

Planning for PRISMA: A tool to accurately track citations in multiphase systematic review searches

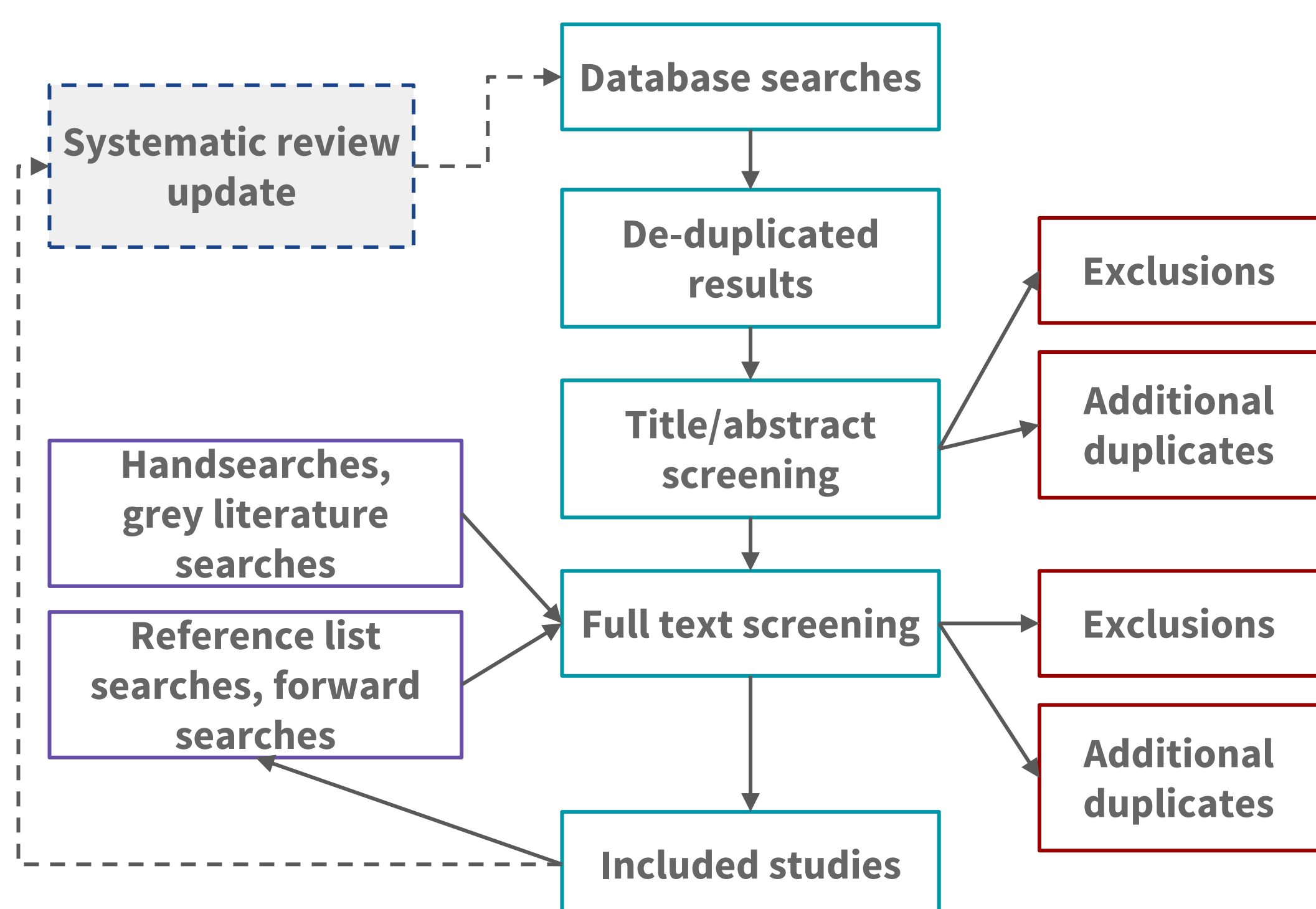
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Introduction

Citation management plays an important role in the transparent reporting of systematic review methods. The PRISMA flow diagram is recommended to assist systematic reviewers with tracking and reporting citations from retrieval to inclusion. This can be challenging as systematic reviews often draw from multiphase searches of databases, grey literature, reference lists, and from hand searches.

Figure 1. The multiphase search process



Librarians are ideally placed to help systematic review teams with citation management. We describe the development and preliminary testing of a citation tracking tool to accompany the PRISMA flow diagram.

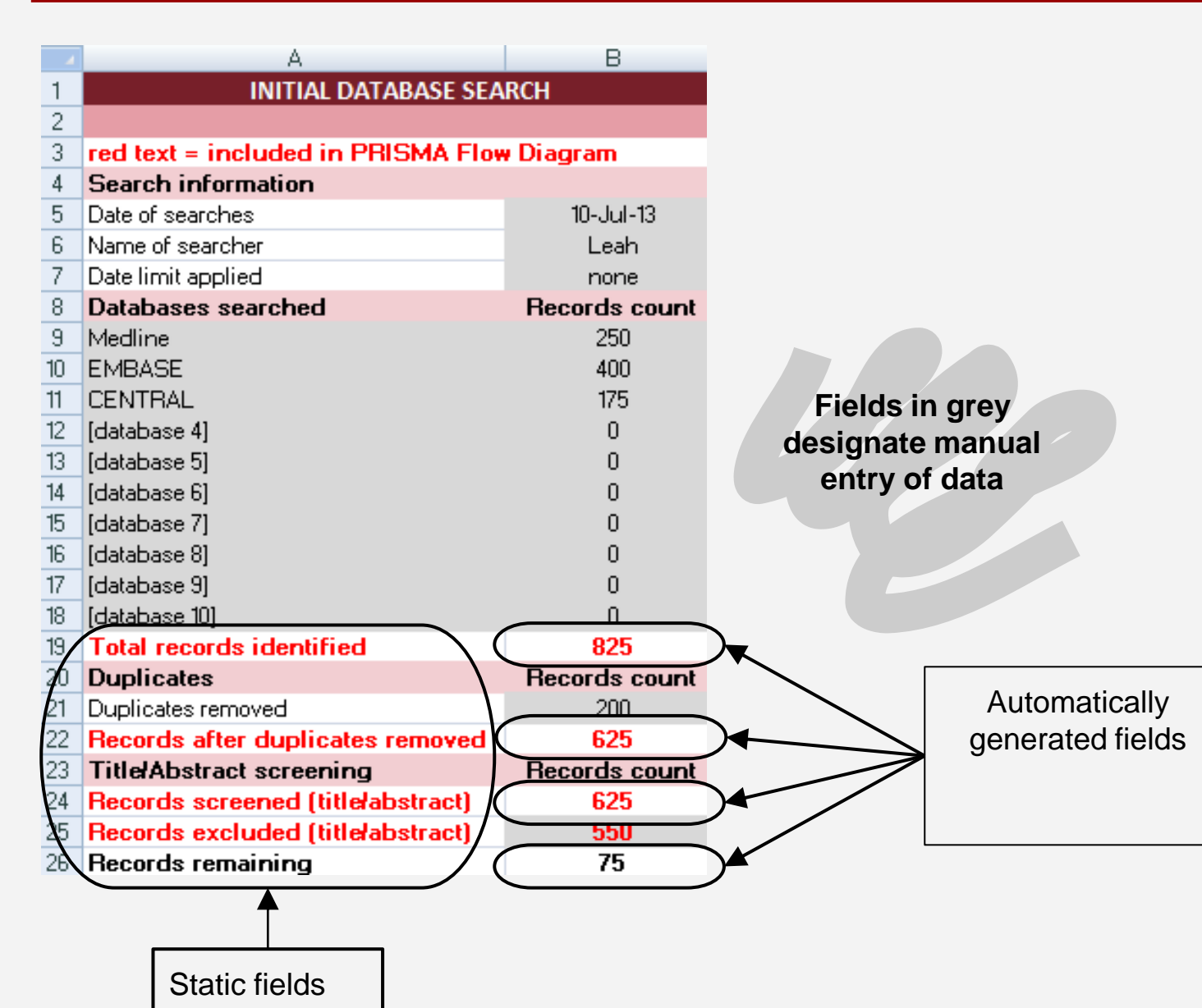
Description

- We conducted a literature review and an environmental scan of citation management strategies employed by librarians and/or systematic reviewers.
- Two librarians created a tool and accompanying guide in consultation with experienced systematic review collaborators.
- The tool was pilot tested by seven graduate students completing their first systematic review, and feedback was collected through a questionnaire and group discussion. In addition to qualitative feedback, students assigned scores out of five for usability and utility.

Tool Features

The tool is an Excel workbook with five sheets which identify the type and detail of information to collect at each phase of the systematic review literature search. There are a mix of modifiable and automated fields to help reviewers manage their project.

Figure 2. How the tool works



The first sheet of the tool, the Database Searching sheet, enables reviewers to keep all of their review information related to the database searches (and updates, if conducted) in one place. This sheet is made up of three major sections.

Figure 3. Database searching sheet

INITIAL DATABASE SEARCH		SEARCH UPDATES		DATABASE SEARCH TOTALS	
red text = included in PRISMA Flow Diagram		red text = included in PRISMA Flow Diagram		THIS SECTION POPULATES AUTOMATICALLY	
Search information		Search information		Search information	
Date of searches	10-Jul-13	Date of searches	[date]	Date of searches	[date]
Name of searcher	Leah	Name of searcher	[name]	Name of searcher	[name]
Date limit applied	none	Date limit applied	[date range]	Date limit applied	[date range]
Databases searched		Databases searched		Databases searched	
MEDLINE	Records count: 0	MEDLINE	Records count: 0	MEDLINE	Records count: 0
Embase	Records count: 750	Embase	Records count: 0	Embase	Records count: 750
CENTRAL	Records count: 50	CENTRAL	Records count: 0	CENTRAL	Records count: 50
(database 4)	Records count: 0	(database 4)	Records count: 0	(database 4)	Records count: 0
(database 5)	Records count: 0	(database 5)	Records count: 0	(database 5)	Records count: 0
(database 6)	Records count: 0	(database 6)	Records count: 0	(database 6)	Records count: 0
(database 7)	Records count: 0	(database 7)	Records count: 0	(database 7)	Records count: 0
(database 8)	Records count: 0	(database 8)	Records count: 0	(database 8)	Records count: 0
(database 9)	Records count: 0	(database 9)	Records count: 0	(database 9)	Records count: 0
(database 10)	Records count: 0	(database 10)	Records count: 0	(database 10)	Records count: 0
Total records identified	1330	Total records identified	0	Total records identified	1330
Duplicates		Duplicates		Duplicates	
Duplicates removed	Records count: 600	Duplicates removed	Records count: 0	Duplicates removed	Records count: 600
Records after duplicates removed	730	Records after duplicates removed	0	Records after duplicates removed	730
Title/Abstract screening		Title/Abstract screening		Title/Abstract screening	
Records screened (title/abstract)	Records count: 730	Records screened (title/abstract)	Records count: 0	Records screened (title/abstract)	Records count: 730
Records excluded (title/abstract)	Records count: 725	Records excluded (title/abstract)	Records count: 0	Records excluded (title/abstract)	Records count: 725
Records remaining	Records count: 25	Records remaining	Records count: 0	Records remaining	Records count: 25
Full Text screening		Full Text screening		Full Text screening	
Records screened (full text)	Records count: 25	Records screened (full text)	Records count: 0	Records screened (full text)	Records count: 25
Records excluded (full text, total)	Records count: 15	Records excluded (full text, total)	Records count: 0	Records excluded (full text, total)	Records count: 15
Wrong population	Records count: 10	Wrong population	Records count: 0	Wrong population	Records count: 10
Wrong setting	Records count: 5	Wrong setting	Records count: 0	Wrong setting	Records count: 5
(reason 3)	Records count: 0	(reason 3)	Records count: 0	(reason 3)	Records count: 0
(reason 4)	Records count: 0	(reason 4)	Records count: 0	(reason 4)	Records count: 0
(reason 5)	Records count: 0	(reason 5)	Records count: 0	(reason 5)	Records count: 0
Total studies included*	10	Total studies included	0	Total studies included	10

Initial database search Search updates (optional) Database search totals

Sheets two through five track grey literature searching (optional), handsearching (optional), reference searching, and forward citation searching.

Figure 4. Sheets 2-5

Figure 5. PRISMA Flow Diagram Data sheet

The sixth and final sheet "PRISMA Flow Diagram Data" automatically collects all of the pertinent data from the previous sheets to generate the necessary information for authors to input into a PRISMA Flow diagram.

PRISMA FLOW DIAGRAM DATA	Automatic calculation
Identification	n =
Records identified through database searching	1350
Additional records identified through other sources	25
Total records identified (does not appear in PRISMA flow diagram)	1375
Duplicates	n =
Duplicates removed (does not appear in PRISMA flow diagram)	600
Records after duplicates removed	775
Title/Abstract Screening	n =
Records screened (ti/ab)	775
Records excluded (ti/ab)	725
Total studies identified for full text screening* (does not appear in PRISMA flow diagram)	50
Full Text Screening	n =
Full-text articles assessed for eligibility	50
Full-text articles excluded, with reasons	30
Wrong population	20
Wrong setting	10
[reason 3]	0
[reason 4]	0
[reason 5]	0
Total studies identified (does not appear in PRISMA flowchart; total is further divided by those included in qualitative and quantitative syntheses, which will not populate automatically)	20
Synthesis	n =
Studies included in qualitative synthesis (these values need to be filled manually)	0
Studies included in quantitative synthesis (these values need to be filled manually)	0

Outcomes

Respondents provided positive feedback on the layout of the tool and found it user friendly, though they did suggest some modifications to certain pages which we will address in further iterations of the tool. In addition to the qualitative feedback, average scores from the questionnaire were as follows:

Usability:
How easy was it to use the tool?
4.5/5

Utility:
How useful is the tool?
4.7/5

Discussion

Overall, respondents found the tool was useful, and made tracking and reporting less intimidating. The tool responds to the complexity of multiphase systematic review searching. More testing, from systematic review initiation to completion, is required to confirm its usability and utility.

References
<http://bit.ly/2oFT28G>

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