

## Can librarians contribute to increasing value and reducing waste in medical research?

Expanding library services directly in response to widely documented concerns in medical research would raise the profile of the library and would be well received by the librarians' institutions and organisations.

The recently published [Lancet series on waste](#) in biomedical research provides a fascinating and thought provoking glimpse into the complex world of medical research and the myriad of issues that can disrupt completion and use of high quality research. A domain where innovative ideas, rigorous ethics, participant choice, conflicts of interest, funder regulations and pressure to publish all compete with each other frequently resulting in poorly designed and conducted research and misreported or incompletely reported publication of research results. Ultimately, these competing factors can contribute to the inability of study findings to inform further research or clinical practice which in turn impacts upon patient care.

The series focuses on how to increase value and reduce waste at different stages in the research cycle (research priority setting, research design, conduct and analysis, research regulation and management, inaccessible research, incomplete or unusable research reports). Numerous recommendations are outlined by the series authors to try to tackle these issues. The recommendations, which are targeted at professionals involved in health research, are set in context and provide practical steps to improve the research process and ensure that all research that is undertaken is conceived, performed and reported well, is accessible and is able to reliably contribute to the global body of medical evidence to enable excellence in patient care.

There is, however, another group of professionals who could also contribute to improving the value of medical research: librarians and information specialists.

Health/medical librarians are well placed to help to address and raise awareness of many of the issues raised in the Lancet series papers as they support the work of the health-related researchers referred to in the series. In recent years, librarians have been expanding their roles undertaking a wide range of information provision services often in non-traditional library settings. Expanding library services directly in response to widely documented concerns in medical research would raise the profile of the library and would be well received by the librarians' institutions and organisations who are themselves continuously striving to conduct and publish high quality research.

Helping to address and raise awareness of many of the issues raised in the Lancet series can be achieved relatively easily by librarians through, for example, incorporation into existing or creation of new workshops/education sessions, literature searching services or current awareness bulletins. The following recommendations for librarians have been compiled in direct response to the recommendations set out in the Lancet series and can be implemented through either formal training sessions/workshops or informal contact with individual researchers.

### Summary of areas addressed by recommendations

- |                        |                              |
|------------------------|------------------------------|
| * Study protocols      | * Open access                |
| * Research standards   | * Institutional repositories |
| * Study registers      | * Reporting guidelines       |
| * Literature searching | * Retracted papers           |

## 10 Recommendations for librarians

- Promote librarian involvement in comprehensive literature searching to gather existing evidence before new research studies are instigated. This will ensure that all new research will address current uncertainties rather than unnecessarily duplicating previous work. [*Relates to paper 1, recommendation 3; paper 3, recommendation 1; paper 5*].
- Raise awareness about the importance of study protocol development, guidelines for writing protocols (e.g. [SPIRIT](#)) and encourage researchers to make their protocols publicly accessible. [*Relates to paper 4*].
- Establish a literature search service specifically targeting development of study protocols or analysis plans with the aim to identify current studies that are investigating the same or a similar research topic. [*Relates to paper 1, recommendation 4; paper 2, recommendation 1; paper 3; paper 4*]

- Encourage researchers to obtain the protocols (where available) for all included studies to ensure that what is stated in the protocol corresponds to the content of the published research report that is to be included in the review. [*Relates to paper 4*].
- Raise awareness of the availability of study registers such as clinical trial registers (e.g. [clinicaltrials.gov](http://clinicaltrials.gov)) and systematic review registers (e.g. [PROSPERO](http://PROSPERO)), the benefits of registering studies, and the requirements for reporting when the study is complete. [*Relates to paper 1, recommendation 4; paper 3, recommendation 1; paper 4*].
- Highlight sources of information about study design, standards for conducting research and research ethics, including guidance and courses being run by organisations such as the [Health Research Authority](http://Health Research Authority), [Medical Research Council](http://Medical Research Council), [National Institute for Health Research](http://National Institute for Health Research), [Research Design Service](http://Research Design Service), [National Institute for Health Research](http://National Institute for Health Research), [National Research Ethics committee](http://National Research Ethics committee). Perhaps initiate a joint workshop with members of the local Research Ethics Committee or Research Services Department. [*Relates to paper 2, recommendation 2*].
- Recommend and promote high quality open access journal titles to researchers looking for advice on where to publish their work. [*Relates to paper 4*].
- Advocate the registering, archiving and deposit of final research reports in online institutional repositories. [*Relates to paper 5*].
- Raise awareness about [reporting guidelines](http://reporting guidelines) (e.g. [CONSORT](http://CONSORT)) and highlight the importance of accurate titles and abstracts which can affect the successful retrieval of papers from bibliographic databases. [*Relates to paper 5, recommendation 3*].
- Launch a current awareness service specifically highlighting retracted papers. Researchers often cite papers that they have previously identified and downloaded and are unaware of retraction notices posted on publisher websites or in bibliographic databases. [*Relates to paper 5*].

As the series authors indicate there is no single or quick fix, all actors (whether industry, publishers, governments, funders, regulators, researchers or academic institutions) involved in biomedical research must work together to transform the research system to ensure that all future medical research produces “reliable and accessible evidence that addresses the challenges faced by society and the individuals who make up that society” (Kleinert & Horton, 2014, p198). Librarians can play an essential and vitally important role in supporting individual health-related researchers and institutions in their efforts to achieve this. By implementing these easily achievable recommendations librarians can have a direct impact on the quality and usability of future research.

**Shona Kirtley, Senior Research Information Specialist, EQUATOR Network, [shona.kirtley@csm.ox.ac.uk](mailto:shona.kirtley@csm.ox.ac.uk).**

### **Lancet Waste Series papers**

**Paper 1.** Chalmers I, Bracken MB, Djulbegovic B, Garattini S, Grant J, Gülmezoglu AM, Howells DW, Ioannidis JP, Oliver S. How to increase value and reduce waste when research priorities are set. *Lancet*. 2014;383(9912):156-165.

PMID: [24411644](https://pubmed.ncbi.nlm.nih.gov/24411644/)

**Paper 2.** Ioannidis JP, Greenland S, Hlatky MA, Khoury MJ, Macleod MR, Moher D, Schulz KF, Tibshirani R. Increasing value and reducing waste in research design, conduct, and analysis. *Lancet*. 2014;383(9912):166-175.

PMID: [24411645](https://pubmed.ncbi.nlm.nih.gov/24411645/)

**Paper 3.** Al-Shahi Salman R, Beller E, Kagan J, Hemminki E, Phillips RS, Savulescu J, Macleod M, Wisely J, Chalmers I. Increasing value and reducing waste in biomedical research regulation and management. *Lancet*.

2014;383(9912):176-185. PMID: [24411646](https://pubmed.ncbi.nlm.nih.gov/24411646/)

**Paper 4.** Chan AW, Song F, Vickers A, Jefferson T, Dickersin K, Gøtzsche PC, Krumholz HM, Ghersi D, van der Worp HB. Increasing value and reducing waste: addressing inaccessible research. *Lancet*. 2014;383(9913):257-266.

PMID: [24411650](https://pubmed.ncbi.nlm.nih.gov/24411650/)

**Paper 5.** Glasziou P, Altman DG, Bossuyt P, Boutron I, Clarke M, Julious S, Michie S, Moher D, Wager E.

Reducing waste from incomplete or unusable reports of biomedical research. *Lancet*. 2014;383 (9913):267-276. PMID: [24411647](https://pubmed.ncbi.nlm.nih.gov/24411647/)

### **Lancet Waste Series comments**

Kirtley S. Increasing value and reducing waste in biomedical research: librarians are listening and are part of the answer. *Lancet*. 2016;387(10028):1601. PMID: [27116055](https://pubmed.ncbi.nlm.nih.gov/27116055/)

Kleinert S, Horton R. How should medical science change? *Lancet*. 2014;383(9913):197-198. PMID: [24411649](https://pubmed.ncbi.nlm.nih.gov/24411649/)

Macleod MR, Michie S, Roberts I, Dirnagl U, Chalmers I, Ioannidis JP, Al-Shahi Salman R, Chan AW, Glasziou P. Biomedical research: increasing value, reducing waste. *Lancet*. 2014;383(9912):101-104. PMID: [24411643](https://pubmed.ncbi.nlm.nih.gov/24411643/)

### **References**

1. Kleinert, S., & Horton, R. (2014) How should medical science change? *Lancet*, 383(9913);197-198. PMID: [24411649](https://pubmed.ncbi.nlm.nih.gov/24411649/)