



The BMJ, London, UK

Correspondence to: E Loder  
eloder@bmj.comCite this as: *BMJ* 2024;384:q324<http://dx.doi.org/10.1136/bmj.q324>

Published: 5 March 2024

# Mandatory data and code sharing for research published by *The BMJ*

## New policy requires authors to share analytic codes from all studies and data from all trials

Elizabeth Loder, Helen Macdonald, Theodora Bloom, Kamran Abbasi

The case for sharing data from clinical research is strong.<sup>1,2</sup> Clinical study data include all information collected during a study, which is then analysed using computer codes to generate results. Unimpeded access to both data and code across the research community maximises the value of each research project. It shows respect for the efforts of research participants and the economic contributions of the public. It enables data scrutiny and re-analyses, which are essential for the self-correcting activities that contribute to good science and better patient and population outcomes.

Code sharing, in particular, makes it possible to evaluate analytical decisions that cannot easily be described in the methods section of a paper but have an important effect on results. It is plausible, for example, that requirements for code sharing might have deterred submission, or prevented publication of, the fraudulent Surgisphere papers published during the pandemic.<sup>3</sup> Although there are practical challenges and potential harms associated with data sharing, we believe they are outweighed by the benefits. There are fewer such concerns when sharing code.

*The BMJ* is committed to transparency in research. In 2013, we required authors of drug and device trials published in the journal to agree to share relevant trial data on reasonable request.<sup>4</sup> In 2015, this requirement was extended to all clinical trials published in the journal.<sup>5</sup> Sadly, not all authors honoured this promise, and sharing of trial data remains disappointingly low.<sup>6,7</sup> Barriers include the time and effort required to ensure that data are organised and useable, and fears among some researchers that competitors might gain unfair academic or commercial advantages or misuse or misinterpret the data.

It is time for the next step. From 1 May 2024, *The BMJ* will require authors of all submitted trials to post relevant trial data in an enduring, publicly accessible repository such as Vivli<sup>8</sup> before publication. Repositories organise and store study data so that they can be retrieved and used by other researchers. We encourage authors of trials currently accepted for publication to voluntarily adhere to this policy. A link to the trial data will be included in the data sharing statement on every research paper published in *The BMJ*. Data sharing should not be confined to trials, and *The BMJ* intends to broaden its data sharing policy to non-trial research in future. But practical problems remain for observational studies and other non-trial research, such as permissions and privacy of data held in registries.

We will also require submission of relevant analytical code in a supplementary file that will be permanently

accessible alongside each paper.<sup>9</sup> Our new policy on code sharing applies to all research we publish, and a new code availability statement will be included in research papers. Other journals are moving in this direction as well. Springer Nature has announced a policy to require code availability statements in articles in its journals, and to encourage authors to share code publicly and cite code they have used.<sup>10</sup>

Details about this new policy, acceptable data repositories, and requirements for code sharing can be found on [bmj.com](https://www.bmj.com) in our advice to contributors (<https://www.bmj.com/about-bmj/resources-authors/article-types>). We hope that you will support us in enhancing transparency and scrutiny of medical research. It is important to put the public good ahead of personal, academic, and corporate interests. We welcome your views.

Competing interests: *The BMJ* has judged that there are no disqualifying financial ties to commercial companies. The authors declare no other interests. Further details of *The BMJ* policy on financial interests are here: <https://www.bmj.com/sites/default/files/attachments/resources/2016/03/16-current-bmj-education-coi-form.pdf>.

Provenance and peer review: Commissioned; not externally peer reviewed.

- Goldacre B, Morton CE, DeVito NJ. Why researchers should share their analytic code. *BMJ* 2019;367. doi: 10.1136/bmj.l6365 pmid: 31753846
- Locher C, Le Goff G, Le Louarn A, Mansmann U, Naudet F. Making data sharing the norm in medical research. *BMJ* 2023;382. doi: 10.1136/bmj.p1434. pmid: 37433610
- Shultze A, Tazare J. Improving the transparency of medical research: the role of programming code sharing [response to: Abbasi K. A commitment to act on data sharing. *BMJ* 2023]. <https://www.bmj.com/content/382/bmj.p1609/rr-3>
- Godlee F, Groves T. The new BMJ policy on sharing data from drug and device trials. *BMJ* 2012;345:e7888. doi: 10.1136/bmj.e7888. pmid: 23169872
- Loder E, Groves T. The BMJ requires data sharing on request for all trials. *BMJ* 2015;350. doi: 10.1136/bmj.h2373. pmid: 25953153
- Naudet F, Sakarovich C, Janiaud P, et al. Data sharing and reanalysis of randomized controlled trials in leading biomedical journals with a full data sharing policy: survey of studies published in *The BMJ* and *PLoS Medicine*. *BMJ* 2018;360. doi: 10.1136/bmj.k400. pmid: 29440066
- Hamilton DG, Hong K, Fraser H, Rowhani-Farid A, Fidler F, Page MJ. Prevalence and predictors of data and code sharing in the medical and health sciences: systematic review with meta-analysis of individual participant data. *BMJ* 2023;382:e075767. doi: 10.1136/bmj-2023-075767. pmid: 37433624
- Vivli. Global clinical research data sharing platform. <https://vivli.org/>
- Silberzahn R, Uhlmann EL, Martin DP, et al. Many analysts, one data set: making transparent how variations in analytic choices affect results. *Adv Methods Pract Psychol Sci* 2018;1:1-56. doi: 10.1177/2515245917747646.
- Springer Nature announces uniform open code policy. 2024. <https://group.springernature.com/gp/group/media/press-releases/unified-code-sharing-policy-promoting-open-science/26789930>