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EDITORIALS

New preprint server for medical research

Announcing the launch of medRxiv for faster access to better evidence

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Preprints—preliminary versions of research articles—have been circulated among researchers for many decades. Initially, hard copies of manuscripts would be sent to collaborators and peers around the world for comments before formal journal submission. With the advent of the internet, physicists, in particular, embraced electronic circulation of preprints, primarily on the arXiv (https://arxiv.org/) preprint server. Researchers in the life sciences have followed suit more recently,[1] particularly using the bioRxiv preprint server (https://biorxiv.org). But clinical researchers have been slower to embrace electronic preprints for fear of their potential to cause harm.

The main arguments in favour of sharing work in its preliminary form are, firstly, that science works faster if work is made available sooner after it is completed and, secondly, that articles are improved by feedback from a wider group of readers, alongside formal peer review by a few experts. Simple estimates suggest that halving the delay to sharing a research result can double the speed at which research progresses.[2] Ambitious research funders are now embracing preprints and other measures that aim to accelerate the pace of research.[3]

But there have been concerns about providing public access to preliminary clinical research.[4-6] Might it result in more health scares or harm to individual patients? There is some evidence that preprints can accelerate progress in handling outbreaks of infectious disease,[7] but what about less obviously urgent medical research? Can the need for speed be balanced with suitable safeguards to protect the public?

This debate is not new for *The BMJ*: over 20 years ago Tony Delamothe, the journal's deputy editor, asked *The BMJ's* readership what we should do about electronic preprints,[8] and the responses[9] were similar to discussions now. The headline conclusion reached by Delamothe was that clear labelling of preprints might allow them to be used safely.[8] As a result, BMJ launched the first clinical preprint server, ClinMedNetPrints.org, in 1999. The server operated until 2008 and received around 80 submissions before it was closed because of lack of use.

But times have changed, and we believe the need for an independent clinical preprint server remains. Clinical research can currently be found scattered on various preprint servers, ranging from bioRxiv and arXiv to servers established by publishers to link to their journals.[10] We believe that the community will be served best by a preprint server that is specific to clinical research so that suitable safeguards can operate and by one that is not linked to specific journals or publishers but provides a central freely accessible archive.

BMJ (publisher of *The BMJ*) is therefore announcing its partnership with colleagues at Yale University and Cold Spring Harbor Laboratory to launch medRxiv. Harlan Krumholz and Joseph Ross, clinician-researchers at Yale, have long been advocates of preprints,[4] while Cold Spring Harbor Laboratory operates the bioRxiv life sciences preprint server. BMJ brings its long experience of publishing and review of clinical research, researching the effects of changes in publishing,[11] and publication ethics.[12]

In working to launch medRxiv we have focused on light-touch processes and workflows that we believe will reduce the potential for harm while retaining the advantages of speed and openness. A first step will be for authors to make various declarations about the work: how it has been conducted and reported, any conflicts of interest, and details of ethical approval. Then, all manuscripts will undergo several rapid rounds of screening before they are posted. The first will ensure that a manuscript is a research article (medRxiv will not accept case reports or opinion pieces, for example) and will cover obvious legal problems such as plagiarism and defamation. Then, a researcher in a relevant field will check the basic content and organisation of the article—but medRxiv does not endorse a manuscript's methods, assumptions, conclusions, or scientific quality. And finally, a key screening question will be whether a preprint, if posted, has the potential to do harm to individual patients or the public. If in doubt medRxiv will not post the preprint; the authors will be encouraged instead to publish only after peer review.

By posting preprints, authors can help promote openness and transparency and reduce research waste from duplicated efforts and non-reporting. By helping ensure a balance of safety and speed, we believe medRxiv can provide a valuable service to the clinical research community. We will regularly report on any research that we do on the effect of preprints, and we encourage third parties to contact us for research opportunities. We also urge all readers of *The BMJ* and its sibling journals to

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read and deposit preprints in medRxiv. We look forward to reporting on its progress over the coming months.

Competing interests: We have read and understood BMJ policy on declaration of interests and declare the following interests: CR and TB are cofounders of medRxiv. Both are employed full time by BMJ.

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