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TITLE: Where to look: sources of research in paramedicine

## Introduction

This article summarises key sources for paramedicine research. It identifies an approach to searching that is most likely to bring you success, starting with synthesised sources and working towards individual studies. The types of sources you should include in your search are described and specific examples are given. Common questions about the search process are addressed with some suggested answers. This article is the third in a series of articles. The first looks at searching beyond the core sources discussed here (Holland, Dutton and Glover 2021a), the second looks at the tools and techniques for effective and efficient searching (Holland, Dutton and Glover 2021b).

## Approaches to Searching

The summary is arranged in a particular order with the synthesised sources first and individual studies last. When searching you are advised to work through these resources starting with synthesised sources and finishing with individual studies. This is because high quality sources synthesised by experts are most likely to give you an overview or “helicopter view” of the topic based on the best available research. Using this sound foundation you can extend the boundaries of your topic in a direction you wish to go by searching other sources. Where the synthesised source is not recent you can fill in the gap between the date it was published and the current date with more recent research.

There are two caveats to this approach. First, not all topics will have literature in each of the categories described. The point here is to look. Your search is considerably weakened if for example a systematic review existed but you did not locate it. If nothing appropriate exists then you can move onto other sources confident that you have checked. Second, as with all searching it is best to view the process as iterative. As you review the results of your search you may want to rethink your approach to your topic and revisit the process again. Flexibility is always advised.

## Synthesised Sources

These are systematic summaries conducted by experts in the field using the best available research. Typically such reviews would comment on the quality of the evidence to give you an idea of the reliability of the conclusions.

Synthesised sources would include:

**Systematic Reviews and Meta-Analyses:** These are high-level overviews of primary research studies that aim to identify, select and synthesise relevant research published on a particular topic using a rigorous methodology.

**Point of Care Tools:** These give fast access to filtered summaries of evidence providing background, context and current recommendations for the management of clinical problems and conditions.

**Clinical Practice Guidelines:** Systematically developed statements to assist practitioner decisions about appropriate care for specific clinical circumstances.

## Finding Tools for Synthesised Sources

To locate **systematic review and meta analyses** search [The Cochrane Library](#) and [TripPro](#). You should also consider searching [BestBets](#), a resource that originally specialised in Emergency Medicine, although it has extended its coverage into other clinical areas.

The chosen **point of care tools** for the NHS in England is [BMJ Best Practice](#), you may also have access through a university or NHS library to [DynaMed](#) (EBSCO) or [UpToDate](#) (Elsevier).

The primary set of guidelines for ambulance services in the UK is [JRCALC](#). You can search for other clinical practice guidelines using [NHS Evidence Search](#). For more general clinical guidelines use the [NICE Guidelines](#) and [SIGN](#) (Scottish Intercollegiate Guidelines Network) websites.

## Specialised Finding Tools

These are tools created with a specific audience in mind. These tools provide fast access to the most relevant literature. However, they should always be supported by searches of more general database like MEDLINE and CINAHL to give a broader perspective.

For paramedicine specialised finding tools include [amber](#) the research repository for ambulance services in England and [BestBets](#). They might also include databases aimed at the Emergency Preparedness, Resilience and Response (EPRR) community [Disater Lit](#) from the National Library of Medicine (NLM) and [Special Collection: all-hazards articles in the scholarly literature](#) from the U.S. Fire Administration.

## Primary Studies

These are research studies reporting original research published in peer reviewed journals, occasionally published as conference proceedings or conference abstracts reporting presentations at peer reviewed conferences. Exceptionally, this might also include preprints, a version of an article or paper published before peer review. Preprints precede the normal but lengthy publication process in areas where fast dissemination of research is important, most recently research around COVID19.

## Finding Tools for Primary Studies

To find primary studies use the major bibliographic medical databases PubMed, MEDLINE and EMBASE. Additionally you should search databases aimed at nursing and allied health professionals these would include CINAHL (which indexes the *Journal of Paramedic Practice* and *British Paramedic Journal*) and EMCARE.

## How do I know my search is finished?

Knowing when your search is finished is a judgement you make based on the criteria you should have set yourself in your search plan. Broadly, these points would be an indication that you have are reaching the end of your search:

- **Triangulation** – your search finds articles you have already located elsewhere. At this point further searching is unlikely add anything new to your set of journal articles.
- **Critical mass** - it is unwise to set numeric targets but if you had 15 – 30 relevant journal articles that might include for example a recent systematic review or summary of the literature then you should have a sound basis for your research/project.
- **Closing the Gap** – if you are working from a relevant systematic review or meta-analysis you need only search for the period from the year it was published to the current year which will set useful parameters to your search.
- **Hitting your target journals** – this advice is highly dependent on your topic and the profile of the literature it generates, with that qualification if you find that you are locating relevant results in core journals in your area of research then you can be reasonably confident in your search. In paramedicine this might include: [British Paramedic Journal](#), [Emergency Medicine Journal](#), [Journal of Paramedic Practice](#), [Prehospital Emergency Care](#), [Resuscitation](#), [Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine](#).

## What if I can't find anything relevant?

One possible outcome of your search is not finding anything that is relevant. If this happens you will either have a problem with your search or a “problem” with the literature.

Problems with your search might include spellings, a structural problem with the way your search is implemented or not identifying the right language or vocabulary to describe your topic.

Problems with the published literature might include: a topic that is too recent to have generated much published research. Some areas of clinical practice are so accepted or routine that they haven't generated recent research, although there may be extensive older studies. It might be that the context is inappropriate and change the focus of your search will yield better results, for example moving from just a prehospital/paramedic focus to including community and primary care. Ultimately, you may have identified a gap in the literature.

## Gaps in the literature

If there is simply no literature you may have to change topic if finding literature, for an assignment for a course for example, is a priority. If it is the topic is important you might try to answer these questions based on the outcome of your search.

1. *Where in the literature does your topic sit?* What is the broader context where published research does exist? At what point does the research stop?
2. *Why is there a gap?* Articulate a coherent explanation for the lack of published research.
3. *What research needs to be completed to fill the gap?* Show that you understand the questions that need to be addressed and methodologies that need to be deployed to fill the “gap” even if you don't have the resources to do it. This demonstrates your grasp of the topic.

## CPD Reflection Questions

1. Apply the model described in this article to your next literature search. Did it improve your search results?
2. Check what access you have to the databases identified in this article and to other resources through [LKS ASE](#) and [NHS healthcare libraries](#). Remember to self-register for your [NHS OpenAthens](#) account.
3. Review this article in conjunction with the two other articles in this series, see References.

## References

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

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