



Between chronic and advanced: Developing a heart failure search filter

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Introduction

Heart failure (HF) is a major disease with increasing prevalence and incidence. [1] It is a progressive disease with a poor prognosis that causes substantial burden to patients, their carers and families and to the health system, generally. [2-3]. HF care is provided in many settings including hospitals, residential aged care facilities and the community.

More recently, there has been growing interest in the intersect of heart failure and palliative care. [4-5] For HF patients, quality of life and advance care planning are important issues.

Searching for literature can be difficult and time consuming for clinicians and yet they rely on access to inform their clinical practice. [6] Filters, or experimentally tested search strategies objectively assessed for their retrieval effectiveness, are an important mechanism to support health professionals searching for clinical information.

Aim

The initial aim of this study was to develop an advanced heart failure filter. Preliminary analysis of literature and feedback from a Clinical Advisory Group indicated that given mortality and morbidity rates and an uncertain trajectory, palliative care issues should be considered for all HF patients.

The aims were revised as follows:

1. To develop a subject search filter for Heart Failure using included studies from multiple evidence based HF guidelines as a gold standard.
2. To experimentally test this HF filter using relative recall as a measure of its performance.

Method

A Clinical Advisory Group was established. A Gold Standard set of articles was derived from the articles of four HF guidelines. This set was then randomly divided into three subsets for - search term identification, filter development and filter testing.

Performance of individual terms and the subject filter was assessed using relative recall, i.e., the number of items from the Gold Standard set that were retrieved. All development work was in Ovid Medline.

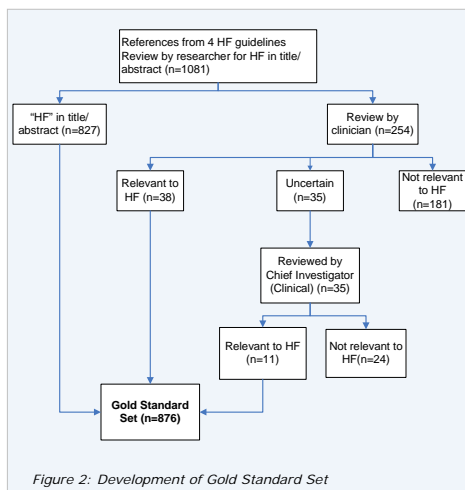


Figure 2: Development of Gold Standard Set

Results

Four HF guidelines were selected by the Clinical Advisory Group for the study. All references were reviewed to determine whether they were relevant to HF and could be retrieved as HF. This led to a Gold Standard Set with 876 articles. (Figure 2)

Frequency analysis of MeSH terms and text word analysis of titles and abstracts in the Term Development Set (TDS) identified possible search terms for use in filter development. (Table 1)

Other frequently occurring content terms were identified to inform the development of topic searches.

The filter development work is nearing completion. The relative recall rates for the identified MeSH and text words are being determined.

The performance of the best performing search will be then be tested in the Filter Test Set (FTS). This will then form the HF filter.

Table 1: Frequencies of MeSH terms and Textwords (TDS)

Mesh	No.	%
Heart Failure	62	70%
Ventricular Dysfunction, Left	14	16%
Natriuretic Peptide, Brain	10	11%
Heart rate	10	11%
Haemodynamics	10	11%
Prognosis	10	11%
Quality of Life	10	11%
Severity of Illness	10	11%
Survival Analysis	10	11%
Textword Analysis		
Heart Failure	77	88%
Congestive Heart Failure	36	41%
New York Heart Association	24	27%
Left Ventricular Ejection Fraction	23	26%
CHF	20	23%
Chronic heart failure	17	19%
Cardiomyopathy	15	17%

Discussion

The frequency analysis work has demonstrated some of the searching complexities. 'Heart failure' as a MeSH term did not retrieve all the articles from HF guidelines that had been checked for relevance and retrieval. Some articles that included 'heart failure' as a textword in the title or abstract were not indexed with 'heart failure' as a MeSH term.

Topics that are frequently occurring in the HF articles will be developed into expert searches to run in combination with the HF filter. Topic searches will also be developed for palliative care issues such as advance care planning or bereavement within the HF context. This could support the use of palliative care approaches by clinical groups caring for HF patients.

Following a PubMed equivalence study a public online PubMed HF Filter will be made available through the web.

Implementation

Facilitating access to relevant HF literature and evidence would be an important step in enhancing clinicians' knowledge.

This research work will create an entry point for health professionals in palliative care and in cardiology to support searching for HF literature. A public web page will provide access to the HF filter plus the HF filter combined with a set of clinically important topics such as dyspnoea, decompensated, advance care planning. By clicking on a hyperlink using the PubMed version of the HF filter, a real time automated search will be initiated.

A similar entry point has been developed for palliative care literature within the CareSearch website. (Figure 3) This has 60 searches that broker access to the literature within PubMed.

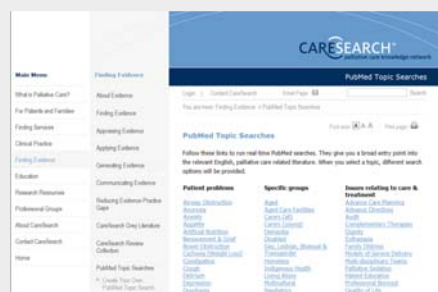


Figure 3: Example of entry page allowing automated access

The heart failure filter and associated content pages will be available within the CareSearch website at www.caresearch.com.au from September 2010.

Conclusion

Search filters can facilitate access to literature and evidence and reduce the burden on clinicians with respect to searching. A HF filter could support patient care and clinical decision-making.

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References

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Funding: This work is part of the CareSearch project funded by the Australian Government Department of Health and Ageing.

Acknowledgements: Ms Raechel Damarell, Research Officer, has been instrumental in developing this research work.

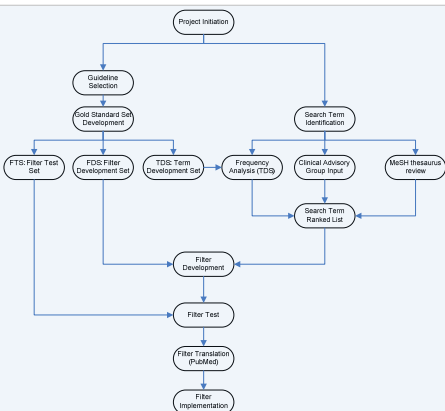


Figure 1: Schematic Representation of Filter Development