

# Identifying References in a Literature Review Update: A Study Exploring Three Alternative Approaches

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## Introduction

- As new studies are published, systematic literature review (SLR) findings may become out of date, providing misleading information to decision makers and key stakeholders.
- Performing an SLR update when new evidence emerges is often more efficient than starting afresh. It is recommended that SLRs should be updated every two years.<sup>1</sup>
- The Cochrane handbook describes two methods of updating database searches: limiting database searches by date of database entry, and by year of publication.<sup>2</sup> Another popular method involves the use of EndNote.<sup>3</sup> However, consistent guidance regarding the best search method for performing an SLR update is lacking.

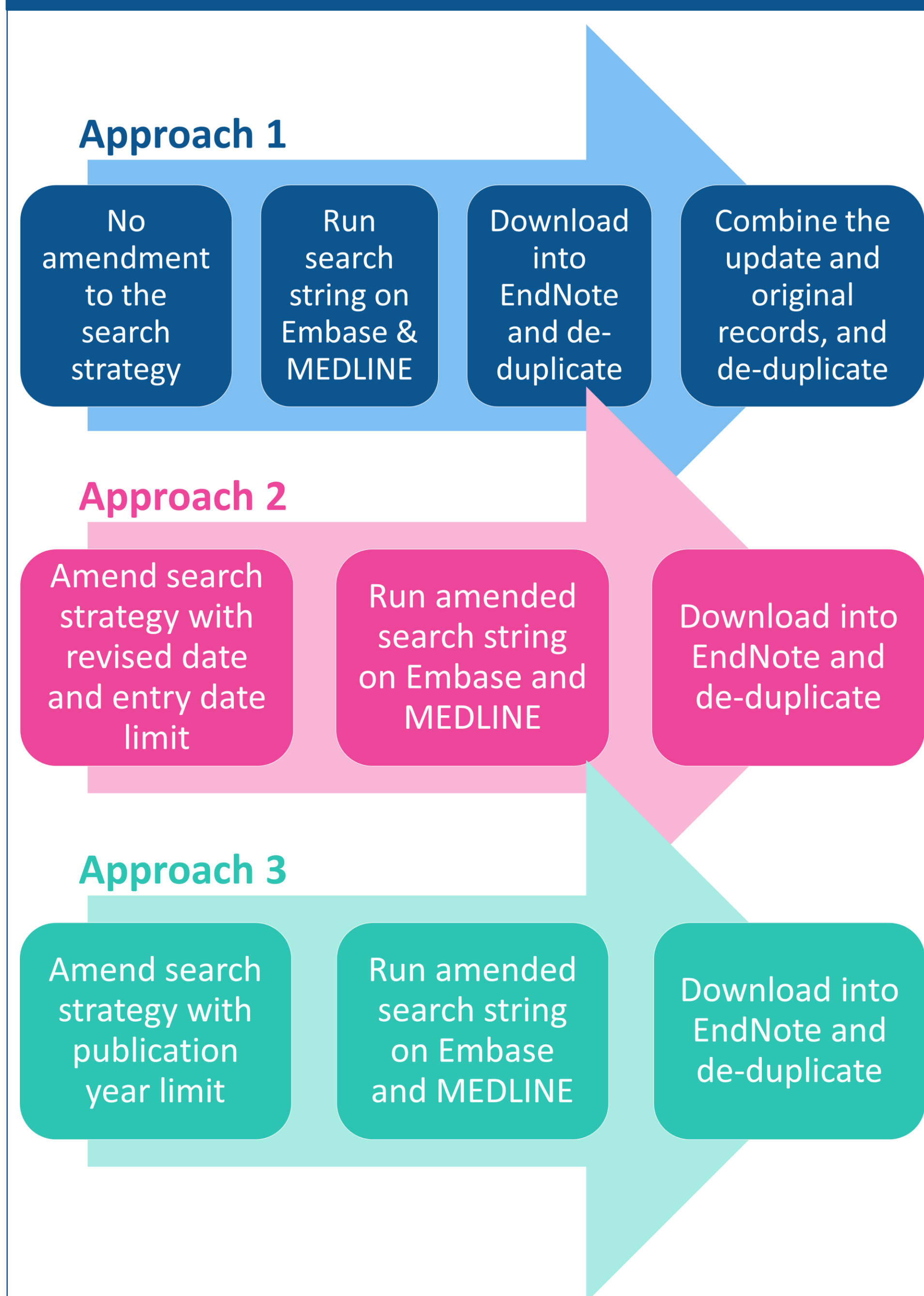
**Aim 1:** To compare the efficiency and completeness of three record identification methods for conducting electronic database searches to inform an SLR update.

**Aim 2:** To determine which search approach retrieves the greatest number of novel records and to examine record overlap compared to the original SLR.

## Methods

- Three methods of conducting searches for an SLR update were explored (**Figure 1**).
  - Approach 1:** Run the original search string and de-duplicate records against the original SLR EndNote library.
  - Approach 2:** Limit the search strategy to articles added into Embase/MEDLINE on or after the original SLR search date. Revised or corrected records during the update period were also retrieved for both Embase and MEDLINE.<sup>4</sup>
  - Approach 3:** Restrict the search by year of publication to retrieve records published during or after the year of the original SLR search.
- The three approaches were tested using search strings from three SLRs on ulcerative colitis (UC), anaemia in chronic kidney disease (aCKD) and psoriatic arthritis (PsA), originally conducted in 2017, 2019 and 2020, respectively.
- Search limits were added depending on the search approach. Searches were performed in MEDLINE and Embase (via Ovid).
- For all approaches, search results were imported into EndNote, and de-duplicated against each other.
- Search approaches were compared in terms of the overall number of records identified, the number of novel records identified compared to the original SLR and the number of novel records identified compared to other SLR update approaches.

Figure 1. Steps to conduct each SLR update method



## Results

- Approach 2 yielded the highest number of records for screening (aCKD=977; PsA=1419; UC=1918) followed by Approach 1 (aCKD=560; PsA=1124; UC=1460) and then Approach 3 (aCKD=592; PsA=1001; UC=1614) (**Figure 2**).
- After de-duplicating Approach 2 and 3 against the original search, Approach 1 (aCKD=560; PsA=1124; UC=1460) yielded the highest number of novel records, followed by Approach 2 (aCKD=545; PsA=1120; UC=1448), and then Approach 3 (aCKD=509; PsA=1001; UC=1403) (**Figure 2**).
- Overlap with the original SLR search was considerably higher for Approach 2 (aCKD=44%; PsA=21%; UC=25%) than Approach 3 (aCKD=14%; PsA=4%; UC=13%) (**Figure 2**). This means that using Approach 2, there is a greater number of records previously screened in the original SLR that will also be screened in the SLR update.
- Approach 1 identified 4-15 records not retrieved by Approach 2, and 51-123 records not retrieved by Approach 3. Approach 2 identified 38-119 additional, unique records compared to Approach 3 (**Figure 3**).
- Approach 3 only identified records not retrieved by Approach 1 and Approach 2 in one SLR, where Approach 3 found two records that Approach 2 had not identified.

Figure 2. Number of records retrieved by each approach, including the number of novel records and the overlap with the original SLR

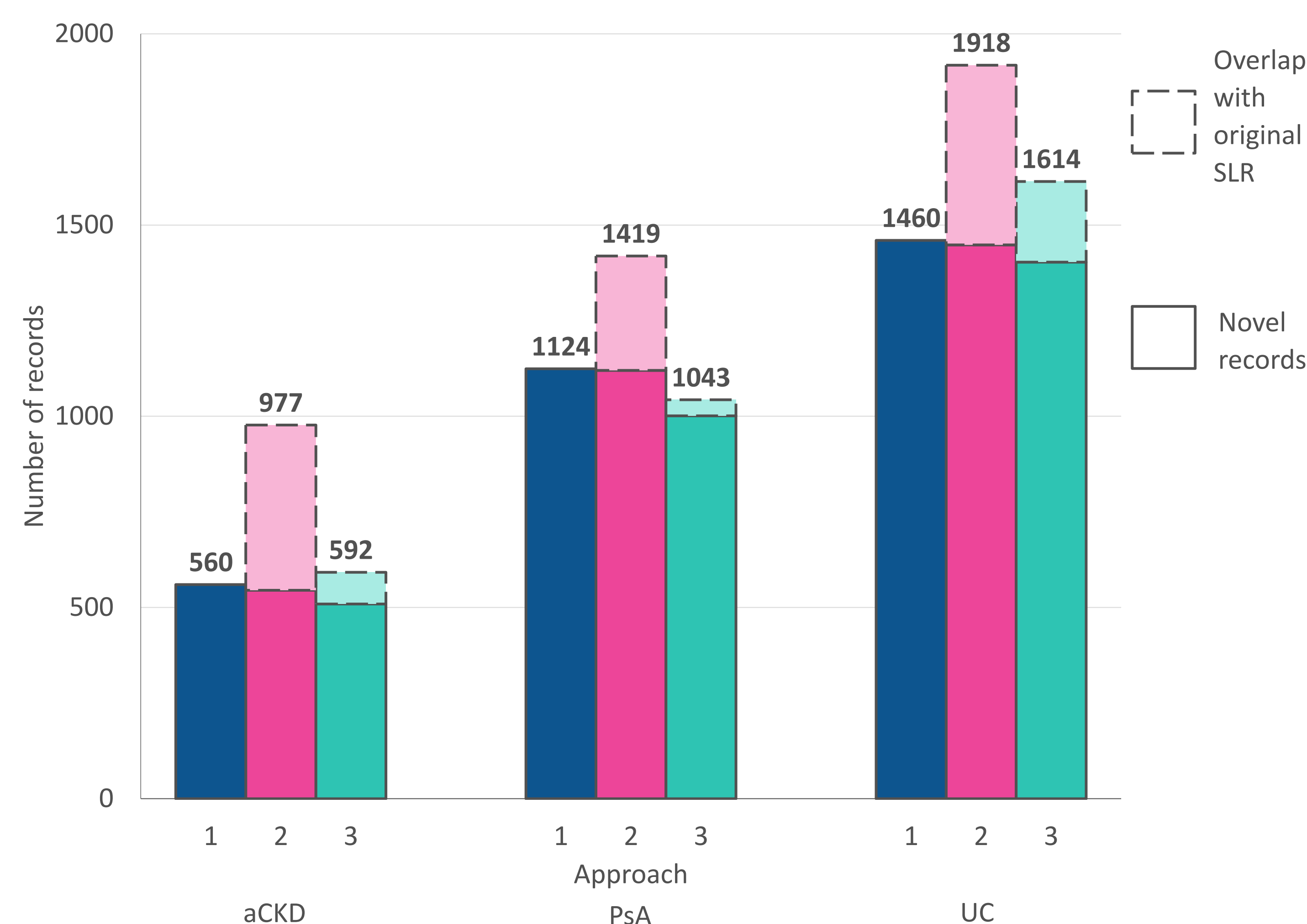
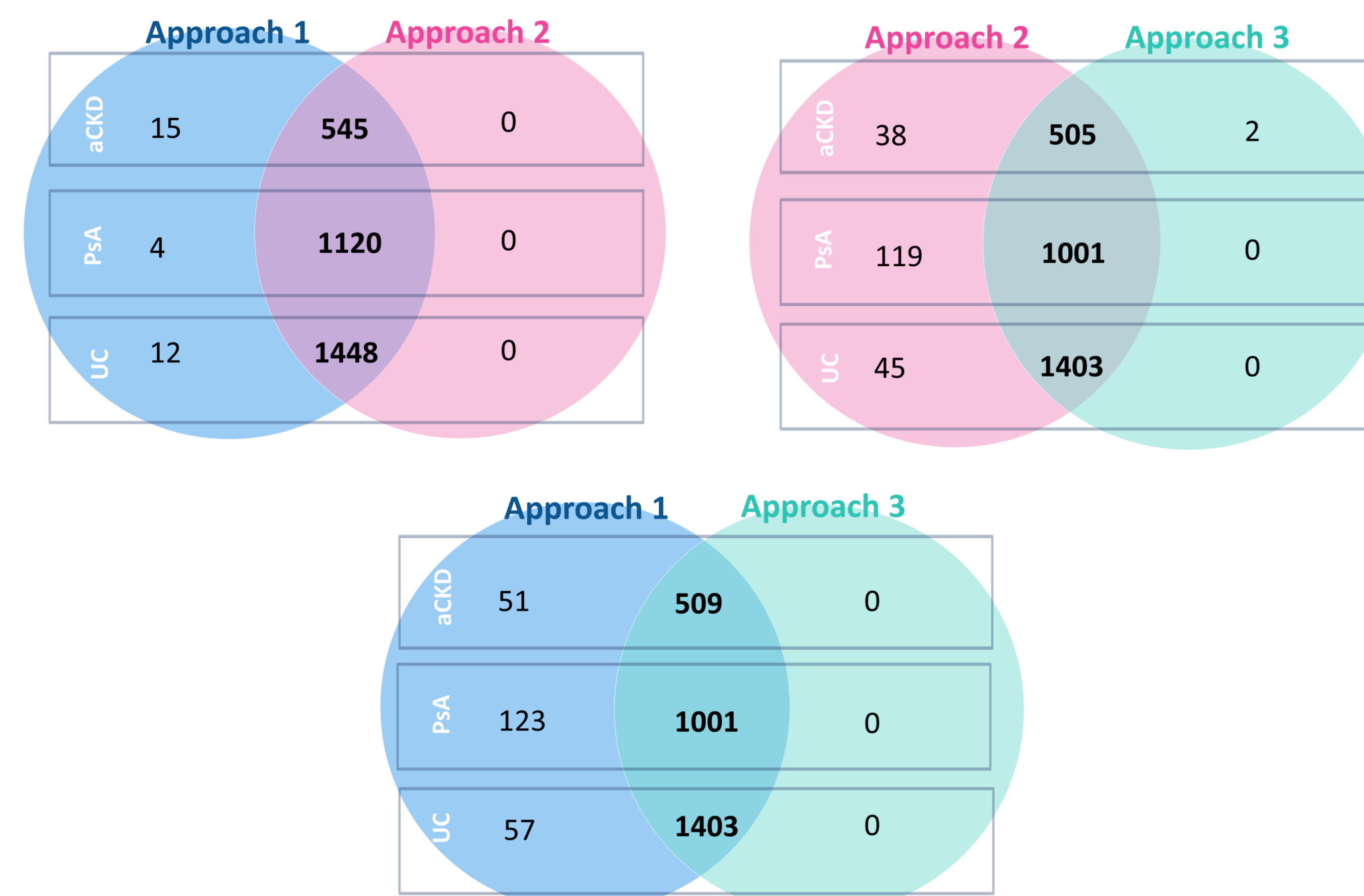


Figure 3. Unique references and overlap between each approach



## Opportunities for Further Work

- Records were not screened to assess SLR eligibility, therefore, it is uncertain how many novel records yielded by each approach were relevant and met the SLR eligibility criteria.
- The search approaches were tested on three SLRs conducted using two databases. Further work is required to determine whether these findings are generalisable to SLRs in other disease areas, other study designs or searches using different databases.
- The large records overlap between Approach 2 and the original SLR searches is likely due to the combination of both a date delivered and revised date limit. Further work could explore using only one of these limits.
- The value of conducting searches of other data sources to supplement the electronic database searches was not assessed.

## Conclusions

- Re-running the original search string with no date limits and de-duplicating against the original SLR (Approach 1) retrieved the greatest number of unique references and resulted in the most complete SLR update search. We would recommend this approach if the original SLR library is available.
- Other approaches exist when the original search library is not available; however, they increase the risk of missing relevant references. Approach 2 presents an adequate alternative; however, it has a high screening burden; under time and resource constraints, Approach 2 may be infeasible for larger SLRs.
- Approach 3 may be preferable under time and resource constraints; however, it poses the risk of missing relevant records that have been retrospectively added.

**Key message:** Re-running the original search string and de-duplicating against the original SLR provided the most exhaustive search. If the original SLR library is unavailable, we recommend the method of searching should be chosen depending on screening resource availability.

**References:** (1) Cumpston M, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA Chapter IV: Updating a review. Cochrane Handbook for Systematic Reviews of Interventions 2022;version 6.3. (2) Lefebvre C GJ, Briscoe S, Featherstone R, Littlewood A, Marshall C, Metzendorf M-I, Noel-Storr A, Paynter R, Rader T, Thomas J, Wieland LS. Chapter 4: Searching for and selecting studies. Cochrane Handbook for Systematic Reviews of Interventions 2022; version 6.3. (3) Brainer WM GD, de Jonge GB, Holland L, Bekhuis De-duplication of database search results for systematic reviews in EndNote. J Med Libr Assoc 2016;104:240-243. (4) OVID. How can I limit search results by a date range in Ovid? Last updated 2020. Available from: <https://wkhealth.force.com/ovidsupport/s/article/Limit-by-date-range-in-Ovid>

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