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The development of an updated prehospital search filter for the Cochrane Library: Prehospital Search Filter Version 2.0

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Background

Prehospital care is a dynamic domain. Emerging roles, changes to clinical scope and practice, and changing terminologies have highlighted the ongoing need to identify and critically appraise prehospital research. In 2004, Smith, McDonald, Wasiak, Jennings, MacPherson and Archer reported on the development of a prehospital literature search filter for The Cochrane Library.¹ The search filter was designed to provide a comprehensive and transparent methodology to identify research conducted in the prehospital environment. At the time the authors identified that the search filter would need to be modified over time to reflect changes in the literature and the scope of prehospital care.¹ This paper reports on the first modification of the original search filter. The Prehospital Search Filter Version 2.0 was developed to ensure that the search filter continues to capture all relevant research and remains a useful tool in identifying prehospital literature.

As the focus of prehospital care continues to shift from simple treatment and transport roles to complex and sophisticated clinical interventions, there has been a corresponding increased need to base policy, practice, and delivery decisions on the highest possible levels of evidence. A prerequisite to adopting any evidence-based approach in health care is the need to assemble a body of evidence derived from the results of rigorous studies. This body of evidence, in the form of controlled trials and systematic reviews, should be easily accessible to facilitate implementation into education, practice, and delivery.²

Another important aspect of developing the prehospital evidence base is the undertaking, dissemination, and implementation of findings of systematic reviews. In order for these reviews to be as comprehensive as possible, search methodologies need, to some extent, to sacrifice specificity to ensure high sensitivity, ensuring that all potential articles can be identified and considered for inclusion in reviews. The problem of balancing sensitivity and specificity has been encountered while striving to improve existing search filters in other clinical domains.³

Over the past decade, several groups of researchers have sought to review prehospital based research literature.⁴⁻⁹ Analysis of the prehospital randomised trials identified by these studies

has revealed gaps in the evidence base for current prehospital practice and policy. As well as a lack of randomised trials, these studies question the scientific rigor of much prehospital research. For example, an analysis of the out of hospital based studies included in issue 4, 2005 of the Cochrane Library found only 413 relevant studies.² Of these only 13 were systematic reviews (less than 1% of the total systematic reviews in the Cochrane Library) and 63% of the trials were related to resuscitation and cardiac care, indicating that the data does not encompass the broad scope of out of hospital care.² Accessibility of the literature is also problematic. In a systematic review by Wilson, Cooke, Morrell, Bridge and Allan in 2002, it was found that only half of the prehospital research is even indexed in electronic databases.⁸

Research Question

To identify terms now used in the prehospital care literature and to describe additional search terms relevant to prehospital care which empirically improve the sensitivity of the previous search filter for The Cochrane Library developed by Smith, McDonald, Wasiak, Jennings, MacPherson and Archer.¹

Methodology

After reviewing a convenience sample of recent publications in the prehospital academic literature, and through professional engagement with clinical leaders and academic colleagues, the authors compiled a list of new search terms that had entered the lexicon of prehospital care in recent years. This list was widely circulated amongst academic and clinical peers for assessment of face validity and to seek suggestions of any additional search terms that may have been overlooked.

Results

We tested all possible new search terms on The Cochrane Library 2010, Issue 2, keeping those terms that found new reports and discarding those terms that did not. The original search filter contained 8 useful MeSH terms and 19 useful text search terms. Testing all of the additional terms revealed that there were no new useful MeSH terms, but there were an additional 6 useful text search terms. As with the original search filter, the scope of the filter is deliberately broad and which places sensitivity ahead of specificity to ensure completeness of data capture.

New useful text search terms which have been identified are:

advanced life support
community support co-ordinator
community support coordinator
emergency care practitioner
extended care practitioner
physician assistant

On 31 May 2010 we tested all additional useful search terms on The Cochrane Library 2010, Issue 2. The search returned 38,648 reports, which is an additional 1,604 reports compared to the Prehospital Search Filter Version 1.0 which returned 37,044 reports (also tested on the same date). Further analysis and review of the additional reports found 20 which were identified as relevant to the prehospital environment. For completeness we also attach in Appendix 1 (below) a list of all of the search terms that were discarded in the testing of the updated filter.

Conclusion

The original prehospital literature search filter is still a robust searching tool. This updated prehospital literature search filter had marginally improved the sensitivity of the original search filter, without a corresponding small decrease in specificity. We invite you to use this search filter and ask that this paper be acknowledged as the source.

Revised search filter terms

MeSH terms

- #1 emergency medical services
- #2 emergency medical technicians
- #3 emergency treatment
- #4 emergency medicine
- #5 ambulances
- #6 air ambulances
- #7 first aid
- #8 military medicine

Text terms

- #9 prehospital
- #10 pre-hospital
- #11 paramedic*
- #12 ambulance*
- #13 out-of-hospital
- #14 out of hospital
- #15 ems
- #15 emt
- #17 emergency services
- #18 emergency medical service*
- #19 emergency technician*
- #20 emergency practitioner
- #21 emergency dispatch*
- #22 emergency despatch*
- #23 first responder*
- #24 public access defibrillation
- #25 emergency rescue
- #26 emergency resus*
- #27 emergency triage
- #28 advanced life support
- #29 community support co-ordinator
- #30 community support coordinator
- #31 emergency care practitioner
- #32 extended care practitioner
- #33 physician assistant
- #34 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30 or #31 or #32 or #33

Glossary of Terms

MeSH = is the acronym for “Medical Subject Heading”. MeSH is the authority list of terms used for subject analysis of the biomedical literature.

Text term = allows you to search the text of literature for specific terms.

or = retrieves documents that contain at least one of the specified search terms.

and = retrieves documents containing both terms.* = the use of a symbol to search only part of a term to retrieve variant endings of that term.

References

1. Smith E, McDonald S, Wasiak J, Jennings P, MacPherson C, Archer F. The development of a prehospital search filter for the Cochrane Library. *Journal of Emergency Primary Health Care*. 2004;2(1-2)
2. Smith E, Jennings P, McDonald S, MacPherson C, O'Brian T, Archer F. The Cochrane Library as a Resource for Evidence on Out-of-Hospital Health Care Interventions. *Annals of Emergency Medicine*. 2007;49(3):344-350.
3. Sladek RM, Tieman J, Currow DC. Improving search filter development: a study of palliative care literature. *BMC Medical Informatics and Decision Making* 2007;7(1):18
4. Sayre MR, White LJ, Brown LH, McHenry SD. National EMS Agenda Writing Team. National EMS Agenda. [erratum appears in *Prehosp Emerg Care*] 2003 Oct-Dec;7(4):433.
5. Brazier H, Murphy AW, Lynch C, Bury G, on behalf of the Ambulance Responsive Time Sub-Group of the National Ambulance Advisory Committee. Searching for the evidence in pre-hospital care: a review of randomised controlled trials. *J Accid Emerg Med* 1999;16:18-23.
6. Brice JH, Garrison HG, Evans AT. Study design and outcomes in out-of-hospital emergency medicine research: A ten year analysis. *Prehospital Emergency Care* 2000;4:144-150.
7. Callaham M. Quantifying the Scanty Science of Prehospital Emergency Care. *Annals of Emergency Medicine* 1997;30(6): 785-790.
8. Kwan I, Bunn F, Roberts I, Wentz R. The development of a register of randomized controlled trials in prehospital trauma care. *Prehospital Emergency Care* 2002;6(1):27-30.
9. Wilson S, Cooke M, Morrell R, Bridge P, Allan T. A systematic review of the evidence supporting the use of priority dispatch of emergency ambulances. *Prehospital Emergency Care* 2002;6(1):42-49.

Appendix 1: Terms considered for inclusion in the updated search filter that did not retrieve any additional reports.

advanced care paramedic
ambulance community officer
community paramedic
extended care paramedic
flight paramedic
intensive care paramedic
isolated practice area paramedic
paramedic assistant
paramedic clinician
paramedic community support co-ordinator
paramedic community support coordinator
paramedic consultant
paramedic practitioner
remote area paramedic
rural and remote paramedic
rural hospital support paramedic

