

Title: **Family Medicine Research from the Editor's Perspective**

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The FM editors' role in FM research

Family medicine as a specialty has a plethora of high-quality journals covering research, clinical care, evidence-based medicine, health policy, and educational scholarship. As family medicine is a broad, generalist discipline, published scholarship within family medicine is also quite broad. But all work published in family medicine journals has one, unifying focus. Ultimately, the goal is to improve the care of our patients. Research in family medicine is predicated on the fact that most health care happens in the outpatient practice, therefore that is where research should happen as well. (Gotler 2019, Harper 2021) Family medicine researchers' tend to work collaboratively with real patient population. For instance, they may participate in practice based research networks (PBRNs) to conduct pragmatic trials in real world primary care practices. This focus on the patient, in the patient's usual environment, is the strength of the discipline and its unique contribution to the research cannon.

The editors of family medicine journals as a group represent academic family medicine as well as clinical practice and provide a scaffold for the intellectual framework of the discipline. They are thought leaders for family physicians, educators, and researchers.

The role of an editor is to assess all papers submitted to their journal, assure that the papers published are of the highest quality, and ultimately help shape the scientific arc of the discipline. The editor also serves as a steward of the intellectual concepts of the discipline. They curate published work related to the practice and teaching of family medicine and guide the research priorities of the discipline. Through editorials and commentaries, editors can challenge funders, health care organizations, and government agencies to improve the care of communities throughout the world. Editors of family medicine journals in North America have worked together to improve diversity and equity in publishing (Sexton 2021, Schrage 2023), instructed the community about grading evidence (Ebell 2004), and warned of the risk of predatory journals (Bowman 2018). This collaborative spirit of working towards a

common goal of high quality, equitable family medicine scholarship is important and signals a cohesive group.

Publishing a paper in a peer reviewed journal is the highest form of scholarship. Junior faculty need mentoring and coaching to successfully complete research and write a paper for publication. (Al Ackar 2023, Seehusen 2021) But, what is the editor's role in this process? Journals aim to publish the highest quality papers possible. The process of choosing papers, sending back to authors for revisions, and editing the final result is an arduous one, and can be thought of as a mentoring journey of sorts. Peer reviewers work with editorial teams to help authors improve their papers toward a goal of excellent scholarship. Several of the journals also offer medical editing fellowships which aim to grow future editors through mentored editing experiences.

Current Trends and Challenges for Family Medicine Journals

Online Publishing

The widespread availability of the internet in the 1990's made many parts of the publishing process faster: manuscript submission, peer review, formatting, and production of the final product, allowing for faster dissemination of scientific information.(Ghasemi 2023) It is now possible to complete the publication process and make a final manuscript available online long before it becomes available in print. This is can be a win for family medicine authors, editors, readers, and – ultimately - patients. All major family medicine journals are online and most are open access, either immediately or after a brief embargo period.

The advent of online publishing also brought about the advent of new payment models (Albert 2006) as well as new opportunities for profiteering. (Bowman 2018) Predatory journals represent a serious threat for family medicine authors, especially those who are inexperienced. As we encourage

more scholarship within family medicine, we also need to educate medical students, residents, and other novice authors to identify and avoid predatory journals. (Sharma 2018)

Another online trend, one accelerated by the COVID-19 pandemic, is preprinting of scientific manuscripts. (Alga 2021) Preprint servers are often associated with specific journals or specific academic institutions. Others are independent online locations where researchers can rapidly make findings available to the public before and during the peer review process.(Chiarelli 2019) This clear preprint strength is also the greatest preprint weakness. Because these manuscripts have not been fully vetted through the peer-review process, readers must determine the validity of the findings. Many of these articles will subsequently be published, often with significant revisions. Others will not survive peer review and will never be published in the peer-reviewed, indexed medical literature.(Llor 2022) The editors of family medicine journals are gaining familiarity with preprints and are generally open to publishing manuscripts that have been posted on preprint servers after appropriate peer-reviewing.

Peer review challenges

Peer review of the scientific literature dates back to the 18th century and remains an essential process in family medicine journals. (Kronick 1990, AFP reviewer page, Family Medicine reviewer page, JABFM reviewer page) Despite its key role in helping editors critically assess articles with the goal of providing the best evidence for education, research and patient care in family medicine, peer review also has challenges. First, research surrounding the effectiveness and optimal methods for peer review is limited. (Jefferson 2002, Rennie 2017). Second, finding reviewers with expertise on a particular topic who can dedicate the time to provide a quality review is an ongoing conundrum for many reasons. These include concern for tasking the same pool of reviewers who often have competing professional demands, reviewer bias, lack of diversity among peer reviewers, and inadequate recognition of the work required to perform a good review. (El-Guebaly 2023). To address these challenges, editors of family

medicine journals continue to provide workshops on peer review at various conferences and can collaborate to study peer review and elevate its recognition in family medicine scholarship.

Diversity, Equity and Inclusion in Family Medicine scholarship

Black, Latinx, American Indian/Alaska Native, Pacific Islander, and Southeast and refugee Asian populations remain underrepresented in medicine (URiM) despite the increasing diversity in the general US population and the need for a diverse workforce to tackle health inequities (Stoesser 2021). This translates to a dearth of diversity among authors, editorial boards, and peer reviewers for family medicine journals. One barrier to increasing equitable scholarly opportunities for URiM individuals is the lack of a standard way to collect demographic information and fears, given historic systemic racism in the US health system, that providing this information might negatively affect one's chance for contribution. Family medicine editors and many other scientific scholarly communities remain committed to addressing inequities in publication and have created a call to action and a framework for next steps. (Sexton 2021) (Schrager 2023) (Boyd 2020) (C4DISC)

Challenges to scientific rigor in the digital age

The digital age has introduced several new methodologies for conducting research. For example, researchers can study the content of online discussions or disease-specific websites.(Worthen 2015) This type of research can provide insights on topics that would previously been very challenging to investigate. Another digital methodology that represents a significant challenge for journal editors is the online survey without a specifically predefined sampling frame. These are surveys are often spread via social media platforms or introduced on large listservs.(Klee 2013) Recipients may be encouraged to

forward survey links widely in order to increase the number of responses. These surveys can generate a very large number of responses, can reach hard to identify populations, and have the advantage of speed compared to many other survey methods. (Chang 2022)

Unfortunately, it is often difficult to assess the validity of the results of these types of surveys. Survey responses may be very low, or it may be impossible to determine the response rate. If the survey link could be freely forwarded, it will likely be unclear if all respondents even belong to the population the survey was originally designed to target. Given these limitations, researchers should carefully consider if electronic surveys without a carefully defined sampling frame are appropriate and necessary for their particular area of interest. Editors need to determine if the information generated contributes enough to the medical literature to justify the methodologic weaknesses.

The continued rise of “big data” is a huge opportunity that also represents a continued challenge facing medical researchers and editors. For instance, the number of data points available in electronic medical records (EMR) grows daily. (Murdoch 2013) In the largest health care systems, these data sets have gotten truly enormous. This allows researchers to search for smaller and smaller associations and identify rarer and rarer outcomes. Many large survey data sets are also available online. Many are freely accessible to download for secondary analysis. (Yang 2020)

Significant limitations come along with the increased analytic power of big data. The phrase “garbage in, garbage out” (GIGO) applies to any computer database. Any analysis of EMR data can only be as reliable as the data put into the EMR by individual health care providers and staff who do not have future research data integrity in mind as they interface with the system. Another risk of big data is that finding a statistically significant association becomes inevitable if the ‘n’ is large enough. (Sainani 2012)

Researchers and editors must be cognizant of these limitations when publishing findings from big data sources. Potential data reliability should always be addressed as a limitation. Additionally, only

clinical questions created a priori and with a legitimate potential causal mechanism should be pursued in big data sets. When associations are found, both statistical and clinical significance of findings should be discussed in research reports.

Artificial intelligence in scholarly publications

Another increasingly prominent challenge in the digital age is the role of artificial intelligence (AI) in scholarly publications. Tools including OpenAI's ChatGPT and other large language models have been used in many contexts, but in the educational realm these tools are known to generate scholarly text to complete writing assignments and papers for submission. Ethical concerns raised in the scientific publishing domain include accountability, authorship, plagiarism, and scientific accuracy, leading many journals and publishing organizations to create statements that chatbots may not be listed as authors and the use of these tools must be acknowledged. (Hosseini 2023) (ICMJE) Proponents of AI in scholarly works state that attempting to over police is futile and would likely lead to undisclosed use. They would argue that developing policies to improve transparency and accountability is a better approach. Additionally, use of these tools could improve writing overall and support diversity by assisting authors producing content in a language other than their first language.

Aspirations for the future of FM publishing

Ideally, future family medicine research publishing will continue to prioritize research done on actual primary care populations. The current state of research funding in the United States leads to a situation in which many, maybe even most, medical decisions family physicians make in clinic on a daily basis are made based on evidence produced by specialists utilizing their patient populations. Research currently done by family physicians, on family medicine populations, is often smaller in scope due to a

relative lack of funding. This typically means studies are done at a single institution, with a smaller 'n', and is shorter in duration.

This forces family physicians to take a leap of faith that specialty literature translates faithfully to a primary care population. More ideal would be studies designed for, and conducted on, the general population. This is the population family physicians care for on a daily basis. More importantly, this is the vast majority of the American population.(Green 2001) Improved funding mechanisms could lead to more research done by family physicians, on family medicine patients, studying topics important to family physicians and their patients.

A critical step in producing more primary care research to generate evidence for family physicians to care for patients and communities is prioritizing diversity, inclusion, and the appropriate conceptualization of race to strive toward health equity. Why is this important? The current scientific literature is saturated with studies demonstrating disparate health outcomes across racial and ethnic groups without investigating the actual source of these disparities and instead falsely implicating biological differences. (Lett 2022). These studies have influenced practice guidelines and calculators assessing disease risk that incorrectly use race as a proxy for genetic difference. (Reddick 2021) (Vyas 2020). Studies that examine race as a proxy for racism and the contributing mitigatable factors are crucial to addressing disparities, and family physicians with their patient-centric philosophies are the ideal group of researchers to lead this effort. Prioritizing this type of research also means engaging members of marginalized communities which can be accomplished by encouraging diversity in our specialty to increase trust and reduce bias. (Stoesser 2021) (Takeshita 2020). This circles back to the challenges that remain in the academic family medicine community where the diversity of authors, reviewers, and editorial boards is lacking.

Family medicine journals continue to make progress in these efforts by advocating for health equity, collaborating, holding each other accountable, mentoring, and most importantly, learning from our contributors, readers, patients, and the communities we serve.

References: (not in order at this time)

Harper DM. Family Medicine Researchers—Why? Who? How? When? *Fam Med*. 2021;53(7):647-649. <https://doi.org/10.22454/FamMed.2021.629549>.

Gotler RS. Unfinished Business: The Role of Research in Family Medicine. *Ann Fam Med*. 2019 Jan;17(1):70-76. doi: 10.1370/afm.2323. PMID: 30670399; PMCID: PMC6342586.

Sexton, S. M., Richardson, C. R., Schrage, S. B., Bowman, M. A., Hickner, J., Morley, C. P., ... Weiss, B. D. (2021). Systemic Racism and Health Disparities: A Statement From Editors of Family Medicine Journals. *Ann Fam Med*, 19(1), 2-3. <https://doi.org/10.1370/afm.2613>

Bowman, M. A., Saultz, J. W., & Phillips, W. R. (2018). Beware of Predatory Journals: A Caution from Editors of Three Family Medicine Journals. *J Am Board Fam Med*, 31(5), 671-676. <https://doi.org/10.3122/jabfm.2018.05.180197>

Ebell, M. H., Siwek, J., Weiss, B. D., Woolf, S. H., Susman, J., Ewigman, B., & Bowman, M. (2004). Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. *Am Fam Physician*, 69(3), 548-556.

Schrager S, Sexton S, Bowman M, Richardson C. Family Medicine editors collaborate toward antiracist publishing, *Learned Publishing* 2023, <https://doi.org/10.1002/leap.1532>

Seehusen DA, Rogers TS, Al Achkar M, Chang T. Coaching, Mentoring, and Sponsoring as Career Development Tools. *Fam Med*. 2021;53(3):175-180. <https://doi.org/10.22454/FamMed.2021.341047>.

Al Achkar M, Rogers TS, Weidner A, Seehusen DA, South-Paul JE. How to Sponsor, Coach, and Mentor: A Qualitative Study With Family Medicine Department Chairs. *Fam Med*. 2023;55(3):143-151. <https://doi.org/10.22454/FamMed.2023.830553>.

Albert KM. Open access: implications for scholarly publishing and medical libraries. *J Med Libr Assoc*. 2006 Jul;94(3):253-62. PMID: 16888657; PMCID: PMC1525322.

Älgå A, Eriksson O, Nordberg M. The development of preprints during the COVID-19 pandemic. *J Intern Med*. 2021 Aug;290(2):480-483. doi: 10.1111/joim.13240. Epub 2021 Feb 9. PMID: 33560546; PMCID: PMC8014163.

Bowman MA, Saultz JW, Phillips WR. Beware of Predatory Journals: A Caution from Editors of Three Family Medicine Journals. *J Am Board Fam Med*. 2018 Sep-Oct;31(5):671-676. doi: 10.3122/jabfm.2018.05.180197. PMID: 30201661.

Strome A, Moore-Petinak N, Waselewski M, Chang T. Youths' Knowledge and Perceptions of Health Risks Associated With Unprotected Oral Sex. *Ann Fam Med*. 2022 Jan-Feb;20(1):72-76. doi: 10.1370/afm.2761. PMID: 35074771; PMCID: PMC8786430.

Chiarelli A, Johnson R, Pinfield S, Richens E. Preprints and Scholarly Communication: Adoption, Practices, Drivers and Barriers. *F1000Res*. 2019 Jun 26;8:971. doi: 10.12688/f1000research.19619.2. PMID: 32055396; PMCID: PMC6961415.

Ghasemi A, Mirmiran P, Kashfi K, Bahadoran Z. Scientific Publishing in Biomedicine: A Brief History of Scientific Journals. *Int J Endocrinol Metab*. 2022 Dec 31;21(1):e131812. doi: 10.5812/ijem-131812. PMID: 36945344; PMCID: PMC10024814.

Green LA, Fryer GE Jr, Yawn BP, Lanier D, Dovey SM. The ecology of medical care revisited. *N Engl J Med*. 2001 Jun 28;344(26):2021-5. doi: 10.1056/NEJM200106283442611. PMID: 11430334.

Klee D, Covey C, Zhong L. Social media beliefs and usage among family medicine residents and practicing family physicians. *Fam Med*. 2015 Mar;47(3):222-6. PMID: 25853534.

Lee CH, Yoon HJ. Medical big data: promise and challenges. *Kidney Res Clin Pract*. 2017 Mar;36(1):3-11. doi: 10.23876/j.krcp.2017.36.1.3. Epub 2017 Mar 31. PMID: 28392994; PMCID: PMC5331970.

Llor C, Moragas A, Maier M. Evaluation of Publication of COVID-19-Related Articles Initially Presented as Preprints. *JAMA Netw Open*. 2022 Dec 1;5(12):e2245745. doi: 10.1001/jamanetworkopen.2022.45745. Erratum in: *JAMA Netw Open*. 2023 Feb 1;6(2):e230341. PMID: 36480205; PMCID: PMC9856219.

Kronick DA. Peer Review in 18th-Century Scientific Journalism. *JAMA*. 1990;263(10):1321–1322. doi:10.1001/jama.1990.03440100021002

Reviewer's Guide. *American Family Physician*. Accessed August 6, 2023. <https://www.aafp.org/pubs/afp/reviewers.html>

Reviewer Information. *Family Medicine*. Accessed August 6, 2023. <https://journals.stfm.org/familymedicine/reviewers/>

Information for Reviewers. *Journal of the American Board of Family Medicine*. Accessed August 6, 2023. <https://www.jabfm.org/content/information-reviewers>

Jefferson T, Alderson P, Wager E, Davidoff F. Effects of Editorial Peer Review: A Systematic Review. *JAMA*. 2002;287(21):2784–2786. doi:10.1001/jama.287.21.2784

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

El-Guebaly N, Foster J, Bahji A, Hellman M. The critical role of peer reviewers: Challenges and future steps. *Nordisk Alkohol Nark*. 2023 Feb;40(1):14-21. doi: 10.1177/14550725221092862. Epub 2022 Sep 1. PMID: 36793486; PMCID: PMC9893124.

Stoesser K, Frame KA, Sanyer O, et al. Increasing URiM Family Medicine Residents at University of Utah Health. *PRiMER*. 2021;5:42. <https://doi.org/10.22454/PRiMER.2021.279738>

Boyd RW, Lindo EG, Weeks LD, McLemore MR. On Racism: A New Standard for Publishing on Racial Health Inequities. *Health Affairs Blog*. July 2, 2020. 10.1377/hblog20200630.939347.

Joint Statement of Principles. C4DISC Coalition for Diversity and Inclusion in Scholarly Communications. Accessed August 6, 2023. <https://c4disc.org/joint-statement-of-principles/>

Murdoch TB, Detsky AS. The inevitable application of big data to health care. *JAMA*. 2013 Apr 3;309(13):1351-2. doi: 10.1001/jama.2013.393. PMID: 23549579.

Sainani KL. Clinical versus statistical significance. *PM R*. 2012 Jun;4(6):442-5. doi: 10.1016/j.pmrj.2012.04.014. PMID: 22732155.

Hosseini, M., Resnik, D. B., & Holmes, K. (2023). The ethics of disclosing the use of artificial intelligence tools in writing scholarly manuscripts. *Research Ethics, 0*(0). <https://doi.org/10.1177/17470161231180449>

Defining the Role of Authors and Contributors. International Committee of Medical Journal Editors. Accessed August 8, 2023. <https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

Staiman A. Academic Publishers Are Missing the Point on ChatGPT. The Scholarly Kitchen. March 31, 2023. <https://scholarlykitchen.sspnet.org/2023/03/31/guest-post-academic-publishers-are-missing-the-point-on-chatgpt/>

Sharma H, Verma S. Predatory journals: The rise of worthless biomedical science. *J Postgrad Med*. 2018 Oct-Dec;64(4):226-231. doi: 10.4103/jpgm.JPGM_347_18. PMID: 30306968; PMCID: PMC6198688.

Worthen M, Leonard TH, Blair TR, Gupta N. Experiences of Parents Caring for Infants with Rare Scalp Mass as Identified through a Disease-Specific Blog. *J Am Board Fam Med*. 2015 Nov-Dec;28(6):750-8. doi: 10.3122/jabfm.2015.06.150080. PMID: 26546650.

Yang J, Li Y, Liu Q, Li L, Feng A, Wang T, Zheng S, Xu A, Lyu J. Brief introduction of medical database and data mining technology in big data era. *J Evid Based Med*. 2020 Feb;13(1):57-69. doi: 10.1111/jebm.12373. Epub 2020 Feb 22. PMID: 32086994; PMCID: PMC7065247.

Elle Lett, Emmanuella Asabor, Sourik Beltrán, Ashley Michelle Cannon, Onyebuchi A. Arah. Conceptualizing, Contextualizing, and Operationalizing Race in Quantitative Health Sciences Research. *The Annals of Family Medicine* Mar 2022, 20 (2) 157-163; DOI: 10.1370/afm.2792

Reddick B. Fallacies and Dangers of Practicing Race-Based Medicine. *Am Fam Physician*. 2021 Aug 1;104(2):122-123. PMID: 34383449. Vyas DA, Eisenstein LG, Jones DS. Hidden in Plain Sight - Reconsidering the Use of Race Correction in Clinical Algorithms. *N Engl J Med*. 2020 Aug 27;383(9):874-882. doi: 10.1056/NEJMms2004740. Epub 2020 Jun 17. PMID: 32853499.

Takehita J, Wang S, Loren AW, et al. Association of Racial/Ethnic and Gender Concordance Between Patients and Physicians With Patient Experience Ratings. *JAMA Netw Open*. 2020;3(11):e2024583. doi:10.1001/jamanetworkopen.2020.24583

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