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

Erin Smith  
erin.smith@med.monash.edu.au

Frank Archer

Stephen Burgess  
stephen.burgess@med.monash.edu.au

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## COCHRANE CORNER

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

**Stephen Burgess, Erin Smith, Sarah Piper, Frank Archer**  
Department of Community Emergency Health and Paramedic Practice  
Monash University, Melbourne, Australia, and  
Field Co-ordinator, Cochrane Prehospital and Emergency Health Field



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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.<sup>1</sup> 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.<sup>1</sup> 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.<sup>2</sup>

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.<sup>3</sup>

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

*Author(s): Stephen Burgess*

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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.<sup>2</sup> 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.<sup>2</sup> 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.<sup>8</sup>

### **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.<sup>1</sup>

### **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**

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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.

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**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.

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**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

