



COVID-19 and the Editorial Process: Reflections from *The Journal of Pediatrics*

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The ongoing severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic and the associated novel coronavirus 2019 disease (COVID-19) shine a bright light on the critical role of peer-reviewed scientific publications in addressing health crises and informing action. As do most of our companion journals, *The Journal of Pediatrics* strives to advance what we assess to be important observations as rapidly as possible, while ensuring our readership and the public that what we publish is reliable. We reflect on the challenges to the core principles of the peer-review process and the responsibilities of journal leadership during the early phases of the medical Armageddon of an emerging catastrophic pandemic.

First, the COVID-19 experience should be a lesson for the general public on the importance of the peer review process. For the past several years, there has been an increasing view in some quarters that the peer review process is flawed and is an impediment to the rapid dissemination of vital information. Criticism has been focused on the insular nature of peer review, the “in group” hubris, and the perceived tendency to eschew novel or controversial concepts or approaches. Alternative models, such as “post-publication” peer review among others, have been touted as remedies for these weaknesses. To heavily paraphrase Winston Churchill: “peer review is the worst form of adjudication except all those worthy other forms that have been tried from time to time.”

Although not perfect, the importance of vetting through valid, trustworthy peer review has been reinforced during the current pandemic in several ways. Perhaps most publicly this is illustrated by the rise and fall of enthusiasm for hydroxychloroquine for either treatment or prophylaxis of SARS-CoV-2 infection. Initial favorable anecdotal reports were rapidly touted by the lay media and soon amplified by pundits and politicians. This publicity led to an explosion of off-label use of hydroxychloroquine, threatening access to the drug for the few patients who depended on it for established indications. It was only recognized when carefully designed and reported trials began to appear in the peer-reviewed literature that patients treated with hydroxychloroquine were being exposed to drug-related potential harm, without benefit.

Critics of conventional peer review might argue that, if hydroxychloroquine had been effective, delaying widespread use while awaiting reports from properly conducted and reviewed trials could have led to unnecessary mortality. An analysis of this argument is complex and beyond the scope of this Commentary. It is noteworthy that the elapsed time between initial reports of hydroxychloroquine’s potential

use and publication of the first results of clinical trials was measured in weeks.

Through extraordinary effort, *The Journal of Pediatrics*’ staff, expert reviewers, editors, and publishers have expedited exposure of new data while attempting to preserve their first core responsibility—scientific validity.

Our second observation is that the current technology-enabled peer review, publication, and dissemination processes have afforded immeasurable benefits and nimbleness. Preprint servers—repositories for articles that have not yet gone through peer review or been accepted by a traditional journal—have experienced a marked increase in the number of submissions related to COVID-19 research. Articles posted as preprints allow data to be shared openly, broadly, and rapidly, thus playing an important role in the dissemination of information during this crucial time. Relying on post-publication “peer review” and assuming that no harm is done from application of invalid information in the clinical medicine arena seems foolhardy.

Before 2003, submissions to *The Journal of Pediatrics* were received in hard copy and triaged, sent for review, revised by authors, edited, and sent to the publisher *all* in hard copy. The time from submission to print publication in our journal was typically 4 months. As a part of our commitment to our authors, readers, and the public to rapidly disseminate peer-reviewed research, *The Journal* has for years published articles online ahead of print (“Epub ahead of print”). In response to the COVID-19 pandemic, all articles are now published as electronic “pre-proofs” (ie, manuscripts that have been accepted for publication and edited but have not been typeset and may change before final publication), which are available online within 1 week after acceptance. Articles are updated automatically when the corrected proof and the eventual final version are ready for publication.

The all-electronic process has several obvious benefits, including immediacy, efficiency, and resource preservation. Electronic availability of the published medical literature and systems of access also have afforded important measures to enhance the protection of the integrity of the medical

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literature and its authors. For example, all submissions are subjected to an automated cross-checking process to detect potential duplicate publication and plagiarism. Additionally, sophisticated and granular tracking systems accrued from our experience identify potential reviewers targeted by their expertise and prior performance. We have had mechanisms in place to expedite review of manuscripts deemed particularly important. In March 2020, *The Journal* adapted procedures and policies to expedite management of all SARS-CoV-2 related submissions through triage, rapid review, decision, and editing by a dedicated group of journal editors. As an example, an important COVID-19-related submission moved from submission to online publication in just 4 days (*J Pediatr* 2020;224:124-8). This was accomplished without sacrificing our rigorous peer review and editorial process. Once manuscripts move from the editorial process to publication, a number of new options allow the material to be more accessible and helpful to a spectrum of readers. Although the print version of *The Journal* continues to be available, all articles are rapidly available on the journal's website (www.jpeds.com) and online indexes and databases such as ScienceDirect, Scopus, and PubMed. Readers also can access articles and journal content through a dedicated mobile app (<https://www.jpeds.com/content/mobileaccessinstructions>). The digital edition allows for rapid publication, the availability of supplemental materials, the potential for interactive graphics, links embedded within references, and other innovations. Articles may be featured in press releases and shared on social media networks to ensure wide dissemination. Although certainly not unique to our journal, these initiatives make the authors' work more rapidly and widely accessible while assuring scientific validity.

Our understanding of the clinical manifestations/complications, biology, epidemiology, and treatment of SARS-CoV-2 infections is growing and evolving rapidly. Despite careful review, it is likely that the conclusions of many published observational studies will subsequently be modified or even contradicted. In this phase, they should be considered as preliminary, serving most prominently to generate hypotheses for subsequent studies. Duplicate publication of patients has the extant risk of perceived strengthening of a conclusion by "added" numbers of "like" patients. Furthermore, in coming years, data from studies being published today will be used as the factual basis for systematic reviews and meta-analyses. These publications likely will drive the next generation of our approach to this devastating illness. This leads to our final observation regarding our editorial process, which highlights another core responsibility of protecting the validity of the medical literature.

As of July 21, 2020, a PubMed search on "COVID-19" yielded nearly 34 000 results. *The Journal* has received more than 300 submissions on the topic thus far. This sheer

volume introduces the inevitable risk of duplicate reports of individual patients. There are now several ad hoc registries of pediatric patients with COVID-19. Reports from such registries are competing with reports from professional societies, individual investigators within institutions, single institutions, and consortia of centers. The likelihood that some individual patients are included in more than 1 report is almost inevitable. However, duplicate publication presents the serious risks as outlined.

The reliability and robustness of the conclusions of any meta-analysis or systematic review depend on the integrity of the data upon which it is based. If the data are contaminated by multiple reports of single patients, studies that incorporate these data will be unreliable regardless of how carefully the analyses are conducted. Well before the proliferation of COVID-19 submissions, studies of other conditions have uncovered meta-analyses confounded by duplicate publication.

For this reason, *The Journal's* editorial team has been particularly mindful of the possibility of duplicate publication. We ask authors for assurances of the uniqueness of their data or for a specific declaration of the number of subjects and citations for patients previously reported, which also must be added to the manuscript. The editors then determine whether re-reporting adds both novel and important insights that warrant the inherent risks of duplicate publication. As an example, with the limited clinical experience of SARS-CoV-2 in children, preliminary reports were published before the novel associated multisystem inflammatory syndrome in children was described. Reclassification of some children reported as "COVID-19" (an appellation for the predominantly respiratory tract illness of adults) undoubtedly will be necessary to more accurately characterize these conditions as separate or a spectrum. We advise potential authors to first decide within an institution who will report an observation or set of patients, and then establish oversight by a single group to guard against duplicate publication. When there is necessary re-reporting, authors should err on the side of over-disclosing specifics to editors rather than deciding themselves that the purpose is different enough or the reported data do not overlap or that the audiences are different (the last is never an acceptable reason for duplicate publication). When granting their approval, institutional review boards should bear responsibility to uphold the principles of research, which would include guarding against duplicate publication.

The COVID-19 pandemic has uncovered a host of vulnerabilities and gaps in our health care system. The peer-reviewed medical literature has not escaped scrutiny. The editors and publisher of *The Journal* recommit to ensuring the rapid, wide dissemination of trustworthy information impacting the health of children everywhere. ■