

# Impactful librarians: identifying opportunities to increase your impact

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## Abstract

*Librarians and information specialists are continually seeking innovative ways to expand services, raise the visibility of the library and demonstrate impact. This article proposes novel opportunities for librarians and information specialists to extend their impact within their research support role by helping to positively influence the quality, transparency and future usability of health research publications produced by the clinicians and researchers in their organisation and to contribute to tackling wider issues within biomedical research. In the current economic climate it is imperative that librarians and library services are viewed as proactive, responsive, and supportive of the research needs of their organisation in their joint goal of striving for research excellence.*

**Key words:** librarians; information dissemination; information services; publishing; biomedical research.

## Introduction

Since the publication in 2014 of the five papers in the Lancet Series on Research: *increasing value, reducing waste* (1-5) that highlighted serious issues in research prioritisation, design, conduct, reporting and regulation there has been much discussion in the medical literature about waste in biomedical research (6-8). Roberts and Ker (7) recently drew attention to the problems of including small, often poor quality trials, frequently found as a result of thorough literature searches, in systematic reviews and an editorial published last year by Glasziou (9) argues that open access can help to solve issues with post-publication research waste. Both question the status quo and call for improvements in fields where librarians have already established roles in supporting these research-related activities. More specifically, in the past few years the medical literature has been peppered by studies evaluating the quality of research publications, highlighting deficiencies in the reporting of published research and conference abstracts (10-16). The reporting-related deficiencies exposed include publication bias, selective reporting and evidence of poor descriptions of analyses, interventions, outcomes and adverse events. Poor reporting not only

compromises the reliability and usefulness of research publications it also negatively impacts on the work of librarians and information specialists for example by hindering the indexing of publications in bibliographic databases and by impeding efficient literature searching and retrieval. This adversely affects the efficiency of library services and wastes the limited time and resources of librarians and information specialists.

Numerous calls to help address these increasingly frequently reported concerns regarding biomedical research publications presents librarians and information specialists with opportunities to elevate the presence of the library service and increase its impact. Being aware of the ever-changing needs of our users and responding by introducing new services is something that we all do. With an estimated 85% of investment in biomedical research wasted (17) it is becoming increasingly important for solutions to be sought and implemented to ensure that all biomedical research is well-designed and conducted and that research reports are accurate and usable for informing clinical decisions and future research studies. Solving such complex and widespread issues will involve many actors but librarians have an important role to play in ensuring

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that such investments do not continue to be wasted. This is particularly so with regard to increasing the awareness of and use of reporting guidelines.

### **Increasing impact: reporting guidelines**

One key international initiative, established in response to the growing evidence of serious deficiencies in the health research literature discussed previously, is the EQUATOR Network (18). The EQUATOR Network seeks to improve the reliability and value of medical research literature by promoting transparent and accurate reporting of research studies. The Network provides free online access to a comprehensive collection of health research reporting guidelines (currently listing 284 different reporting guidelines) and other resources to help all those involved in conducting or supporting health-related research and its publication. The Network also organises educational courses and training workshops, conducts research and provides advice on the development of new reporting guidelines. Reporting guidelines are statements that provide advice on how to report research methods and findings, outlining a minimum set of items that should be included in reports of biomedical research and often take the form of a checklist and/or flow diagram. They have been designed to help clinicians and researchers to write up their research study for publication and studies demonstrate that their use can lead to improved, more accurate and transparent reports of research (19, 20). Examples include CONSORT for reporting randomised controlled trials, PRISMA for reporting systematic reviews and STROBE for reporting observational studies (21-23). Librarians are excellently placed to raise awareness and encourage implementation of reporting guidelines amongst the clinicians and researchers with whom they work since, in day-to-day practice health librarians come into contact with researchers at many points during the conduct of a research study (such as during the scoping or planning stages, helping with the literature review or helping advise on appropriate journals to submit to) (see *Box 1*). Librarians could very easily use these opportunities to raise awareness of reporting guidelines and advise researchers on the appropriate reporting guideline to use to write up their study, thereby incorporating awareness-raising about good research reporting

practices into existing tasks. Additional opportunities to influence the uptake of reporting guidelines include: promotion through leaflets, posters, library bulletins, current awareness services or social media; adding links to reporting guidelines from library website pages or apps; raising awareness in library induction or research support training sessions; running specific library-led research reporting workshops. As reporting guidelines have been specifically designed to improve biomedical research publications, librarians, by adopting some simple awareness-raising practices, can demonstrate real impact with regards to influencing the completeness, transparency and quality of the research publications produced by their institution/organisation by highlighting that they have for example: indirectly improved the reliability of literature searching and indexing; helped ensure that research studies provide a more reliable basis for making clinical decisions or for inclusion in further research; helped research results to be transferred into practice more quickly. Importantly, librarians and information specialists can demonstrate to the head of their organisation that the library is playing a fundamental role in improving the quality of the research output of the organisation. In fact, encouraging the use of reporting guidelines also benefits librarians and information specialists themselves as studies that are well reported, particularly in terms of the title and abstract, will be easier to index when added to bibliographic databases, will be easier to search for when developing and conducting literature searches and will be easier to identify when sifting the results of a literature search. Such studies will also be easier to critically appraise.

The EQUATOR Network is in the process of setting up a dedicated network and a toolkit for librarians and information specialists with the specific aim of helping make it as easy as possible for librarians to support their users in improving the quality of the research papers they publish. The Network is also in the process of establishing a pilot collaborative project with Ana Patricia Ayala, Instruction & Faculty Liaison Librarian at the Gerstein Science Information Centre at the University of Toronto with a specific focus on improving access to reporting guidelines and encouraging their use.

### *Increasing impact: reporting guidelines*

- Seize all opportunities to raise awareness of reporting guidelines when providing help to researchers during the various stages of their study
- When providing the results of literature searches advise researchers on the appropriate reporting guideline to use to write up their study
- Promote reporting guidelines through leaflets, posters, library bulletins, current awareness services or social media
- Add links to reporting guidelines to library website pages and apps
- Raise awareness of reporting guidelines during library induction or research support training sessions
- Run specific library-led research reporting workshops

### *Increasing impact: responding to the Lancet Series on increasing value and reducing waste in biomedical research*

- Promote librarian involvement in identifying all existing evidence before grant applications for new studies are submitted to ensure that new research will address current uncertainties rather than unnecessarily duplicating previous work
- Raise awareness about the importance of study protocol development, guidelines for writing protocols and encourage researchers to make their protocols publicly accessible
- 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
- Encourage researchers to obtain the protocols for all included studies in a review to ensure that what is stated in the protocol corresponds to the content of the published research report
- Raise awareness of the availability of study registers, the benefits of registering studies, and the requirements for reporting when the study is complete
- Highlight sources of information about study design, standards for conducting research and research ethics
- Recommend and promote high quality open access journal titles to researchers looking for advice on where to publish their work
- Advocate the registering, archiving and deposit of final research reports in online institutional repositories
- Raise awareness about reporting guidelines and highlight the importance of accurate titles and abstracts
- Launch a current awareness service specifically highlighting retracted papers as researchers are often unaware of retraction notices

### **Box 1.** *Recommended actions for librarians and information specialists to increase library impact*

#### **Increasing impact: responding to the Lancet Series on increasing value and reducing waste in biomedical research**

To return to the much wider issue of waste in biomedical research discussed earlier, there are many ways in which librarians and information specialists can respond to the increasing calls for improvement. Indeed, the visibility and impact of library services could be improved greatly by responding to such pleas. A few simple additions to

everyday tasks or training sessions can impact positively upon the research output of the clinicians and researchers with whom librarians and information specialists work (see Box 1). Some examples, previously outlined in a blog post (24), of research support that librarians and information specialists could provide that specifically address the recommendations set out in the Lancet Waste series include: promoting librarian involvement in systematically gathering together all existing

evidence before new research studies are instigated thus ensuring that all new research will address current uncertainties rather than unnecessarily duplicating previous work; raising awareness about the importance of study protocol development, guidelines for writing protocols (e.g. SPIRIT) and encouraging researchers to make their protocols publicly accessible; establishing 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; encouraging 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 a systematic review; raising awareness of the availability of study registers such as clinical trial registers (e.g. clinicaltrials.gov) and systematic review registers (e.g. PROSPERO), the benefits of registering studies, and the requirements for reporting when the study is complete; highlighting sources of information about study design, standards for conducting research and research ethics; recommending and promoting high quality open access journal titles to researchers looking for advice on where to publish their work; advocating the registering, archiving and deposit of final research reports in online institutional repositories; raising awareness about reporting guidelines (e.g. CONSORT) and highlighting the importance of accurate titles and abstracts which can affect the successful retrieval of papers from bibliographic databases; launching a current awareness service specifically highlighting retracted papers as researchers often cite papers that they have previously identified and are unaware of retraction notices. Promoting newly introduced services in the context of responding to important topical concerns documented in the international medical literature, such as the Lancet Series, will raise the profile of the library and reassure clinicians, researchers and ultimately institutional/organisational management that the library, its staff and the services provided are proactive, up-to-date and focussed on addressing real needs.

A campaign called the REWARD Alliance (25) was recently launched to bring together the array of different stakeholders (which includes librarians and information specialists) tasked with addressing the

complex issues raised in the Lancet Series on waste in biomedical research.

Whether tackling issues specifically focusing on reporting research in publications or more general concerns regarding biomedical research, this article highlights that expanding library roles and services is achievable and it importantly provides librarians with an opportunity to demonstrate that they can have a direct impact on the quality, reliability and usability of future research and have an important wider role to play in efforts to reduce research waste. Included here are just some examples that could help to increase the impact and visibility of library services in their pursuit of excellence in supporting biomedical research. Exactly how one selects measures and indicators to use to meaningfully evaluate and assess the impact of such new support services is an additional question and is beyond the scope of this article.

### Conclusions

Ultimately, librarians and information specialists must keep abreast of the opinions and concerns of their clinical and biomedical research colleagues and listen and respond with innovative new services addressing such issues and pleas. Being proactive and keeping on top of the medical literature to identify new widely-held concerns is just one way of achieving this. Tailoring new services directly in response to widely documented concerns in medical research can raise the profile of the library and will help ensure that the library is seen as responsive in developing and delivering support to clinicians and researchers that is cutting-edge and is therefore valued and sought-after. This would be well received by the librarians' institutions and organisations who are themselves continuously striving to conduct and publish high quality research. In the current economic climate, librarians increasingly have to justify their services in light of funding restrictions. By adopting additional roles or expanding library services that have a direct impact on the quality of the research output of their organisation librarians can demonstrate that they have a fundamental role in its overall academic success.

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## REFERENCES

1. Al-Shahi Salman R, Beller E, Kagan J, Hemminki E, Phillips RS, Savulescu J, et al. Increasing value and reducing waste in biomedical research regulation and management. *Lancet* (London, England). 2014;383(9912):176-85.
2. Chalmers I, Bracken MB, Djulbegovic B, Garattini S, Grant J, Gulmezoglu AM, et al. How to increase value and reduce waste when research priorities are set. *Lancet* (London, England). 2014;383(9912):156-65.
3. Chan AW, Song F, Vickers A, Jefferson T, Dickersin K, Gotzsche PC, et al. Increasing value and reducing waste: addressing inaccessible research. *Lancet* (London, England). 2014;383(9913):257-66.
4. Glasziou P, Altman DG, Bossuyt P, Boutron I, Clarke M, Julious S, et al. Reducing waste from incomplete or unusable reports of biomedical research. *Lancet* (London, England). 2014;383(9913):267-76.
5. Ioannidis JP, Greenland S, Hlatky MA, Khoury MJ, Macleod MR, Moher D, et al. Increasing value and reducing waste in research design, conduct, and analysis. *Lancet* (London, England). 2014;383(9912):166-75.
6. Dechartres A, Ravaud P. Better prioritization to increase research value and decrease waste. *BMC medicine*. 2015;13:244.
7. Roberts I, Ker K. How systematic reviews cause research waste. *Lancet* (London, England). 2015;386(10003):1536.
8. Yordanov Y, Dechartres A, Porcher R, Boutron I, Altman DG, Ravaud P. Avoidable waste of research related to inadequate methods in clinical trials. *BMJ* (Clinical research ed). 2015;350:h809.
9. Glasziou P. The role of open access in reducing waste in medical research. *PLoS medicine*. 2014;11(5):e1001651.
10. Chang L, Dhruva SS, Chu J, Bero LA, Redberg RF. Selective reporting in trials of high risk cardiovascular devices: cross sectional comparison between premarket approval summaries and published reports. *BMJ* (Clinical research ed). 2015;350:h2613.
11. Dwan K, Altman DG, Clarke M, Gamble C, Higgins JP, Sterne JA, et al. Evidence for the selective reporting of analyses and discrepancies in clinical trials: a systematic review of cohort studies of clinical trials. *PLoS medicine*. 2014;11(6):e1001666.
12. Korevaar DA, Cohen JF, de Ronde MW, Virgili G, Dickersin K, Bossuyt PM. Reporting Weaknesses in Conference Abstracts of Diagnostic Accuracy Studies in Ophthalmology. *JAMA ophthalmology*. 2015:1-5.
13. McMahon NE, Holland EJ, Miller C, Patel K, Connell LA. Activities to support the implementation of complex interventions as part of routine care: a review of the quality of reporting in cluster randomised controlled trials. *BMJ open*. 2015;5(10):e008251.
14. Vedula SS, Li T, Dickersin K. Differences in reporting of analyses in internal company documents versus published trial reports: comparisons in industry-sponsored trials in off-label uses of gabapentin. *PLoS medicine*. 2013;10(1):e1001378.
15. Zorzela L, Golder S, Liu Y, Pilkington K, Hartling L, Joffe A, et al. Quality of reporting in systematic reviews of adverse events: systematic review. *BMJ* (Clinical research ed). 2014;348:f7668.
16. Makhni EC, Padaki AS, Petridis PD, Steinhaus ME, Ahmad CS, Cole BJ, et al. High Variability in Outcome Reporting Patterns in High-Impact ACL Literature. *The Journal of bone and joint surgery American volume*. 2015;97(18):1529-42.
17. Chalmers I, Glasziou P. Avoidable waste in the production and reporting of research evidence. *Lancet* (London, England). 2009;374(9683):86-9.
18. equator-network.org. Oxford: The EQUATOR Network; [cited 2015 November 17]. Available from: <http://www.equator-network.org/>.
19. Chhapola V, Tiwari S, Brar R, Kanwal SK. Impact of 'CONSORT extension for abstract' publication on the reporting quality of abstracts of Randomised controlled trials in high impact journals of pediatrics- an interrupted time-series analysis. *Journal of clinical epidemiology*. 2015.
20. Maclean EN, Stone IS, Ceelen F, Garcia-Albeniz X, Sommer WH, Petersen SE. Reporting standards in cardiac MRI, CT, and SPECT diagnostic accuracy studies: analysis of the impact of STARD criteria. *European heart journal cardiovascular Imaging*. 2014;15(6):691-700.

21. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS medicine*. 2009;6(7):e1000097.
22. Schulz KF, Altman DG, Moher D. CONSORT 2010 statement: updated guidelines for reporting parallel group randomized trials. *Annals of internal medicine*. 2010;152(11):726-32.
23. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Annals of internal medicine*. 2007;147(8):573-7.
24. Kirtley S. Can librarians contribute to increasing value and reducing waste in medical research? [Internet]. Oxford, UK. 2014. [cited 2015 November 17]. Available from: <http://www.equator-network.org/2014/02/28/can-librarians-contribute-to-increasing-value-and-reducing-waste-in-medical-research/>.
25. [researchwaste.net/](http://researchwaste.net/). UK: The REWARD Alliance; [cited 2015 November 17]. Available from: <http://researchwaste.net/>.