency α writing volume

Language services

Done well >>> not done, but perfect

Publishing Process – Get Done



Incremental forward movement
wins



Many levels of editing



Finalize draft



Submission checklists/pieces



Only submit to 1 journal at a time

Finalizing Manuscript Draft

PI initial draft complete/reviewed



ALL collaborator final review and editing



Non-expert review and editing



PI final refined draft



ALL collaborator final approval



Finalizing Manuscript Draft

DO NOT SUBMIT UNTIL ALL HAVE BEEN MET:

- **Complete, polished, publication-worthy**
- **100% adherent to journal specifications and interests**
- **NO grammatical/spelling errors, formatting issues, or tracked changes**
- **Approved by ALL authors**

So you think you're ready to submit?

Title page

- Author names, credentials, affiliations

Abstract, keywords

Conflict of interest (COI) forms, IRB forms

Author contributions and attestations

Final (deidentified?) main text file

- Abstract, main text, tables, figure legends?

Separate figure files in correct format?

Acknowledgements

Cover letter

Checklist (from EQUATOR and/or journal)

Submission Component Tips

- **Cover letter** – address to editor/team
 - Briefly introduce impetus for your work and sell why of interest to journal audience
 - IRB approval, attestations
- **Keywords** – use to maximize findability!
- Log in to **Editorial Manager**[®] in advance

Publishing Process – Get Done



Incremental forward movement
wins



Many levels of editing



Finalize draft



Submission checklists/pieces



Only submit to 1 journal at a time

Submission Complete!



Celebrate, take a
break



Reflect on the process
thus far



Recharge your
resiliency

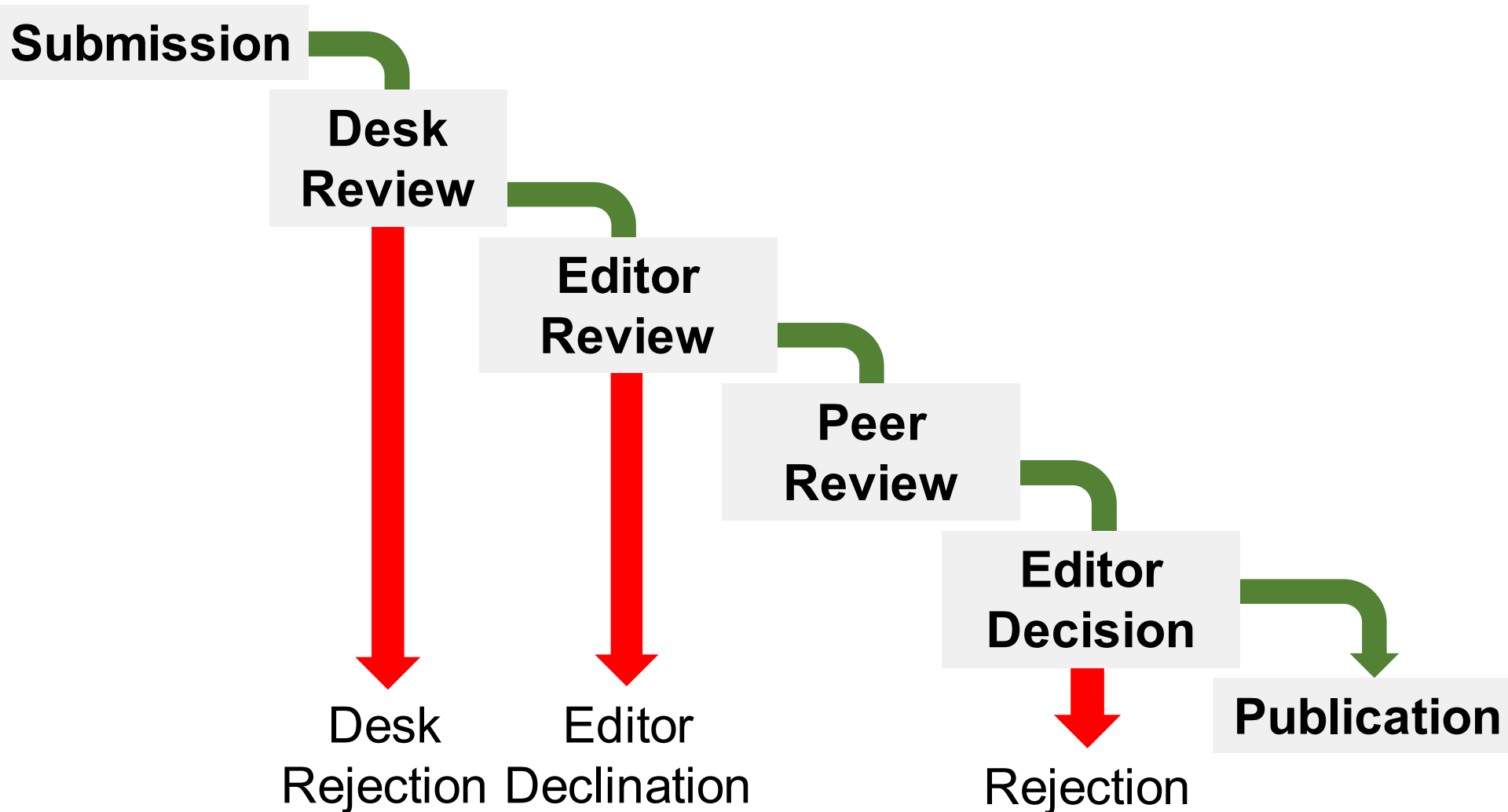


Refresh your growth
mindset



Prepare for an
onslaught of review...

Tracing the Process



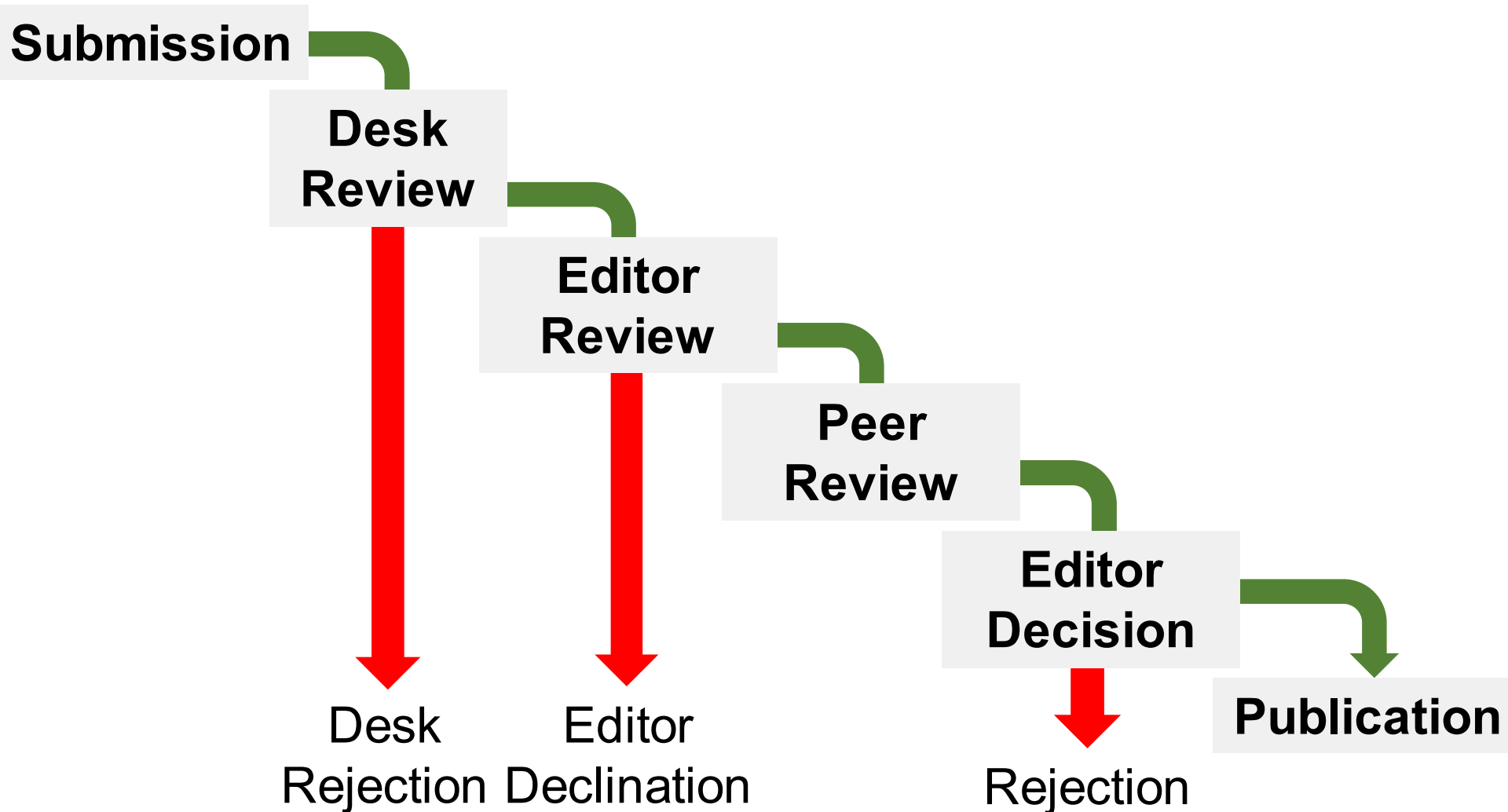
Desk and Editorial Review

- Journal editorial staff
- Technical screen
 - Formatting and components to specs
 - Strong, concise, coherent writing
 - Appropriate methods and references
- Journal aims and scope
- Ethical standards

Desk or Editorial Rejections

- ✗ Incomplete and/or error-ridden draft
- ✗ Inadequate prose or English
- ✗ Methods/analysis not appropriate
- ✗ References outdated and/or unbalanced
- ✗ Not novel/of interest to journal audience
- ✗ Insufficient rigor for journal impact
- ✗ Ethical concerns

Tracing the Process



Peer Review

- Unpaid, external reviewers
- Published/practicing experts in field
- Assess **scientific merit of work** + if manuscript is **worthy of publication in that journal**
 - Provide recommendations to authors to improve their work
 - Make recommendation to editor
- Single- or double-blind process

Peer Review

Accept

**Accept with
Minor
Revisions**

**Accept or
Reconsider
after Major
Revisions**

Reject

Your
published
manuscript



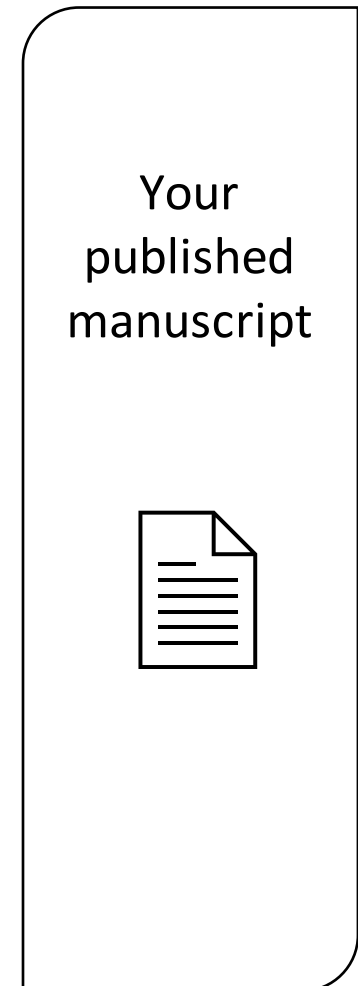
Peer Review

Accept

**Accept with
Minor
Revisions**

**Accept or
Reconsider
after Major
Revisions**

Reject



Peer Review

Accept

(This should never happen!)

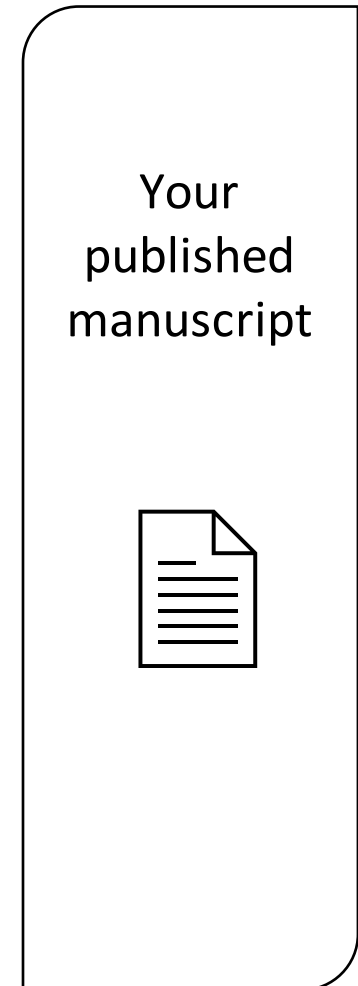
**Accept with
Minor
Revisions**

Complete requested revisions,
address reviewer comments,
resubmit

**Accept or
Reconsider
after Major
Revisions**

Pre-print version
may be
immediately
released!

Reject



Peer Review

Accept

(This should never happen!)

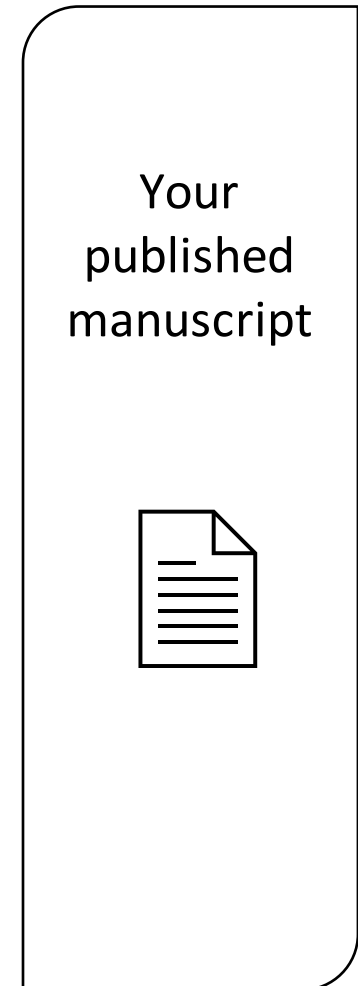
**Accept with
Minor
Revisions**

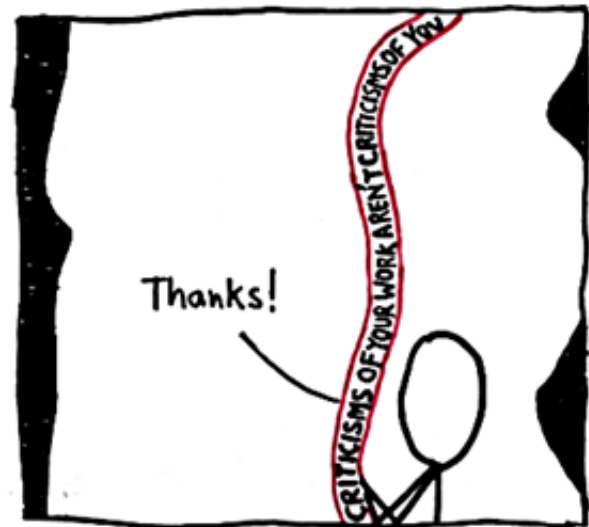
Complete requested revisions,
address reviewer comments,
resubmit

**Accept or
Reconsider
after Major
Revisions**

Complete requested revisions,
address reviewer comments,
resubmit

Reject





The Pit of Publishing Despair
@redpenblackpen

<https://twitter.com/redpenblackpen/status/1173797747872239616>

Response to Reviewers



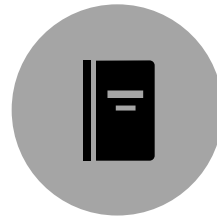
Be meticulous and courteous



Cite specific location of changes in resubmitted manuscript file



All comments must be addressed, but not all suggestions must be accepted



Follow journal instructions carefully but often an open/"letter-like" format

Challenges with Peer Review

- Conflicting feedback/requests
- Unproductive criticism
- Feedback would result in exceeding journal requirements
- Feedback you disagree with /would change intention



Challenges with Peer Review

- Conflicting feedback/requests
 - Seek guidance from journal editor
- Unproductive criticism
 - Seek and respond to intention
- Feedback would result in exceeding journal requirements
 - Reassess other sections for opportunities
- Feedback you disagree with /would change intention
 - Reassess presentation rather than content
 - Provide rationale for declining

Resubmission

01

Maintain attention to detail

- Including authorship details

02

Reengage all collaborators and independent reviewers for "fresh eyes"

03

Cross-check all reference numeration, table and figure legends/data labels/numeration, etc.

Rejection after Peer Review



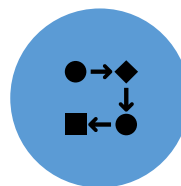
Thank editorial team
and reviewers



Take a break



Reflect



Assess next target
journal

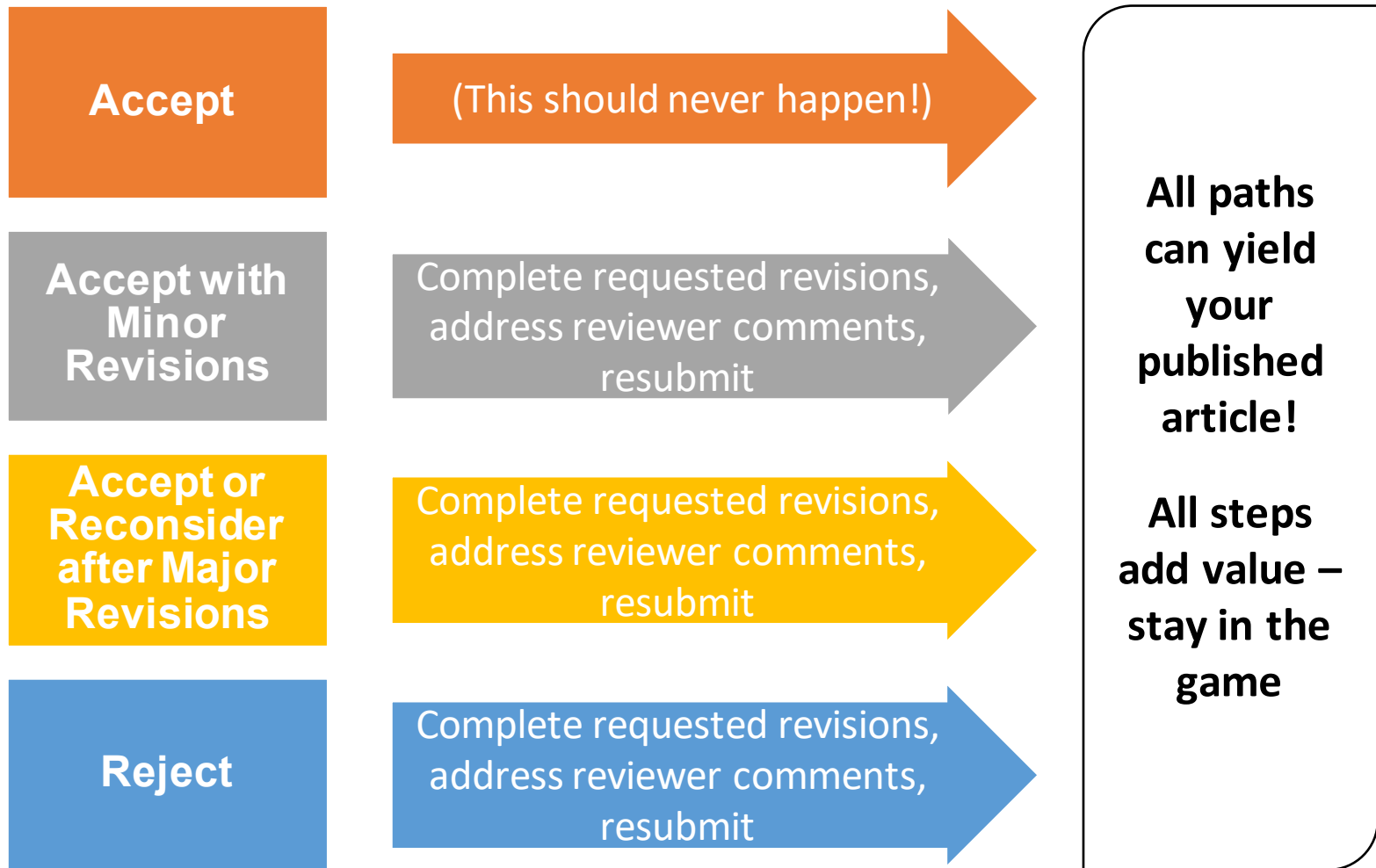


Pursue process as per
"Accepted with
Revisions"



**Comprehensive
revision addressing
review**

Peer Review



Final Acceptance!

Copyediting by
editorial team

Typesetting /
“galley proof”

Final approval

Publication
online first – DOI
assigned

Ultimate print
publication/full
citation

PubMed indexing
in weeks to
months

Acceptance



Celebrate!



Disseminate



Reflect



Consider future work and contributions



Serve as a peer reviewer

Writing your publication draft

Sorry- out of time!

Online supplemental resources:

- Manuscript template
- Full writing workshop slides

Maybe Preceptor CE Part 2?

Many other ways to publish

Review articles

Editorials /
letters to
editor

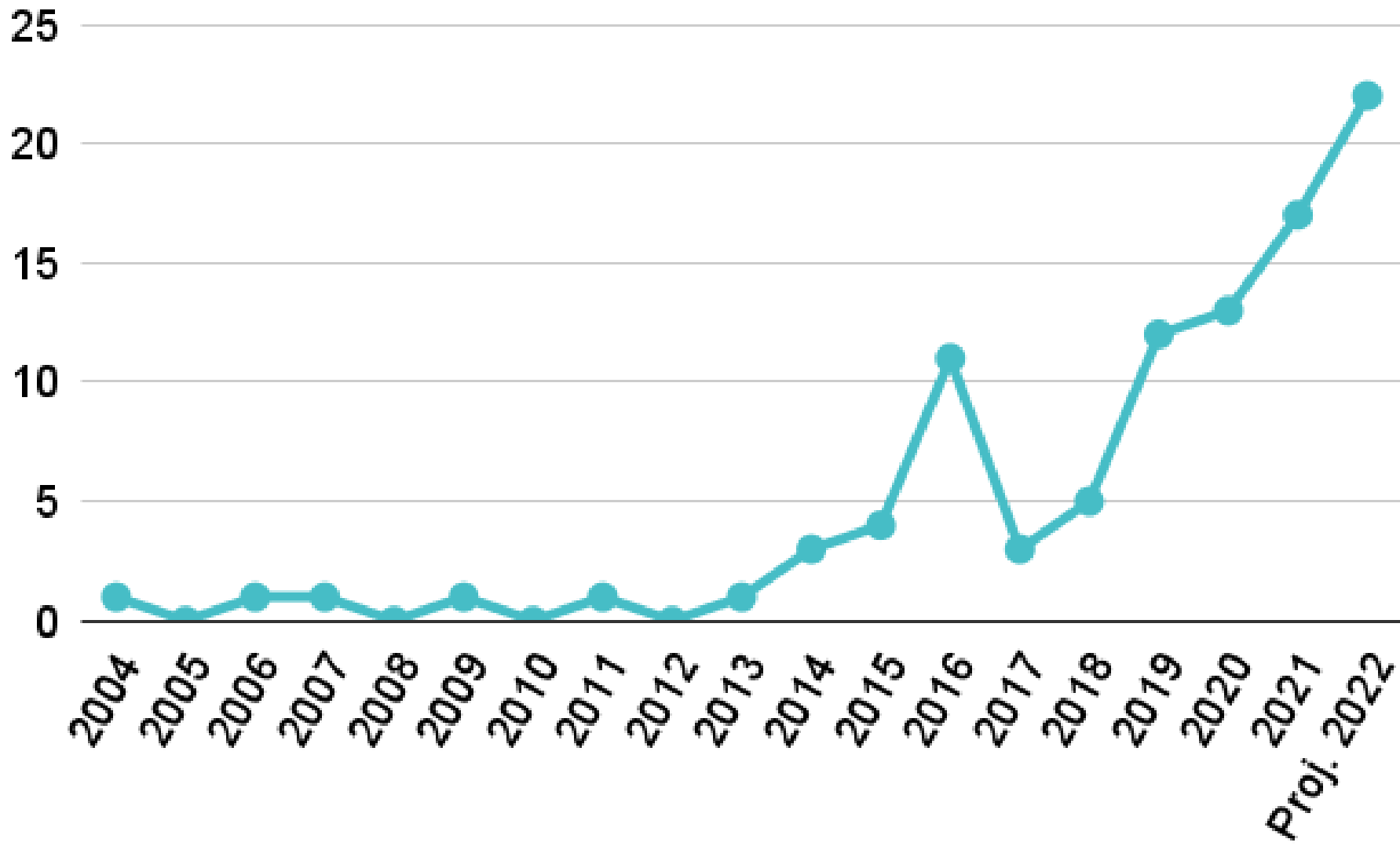
“How to”
articles

Position
papers, clinical
guidelines

Book chapters

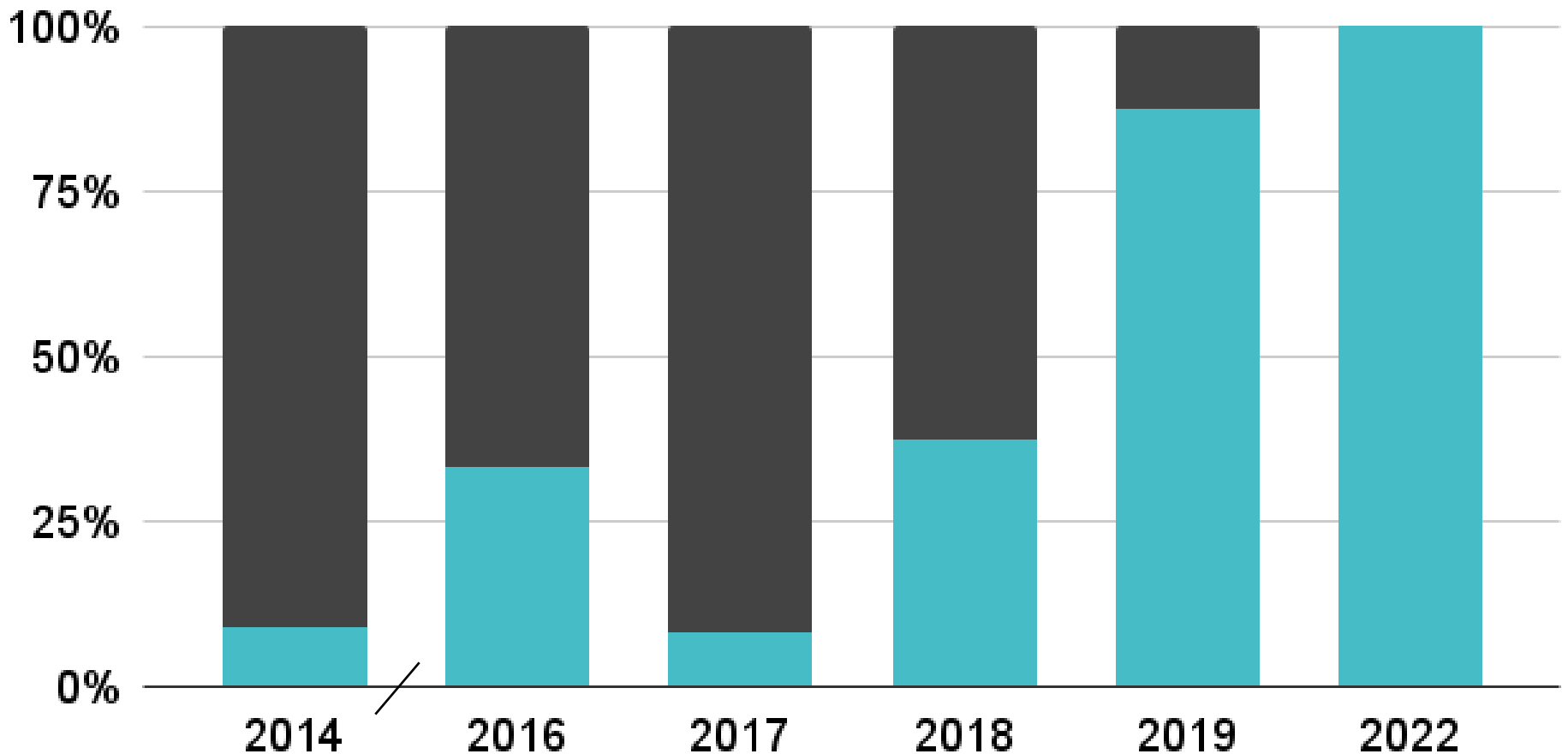
Case
reports/series

OhioHealth Pharmacy's Publication Boom

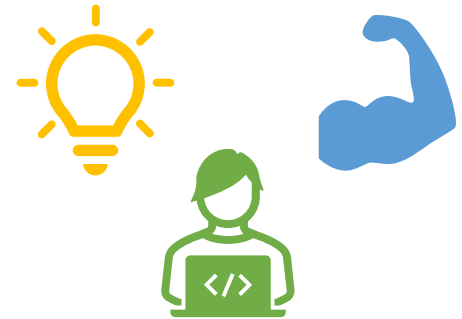


OhioHealth Pharmacy's Research Quality

■ Non-Pharmacist Winners ■ Pharmacist Research Competition Winners



Summary and Encouragement



- Community health-system pharmacists face many challenges to publishing our research and QI projects, but many resources and strategies exist to support those interested in scholarship
- Mentorship and active collaborators are key, along with advanced time-management skills and persistence
- We are doing great work – it deserves to be seen!

Resources

Hammond, DA, Rech, MA. A “how-to” guide for effectively writing a publishable research manuscript. *J Am Coll Clin Pharm.* 2020; 3: 818–824. <https://doi.org/10.1002/jac5.1190>

Viglianti EM, Admon AJ, Carlton EF, et al. Publishing a Clinical Research Manuscript: Guidance for Early-Career Researchers With a Focus on Pulmonary and Critical Care Medicine. *Chest.* 2019;156(6):1054-1061. doi:10.1016/j.chest.2019.06.014

Roederer M, Marciniak MW, O'Connor SK, Eckel SF. An integrated approach to research and manuscript development. *Am J Health Syst Pharm.* 2013 Jul 15;70(14):1211-8. doi: 10.2146/ajhp120167. Erratum in: *Am J Health Syst Pharm.* 2013 Oct 1;70(19):1650. PMID: 23820457.

Bauman, J.L., Jackevicius, C., Zillich, A.J., Parker, R.B. and Phillips, B.B. (2019), On the methodology of retrospective chart reviews. *J Am Coll Clin Pharm*, 2: 6-7. <https://doi.org/10.1002/jac5.1064>

Wong BM, Sullivan GM. How to Write Up Your Quality Improvement Initiatives for Publication. *J Grad Med Educ.* 2016 May;8(2):128-33. doi: 10.4300/JGME-D-16-00086.1. PMID: 27168874; PMCID: PMC4857497.

Steen RG. Writing for publication in a medical journal. *Indian J Endocrinol Metab.* 2012;16(6):899-903. doi:10.4103/2230-8210.102988

Equator (Enhancing the QUALity and Transparency Of health Research) Network www.equator-network.org

International Committee of Medical Journal Editors (ICMJE) www.icmje.org/

American Society of Health-System Pharmacists (ASHP) Research and Education Foundation. American Journal of Health-System Pharmacy series: Research Fundamentals

Roederer M, et. Al. An integrated approach to research and manuscript development. *Am J Health-Syst Pharm—Vol 70 Jul 15, 2013*

ACCP Annual Mtg – Scientific Writing Workshop Activity Number: 0217-0000-17-195-L01-P materials. Oct 2017

<https://scientific-publishing.webshop.elsevier.com/research-process/finer-research-framework/>

Publishing Research and Quality Improvement Projects as a Community Health- System Pharmacist

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