Optimizing Bibliographic Retrieval of Adult Cardiac Surgery Records in Medline (Ovid) and PubMed in Collaboration with Patients

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Background

- In 2020, our multidisciplinary team, including patient partners, conducted a scoping review that was published in the *Journal of Thoracic and Cardiovascular Surgery* [1]
- We recognized a need to easily find information on adult cardiac surgery for both clinicians and patients
- Therefore, we set out to develop a highly sensitive search filter on adult cardiac surgery in Medline (Ovid) and to translate it to PubMed for patient usage

Methods

- We used guidelines to create our gold standard set of references, based on existing methodology[2-5]
- We retrieved 80 cardiac surgery guidelines. The references from these guidelines were collected, deduplicated and screened (Fig. 1)
- Articles were excluded if the subject was outside the scope of adult cardiac surgery (i.e. thoracic surgery, vascular surgery, interventional cardiology, etc.)
- After screening, 3,071 articles made up our gold standard set
- PubReMiner and SR Accelerator WordFreq were used to identify subject headings and keywords not in the initial search concept. Group members were also consulted to the suitability of these new terms.

Results

- The search strategies were created using a mix of controlled vocabulary (MeSH) and keywords related to cardiac surgery (Figs. 2 & 3)
- Our search filter sensitivity was 98% and 99% in Medline (Ovid) and PubMed, respectively
- Our search filter specificity was 60% and 49% in Medline (Ovid) and PubMed, respectively

Figure 1: Retrieval of Gold Standard Set of References

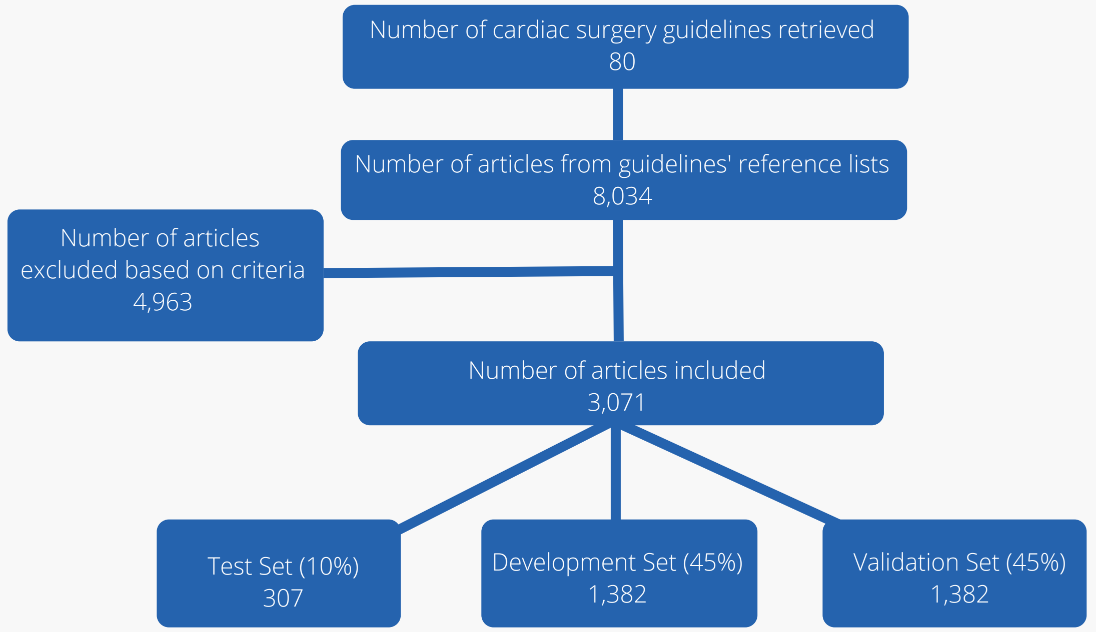

Figure 2: Medline (Ovid) Search Strategy

1 exp cardiac surgical procedures/ or exp cardiovascular surgical procedures/

2 ((heart* or cardiac* or cardiothoracic* or cardio thoracic* or cardiovascular* or arter* or aort* or atria* or valve* or tricuspid* or mitral* or coronary* or pulmonary or type a or endocarditis or maze* or assist device* or VAD* or LVAD* or RVAD*) adj5 (surg* or operation* or peri-operative* or perioperative* or procedur* or peri-procedur* or periprocedur* or repair* or replace* or transplant* or graft* or dissection* or implant* or closure*)).ti,ab,kf.

3 (annuloplast* or CABG or bypass or by-pass or myocardial revasculari?ation* or mammary artery or TAVR or TAVI or MVR* or AVR* or TVR or extracorporeal membrane or ECMO*).ti,ab,kf.

4 or/ 1-3

Figure 3: PubMed Search Strategy

"cardiac surgical procedures"[Mesh] OR "cardiovascular surgical procedures"[Mesh] OR ((heart*[tiab] OR cardiac*[tiab] OR cardiothoracic*[tiab] OR "cardio thoracic*"[tiab] OR cardiovascular*[tiab] OR arter*[tiab] OR aort*[tiab] OR atria*[tiab] OR valve*[tiab] OR tricuspid*[tiab] OR mitral*[tiab] OR coronary*[tiab] OR pulmonary[tiab] OR endocarditis[tiab] OR "type A" OR maze*[tiab] OR "assist device*"[tiab] OR VAD OR LVAD*[tiab] OR RVAD*[tiab]) AND (surg*[tiab] OR operation*[tiab] OR peri-operative*[tiab] OR perioperative*[tiab] OR procedur*[tiab] OR peri-procedur*[tiab] OR periprocedur*[tiab] OR repair*[tiab] OR replace*[tiab] OR transplant*[tiab] OR graft*[tiab] OR dissection*[tiab] OR implant*[tiab] OR closure*[tiab])) OR (annuloplast*[tiab] OR CABG[tiab] OR bypass[tiab] OR by-pass[tiab] OR "myocardial revascularization*"[tiab] OR "myocardial revascularisation*"[tiab] OR "mammary artery"[tiab] OR TAVR[tiab] OR TAVI[tiab] OR MVR[tiab] OR AVR[tiab] OR TVR[tiab] OR "extracorporeal membrane"[tiab] OR ECMO*[tiab])

Discussion

- We created a search filter that identifies adult cardiac surgery articles in both Medline (Ovid) and PubMed
- Patient co-researchers (i.e. patient partners) were equal members of the research team and actively engaged in creating the search filter
- Working with a diverse group of stakeholders ensures the search filter will be useful to a wide range of users and includes diverse perspectives
- A drawback of the PubMed search filter is the low specificity as compared to Medline (Ovid)
- Our next steps are to continue to validate the search filter and to continue knowledge translation work with stakeholders to disseminate filters to wider audience through a broad range of knowledge translation products

References

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