

Commentary

Failure to Post Clinical Trial Results: A Serious Threat to Public Trust

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Majority of registered clinical trials fail to post their data even after a year of completion. No other causal factor appears to explain this failure adequately so that deliberate selective reporting in commercial interest is most likely to be involved. Since regulators, journal editors and academics appear to have failed to arrest this trend, citizen science needs to take active steps and challenge the concerned researchers, regulators and journal editors too.

Most clinical trials are funded by pharma companies and therefore a financial interest is inevitable. There for there are stringent norms and regulations on clinical trials. All clinical trials need to be pre-registered specifying a number of details about the proposed plan. The study design as well as appropriate updates are to be made public on the registry portals. The portals have a mandatory provision and expectation to make the summary of results public^[1]. Being in public domain, any claims made from the trials are verifiable and this is a sound and necessary scientific norm. However, notwithstanding the mandate, a vast majority of clinical trials do not post their summary results data even after a year or more from the date of completion. Our exploration of *clinicaltrials.gov* for six diseases revealed that between two third to three forth of interventional trials completed before March 2025, (so that they have more than one year time to post their data) had not posted their results (Table 1).

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It is likely that clinical researchers think that results of the trials that are perceived clinically unimportant need not be made public, although the regulators do not explicitly say so. For drugs that are not ultimately approved, the trial results may not be perceived as important. Similarly for trials with smaller enrolment sizes, the results might be perceived unimportant. But such perception does not seem to

adequately explain the failure to post data. The drugs approved and aggressively marketed had only slightly better record of posting data. The enrolment size explains only a small part of the failure (Table 1). Further the trials from which publications are made in top ranking journals cannot be said to be unimportant trials. Many trials having high impact publications also stand without posting their data. The fact that papers are published or press notes are released implies that data organization and analysis has progressed adequately. At this stage there is no reason to delay or avoid posting. It is therefore difficult to understand the causes of large-scale failure to post results without considering the possibility of deliberate selective reporting.

Disease	Percentage of results posted	A drug in the market	% posted	Enrollment size Predictive power (McFadden's R ² expressed as percentage)
Type 2 diabetes mellitus	28.0%	semaglutide	42.75	37.8%
Alzheimer's	35.03%	donepezil	34.55	6.3%
Parkinson's	28.02%	levodopa	35.47	4.9%
COPD	29.15%	tiotropium	60.62	11.0
Arthritis	30.99%	adalimumab	61.15	12.4%
Depression	27.17%	escitalopram	46.89	1.0%

Table 1. The proportion of interventional and completed (before 31st March 2025) clinical trials for 6 diseases with their results posted on clinicaltrials.gov. Note the overall poor rate of data posting, even for drugs approved and commonly used in clinical practice.

The situation might be even worse for clinical trial registration in some other countries^[2]. Even more concerning is the fact that papers often get published in high impact journals without posting the results. For examples, see the two papers published in 2026 by the Lancet ^{[3][4]} which haven't posted their data even after the date of publication. Often public declarations are made^[5] about the main results of a clinical trial but the data are not available in the public domain. So, the readers do not have the option to

quickly check the claims with original data. Despite early concerns raised^[6], the proportion of reported trials seems to have declined instead of improving. The multiple players in the game include (i) the regulators (ii) the pharma companies (iii) journal editors (iv) the academics without a conflict of interest and (v) the ultimate consumer. We argue here that the failure to post data does not serve the interests of any of them, unless hiding the results is intentional and misleading people is the purpose. Let us examine the possible roles of all the stake holders.

- i. The regulators: While at times, the regulators can conditionally exempt or allow late posting of data^[7], it is expected to be an exception rather than the rule. The large-scale reluctance to post data clearly indicates failure of the regulatory bodies. Although posting the data is a mandate, there is no clarity on what action needs to be taken on failure to post. The fact appears to be that it is possible to get away without making the data transparent and that's why a large proportion of clinical trials are able to keep their outcomes hidden.
- ii. The profit makers: The pharma companies are known to have commercial interests and that's why regulating authorities are needed to ensure fairness of clinical trials. Posting clinical trial data should be in the interest of pharma companies since not posting the data enables and strengthens the accusation of deliberate reporting bias, in order to mislead the market^{[8][9][10][11]}. The PIs, institutions and funder of clinical trials need to ensure transparency and easy availability of the results in order to avoid such accusations, unless selective reporting and misleading the reader is intentional. It can be understood if commercial interests induce selective reporting of convenient results and hiding the inconvenient ones. The pharma companies need to take extra care to demonstrate that this is not the case. Posting all the data after completion is an essential part of the required care.
- iii. Research journals: Journals publishing clinical trial-based papers could have ensured that at least for the papers they published, data are posted on the registration site. But journal editors' role in preventing selective reporting is bound to be limited. Only those trials whose results are convenient are more likely to be used in writing papers. Journal editors have no control on trials whose results are not published.
- iv. Academics in basic science: There is always a community of researchers without direct conflict of interests. It is interesting that hardly anyone from this community raises a concern about non-transparency of clinical trial data. This presumably reflects the altered motivation of researchers, brought about by the research evaluation systems. While publishing in high impact journals is

valued, raising concerns on published work or scientific sleuthing has little value in career evaluation. Furthermore, the pharma sector is a potential research funder for them. Therefore, career minded academics are not expected to waste their time in raising such concerns. It is not surprising that most scientific sleuths work outside academia. But currently most of the toolkits of the sleuths address image manipulation and plagiarism. Data transparency has not taken central stage in this community as yet.

- v. If regulators, journal editors, researchers in academia are unable to ensure data transparency citizens interested in their health rights need to do this. Citizens need to question the validity of drugs whose 100 % trial results are not posted. Research is not a monopoly of academia and industrial R and D sector. Citizens can be good researchers too. We suggest that citizens undertake systematic reviews and meta-analyses with slightly more inclusive norms. Systematic reviews need to mention the number of data-unposted trials and their enrolment sizes for a given drug. Assuming that the unpublished trials did not show any beneficial effect of the drug, the net enrollment size including such trials should be used for calculating and reporting indices such as absolute risk reduction (ARR) or numbers needed to treat (NNT). Citizens can also file public interest litigations and demand data transparency; they can legally challenge drug approvals without 100 % data posting.

We don't believe that all academics and journal editors are "sold out" as sometimes politically accused. They can certainly take up the issues in an appropriate way. The rate at which clinical trial results remain hidden is certainly alarming and brings the entire science behind medicine under question. Supporters of sound science need to ensure transparency in science at any cost to avoid losing public trust.

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