



Evidence and COVID-19: Can Wisdom Be Found in Crowds?

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Short Communication

The Coronavirus (COVID-19) pandemic challenges all of us. As clinicians, we require information that is both rapidly available and reliable. Hasty publication may involve the sacrifice of rigour. So how are we to assimilate and assess the reliability of such preliminary and limited evidence as we do have without compromising quality? Whom should we trust and whom should we ignore?

Normally, we employ elaborate and time-consuming strategies, starting with peer review and culminating in hierarchies of evidence, to assess the value of what is presented to us. But, in a rapidly evolving pandemic, we do not have the time to review, appraise and synthesize the vast quantities of material that are appearing online [1]. Preprint servers enable authors to communicate their findings as soon as their manuscript is complete [2,3] but, in the absence of rigorous peer review, how can we assess whether the conclusions of such studies are justified? This dilemma presents us with an opportunity to reconsider the whole question of quality control in medical publishing.

The traditional model of peer review is cumbersome and time-consuming: Totally unsuited to informing decision-making during a pandemic. Rapid review processes rely on a selected cadre of willing reviewers and such reliance brings with it the problems associated with echo chamber effects [4]: Truly novel research may not be granted a fair hearing. So what might we propose? We live in a connected world where, every day, millions of people express opinions online. Perhaps we should consider expanding the peer review process to exploit what James Surowiecki has called "The Wisdom of Crowds" [5].

One suggestion would be to recruit a pool of interested individuals to participate in online rapid review of articles that have been submitted for dissemination. Such people do exist: The Cochrane Citizen Scientist program has recruited 17,227 contributors from 153 countries [6]. Review each submitted paper by selecting, at random, 100 pool members. Ask them to go online, within 3 days of their invitation, and submit their comments on the article. Each participant can address whatever aspects of the manuscript they wish to consider. Their comments are posted online for all other reviewers to see. There is then a 3-day period for online discussion, possibly moderated by a member of the journal's editorial team. The process is open to the authors of the paper who can, if they wish, deal with problems as they arise. At the end of this period, it ought to be possible to make an editorial decision. If not, then another iteration of the process, with another randomized group of reviewers, might be required.

If reviewers require rewards then, according to their background, a variety of incentives might be offered. Medical students and junior doctors could track their activities and incorporate them into their portfolios. More senior clinicians might be offered CME points; BMA members might be offered a discount on their annual subscription. Some people, and there are more of them than we think, will participate out of a sense of altruism and intellectual curiosity.

In the current landscape of uncertainty, people yearn more than ever for definitive answers. It is essential that we do not yield to these anxieties by hastily publishing unreliable evidence. Disseminating poor information will erode trust within the community. Evidence marketed as a certainty on a Monday, only to be discredited on a Friday, builds resentment and frustration that adds to chaos within an already tumultuous environment.

The problems with the recent papers submitted by the Surgisphere Corporation [7,8] might have been avoided had citizen scientists been deployed. A simple internet search might have raised suspicion very early in the review process. Most savvy consumers check out the fundamentals before they delve into the particulars. This is one of the ways in which crowds can be wise. Crowds are, by

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definition, pluralistic – issues of gender, race, politics and geography are far less likely to introduce bias when the net is widely cast, and the barriers to participation are set low.

If this approach were to be successfully tested during the current pandemic then it is possible that in the future, with less pressured timescales, it might be adapted to the more quotidian functions of peer review. There are many regular, but fatigued, traditional peer reviewers who might welcome such a move [9].

The way we work has changed, utterly. Whilst the majority of us have been used to working in a system where evidence, protocols and guidelines shift at a glacial pace, we have been thrust into a dynamically changing system. This zeitgeist that lends itself to a sense of immediacy fuels hasty dissemination of information which has the potential to cost, at best, evidential quality and, at worst, lives. We need to be able to ratify evidence in an agile way without losing reliability: Crowd-sourcing peer review could allow us to do this. Provided care is taken to preserve intellectual integrity and rigour, this could be the necessary catalyst for modernizing medical publishing.

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