Testing new solutions to incentivize best practice in data sharing and promote data reuse

INTRODUCTION

Sharing research data in repositories is considered best practice but most researchers who share research data do so by other methods. We tested 2 solutions to see if they would increase the use of data repositories by PLOS authors, and/or increase how often datasets associated with PLOS articles are accessed:

1. Integration of the Dryad repository into the manuscript submission system of *PLOS Pathogens* (launched Oct 2021) accompanied by marketing and communication tactics
2. An "Accessible Data" icon (badge) added to articles, across all PLOS journals, that link to data in either the OSF, Dryad or Figshare generalist data repositories (launched Mar 2022)
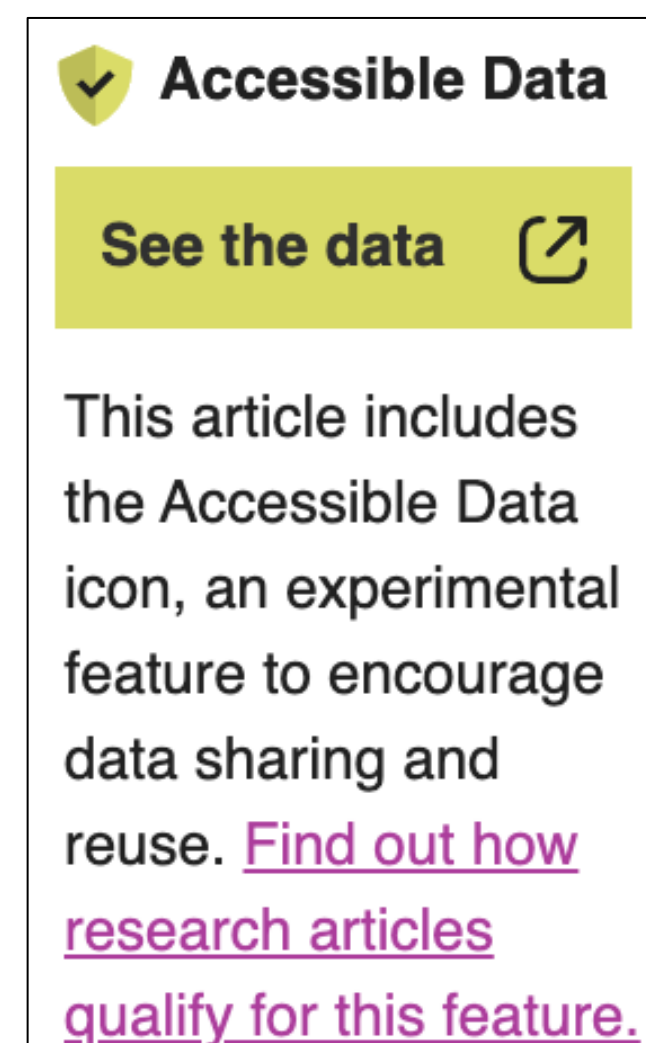
🛡 **Accessible Data**

See the data ↗

This article includes the Accessible Data icon, an experimental feature to encourage data sharing and reuse. Find out how research articles qualify for this feature.

Figure 1:
The Accessible Data icon

METHODS

We assessed the impact of the solutions by:
- Monitoring the number of authors who interacted with the Dryad integration and the number of deposited datasets
- Monitoring the number of views and downloads received by datasets linked to articles with the Accessible Data icon
- The number of clicks by readers on the Accessible Data icon (Figure 1)
- An author survey about the solutions

Surveys were open from October 2021 to July 2022. Follow-up interviews were conducted with 12 researchers.

RESULTS

During the first 12 months 2% of authors submitting to *PLOS Pathogens* used the Dryad integration but only two thirds of these authors completed the deposit to Dryad. The survey (n=654) responses indicated that authors' awareness of the Dryad integration was relatively low, both before (16% aware) and during (37% aware) the manuscript submission process. The survey also revealed 21% of authors had already uploaded the data elsewhere before submitting their manuscript. The Accessible Data icon was added to 3335 articles at initial launch and a further 639 in the following 9 months. In 9 months, we recorded more than 12,500 reader clicks on the icon across all articles that displayed it. Monthly views of 541 Figshare datasets linked to articles with the icon showed no statistically significant differences to the number of views before and after the feature was added, but the number of these datasets with zero views fell from 50% to 42% after the feature was added (see Figure 2). Our survey found that awareness of the Accessible Data feature was not correlated with increased use of repositories, but those respondents who use repositories reported they were more likely to use a repository that results in the icon being awarded to their article. Interview responses suggested the Accessible Data icon could help to normalise the practice of data sharing.

DISCUSSION

Offering the Dryad data repository integration to authors using the Editorial Manager submission system is unlikely to substantially increase rates of data repository use unless there are additional incentives, such as policy requirements. Manuscript submission is possibly too late in the research workflow, or messaging about the repository is not sufficiently visible. Although the Accessible Data icon did not increase sharing in repositories in the study period, readers did interact with the feature and 40% of survey respondents believed the availability of the icon will make them more likely to share in a repository in the future. Respondents who had previously not used a data repository were more likely (45%) to believe in the positive impact of the icon on future sharing in a repository. It may be too soon to assess the impact of the Accessible Data feature on sharing behaviors.
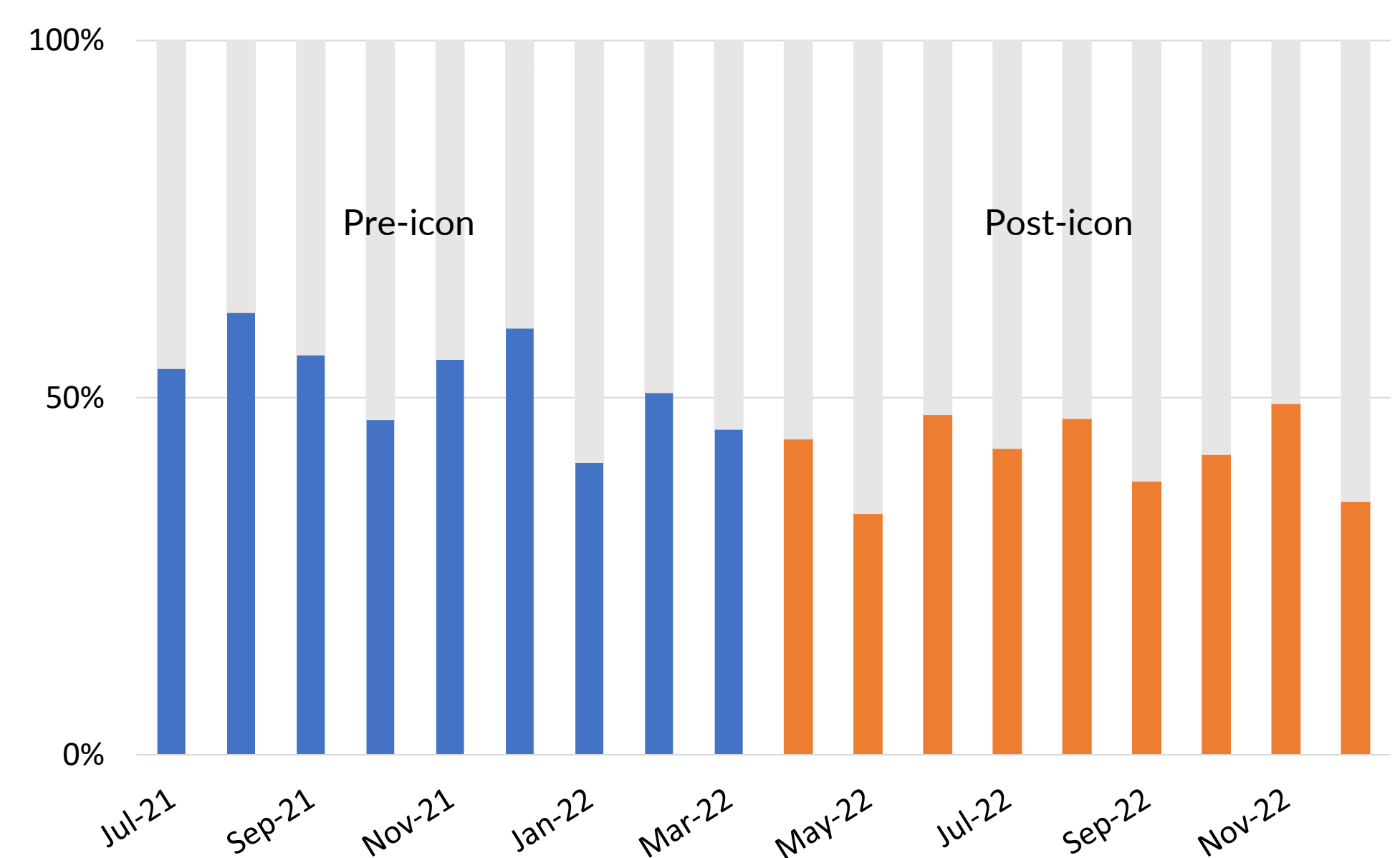

Figure 2: Percentage of datasets in Figshare associated with the Accessible Data icon that received no views

Lauren Cadwallader[a*], Marcel LaFlamme[b] and Iain Hrynaszkiewicz[a] [a]PLOS, Cambridge, UK; [b]PLOS, San Francisco, CA, USA
* lcadwallader@plos.org

Take a picture to see the survey data ·······

Or visit this DOI: 10.6084/m9.figshare.22762469