

TITLE: Where to now? Searching beyond Medline and other major bibliographic databases

AUTHORS: Matt Holland (Corresponding Author), Librarian, Library and Knowledge Service for NHS Ambulance Services in England;

Michelle Dutton, Librarian, Trust Library Services, Manchester NHS Library;

Steve Glover, Head of Library Services, Trust Library Services, Manchester NHS Library. Email: Matt.Holland@nwas.nhs.uk

VERSION: This is an ACCEPTED DRAFT. See the original article here [<https://doi.org/10.12968/jpar.2021.13.2.81>] See the policy relating to Green Open Access for Journal of Paramedic Practice here [<https://v2.sherpa.ac.uk/id/publication/12211>]

CITE AS: Holland, M., Dutton, M., & Glover, S., et al, 2021. Where to now? Searching beyond Medline. *Journal of Paramedic Practice*, 13 (2), 81-83. Available from: <https://doi.org/10.12968/jpar.2021.13.2.81>

Summary

Questions relating to specific clinical queries can generally be answered using established sources such as databases and books. You might consider broadening your search and using some of the tools in this article if:

- there is very little published research in your area of interest and you need to look at a broader range of materials to find information to support your enquiry;
- you need “real world” examples for change or quality improvement projects that are likely to be described in case studies, reports, commentaries and other forms of grey literature;
- where the historical or organisational context is important and you need to look for primary sources that originate from, or describe the organisation or situation that interests you;
- where the topic is new and published material is not available and you need to explore a range of published and unpublished sources such as conference papers, presentations, preprints, websites or personal communications and identify the network of researchers likely to be working in a new area of research.

It is important to be critical of the material you find especially if it is from a source you don't know, if it has not gone through peer-review, or if you suspect the journal may be predatory. If you need help and advice consult your local NHS healthcare library where librarians can offer you expert guidance. You can find a directory of NHS healthcare libraries here [<https://www.hlisd.org>].

Subject and Institutional and Repositories

Repositories are essentially large databases of published and sometimes unpublished material. They are organised in two ways, around the published outputs of institutions,

typically a university or research centre, these are also called institutional repositories, or around a subject/discipline area. An example of a relevant institutional repository is amber [<https://amber.openrepository.com>]. amber contains publications by staff and researchers working in NHS ambulance services in England from 2006 to date. amber is a unique record of publications about paramedicine and contains records of publications not included in the major bibliographic databases mentioned in the introduction to this article. A search of amber will inform any research endeavour in the area of ambulance services and related topics. An example of a subject repository in biomedical and life sciences would be European PubMed Central [<https://europepmc.org>].

A number of search tools search multiple repositories to save you the trouble of searching them individually. Core (COnnecting REpositories) [<https://core.ac.uk>] is a search tool provided by the JISC and the Open University in the UK that has a global reach. BASE (Bielefeld Academic Search Engine) based in Germany [<https://www.base-search.net>] searches repositories and other sources with a similar global reach.

Academic Search Engines

Academic Search Engines (ASEs) search for scholarly content on the web. The most well-known is of course Google Scholar [<https://scholar.google.com>]. However, there are others search engines including Microsoft Academic Search [<https://academic.microsoft.com>] and ScienceOpen [<https://www.scienceopen.com>]. ASEs are characterised by their size. Google scholar is estimated to contain over 389 million records (Gusenbauer 2019) Microsoft Academic Search over 200 million records and ScienceOpen 64 million records. All three include features such as personal profiles linked to your publications and citations. While Google Scholar has a spare search interface both ScienceOpen and Microsoft Academic are feature rich allowing you better opportunities to refine your search. Microsoft Academic is distinctive in using Microsoft's artificial intelligence (AI) technology which goes beyond just keyword searching. Whichever ASE you choose use, and you may use more

than one, the point here is that they reach deep into the web to find material that you won't find in traditional bibliographic databases such as Medline and CINAHL.

Grey Literature

Grey literature is the reports and documents published by governments and their agencies, business and industry and academia that are not published by commercial publishers. In an organisation as complex as the NHS with its many trusts and agencies this is a particularly rich pool of information to search in. Health Education England supports its own grey literature service the National Grey Literature Collection [<http://allcatsrgrey.org.uk/wp>]. NICE also provide NHS Evidence Search – the Google of the NHS – [<https://www.evidence.nhs.uk>] to enable access to the selected quality sources on health care and public health. For a broader perspective, WorldCat's OIAster database searches open source material from across the world [<https://oaister.worldcat.org>].

Theses

Theses completed in the UK universities are deposited with the British Library. To make better use of this rich resource the British Library publish EThOS e-theses online service [<https://ethos.bl.uk>]. EThOS allows you to search over 500,000 theses many of which are available in full text for download. The service is free, however, you are required to register. In addition to EThOS there is a website dedicated to PhD's in the area of paramedicine ParamedicPhd [<https://www.paramedicphd.com>] which has a worldwide coverage.

Preprints

A preprint is a version of a research manuscript published before peer review. Typically these are published electronically and made publicly available on large databases or preprint servers. Publishing a preprint aims to speed up the process of disseminating research avoiding the delays caused by the publication process. Publishing research as a preprint allows you to generate a conversation around your research and gain feedback from others.

Authors would normally seek to publish their research in a peer-reviewed journal at a later date. Preprints have become more important as a source of information during the COVID19 Pandemic as the need for speed in the dissemination research has outpaced the traditional publishing process. However, reputable pre print servers urge caution when using preprints. This warning comes from the home page of medrxiv

“Caution: Preprints are preliminary reports of work that have not been certified by peer review. They should not be relied on to guide clinical practice or health-related behavior and should not be reported in news media as established information.”

The preprint servers most relevant to health are medRxiv [<http://medrxiv.org>] and bioRxiv [<http://biorxiv.org>]. The search interface for both medRxiv and bioRxiv are relatively unsophisticated. You can use medrxivr [<https://mcguinlu.shinyapps.io/medrxivr/>] a customised search app that adds a number of helpful features to improve your search. You also have the option of using Google Advanced Search [https://www.google.co.uk/advanced_search] which allows you to search specific websites.

Preprint Search Engines

The Open Science Foundation preprint search engine, OSF Preprints [<https://osf.io/preprints>] searches the preprint collections OSF hosts and other preprint servers. The OSF website claims to search over 1 million preprints. The National Institutes for Health (NIH) have developed a pilot search project for preprints related to COVID19 [<https://icite.od.nih.gov/covid19/search/>] with the aim of speeding dissemination of research. Preprints is a fast moving area of publishing and we may expect new preprint servers and related tools to be added to the ones described in this article.

Predatory Journals

Predatory journals exploit a publishing model where the author pays to publish articles that are usually made freely available on the web. Predatory journals deceive authors by

claiming to provide peer review and editorial services but in fact publishing anything submitted without scrutiny for a fee. Predatory journals use a number of strategies to disguise their true nature, however, with a few precautions and checks it is possible to identify and avoid them. Use the Think, Check, Submit [<https://thinkchecksubmit.org>] website for advice on how to spot predatory journals and publishers. There is a guide taking a slightly different approach on the LKS ASE website [<https://ambulance.libguides.com/predatoryjournals>].

This matters because as you leave the safety of quality assurance provided by major bibliographic databases and use tools like Google Scholar, predatory material will show up in your searches. In fact one of the tell-tale signs of a predatory journal is the claim to be “Indexed by Google”.

Keywords:

preprints, literature searching, amber, repositories, predatory journals.

Key points:

This article looks at the tools available to you extend your search beyond the major bibliographic sources. The article identifies the type of literature you can find and which tools are suitable to use to find them. It aims to help you to broaden the scope of your search to find more relevant material. There is a warning about predatory journals and the need to take a critical approach to material that has not been peer reviewed.

Reflective questions:

How would you use amber - the ambulance service repository to support your CPD and research?

How might you use the tools discussed in this article to inform your own approach to searching the literature?

Do you understand the nature of predatory journals and the risks they pose to authors and researchers?

References

Gusenbauer, M. Google Scholar to overshadow them all? Comparing the sizes of 12 academic search engines and bibliographic databases. *Scientometrics* **118**, 177–214 (2019).
<https://doi.org/10.1007/s11192-018-2958-5>

Accepted Draft