Can an integrated systematic literature review (SLR) database improve the speed and quality of title and abstract (TiAb) review? A case study using multiple myeloma (MM) projects in interventional and real-world evidence (RWE) evidence.

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An integrated database of SLRs could produce significant time savings in the TiAb review stage of SLRs.

Background

- SLRs are required for submission to health technology assessments to generate evidence.
- The process for SLRs is time-consuming.
- Different projects sometimes capture the same citations; however, these repeated citations require duplicate effort to review.

Objective

- We investigate whether an inter-connected database of SLR projects could save time by re-utilizing the review results of the same citations in one project for another.

Methods

LiveSTREAM

- LiveSTREAM is an SLR management tool that provides users with project management, reference tracking, and reporting features.
- Different from other SLR project management tools, LiveSTREAM learns and keeps past SLR projects and decisions to inform new SLRs, by comparing pre-specified exclusion tagging and the new inclusion and exclusion criteria.
- This integrated and inter-connected database can easily identify each citation as unique across projects, instead of isolated within a project.

SLRs in LiveSTREAM database used to investigate time savings

- We used multiple myeloma (MM) SLR datasets to investigate the time savings that LiveSTREAM integrated database could provide.
- Previously completed SLRs in Relapsed/refractory (RR) and newly diagnosed (ND) SLRs in interventional and real-world evidence (RWE) have been uploaded to the LiveSTREAM integrated database.
- A new SLR in MM maintenance was conducted with or without the LiveSTREAM project management tool and integrated database.
- Time used to conduct the SLRs were recorded.

Brief overview of previous SLRs conducted

- There were a total of 6553 records from 4 previous SLRs.
- NDMM and RRMM interventional had 3 previous updates.
- RWE SLRs only had one updated.
- Table 1 below summarizes the number of records reviewed at TiAb stage.

Table 1. Title Goes Here

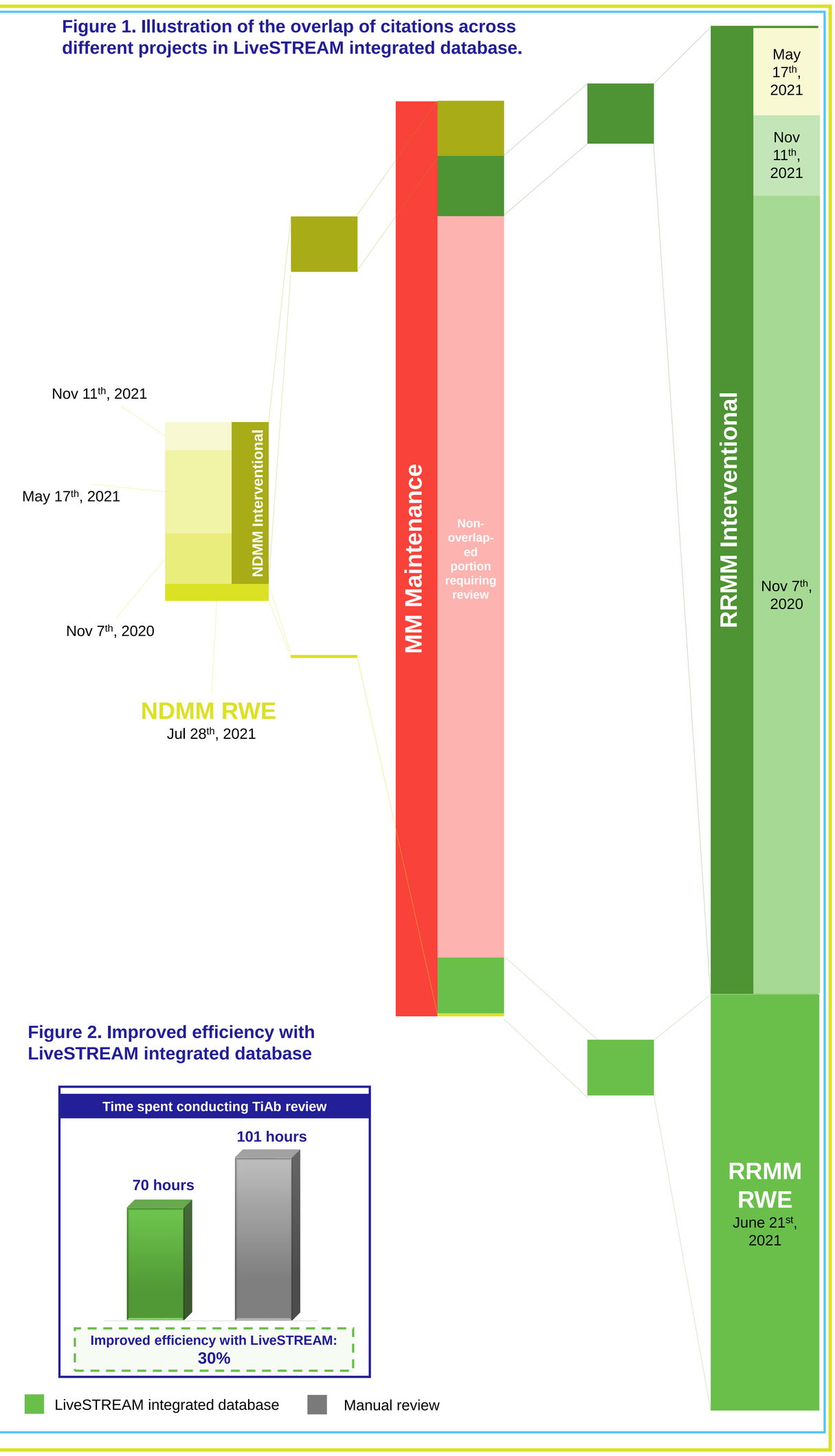
NDMM Interventional total of 679 records		RRMM Interventional total of 4058 records	
Nov 7th, 2020	213	Nov 7th, 2020	3347
May 17th, 2021	349	May 17th, 2021	346
Nov 11th, 2021	117	Nov 11th, 2021	365
NDMM RWE total of 71 records		**RRMM RWE total of 1745 records**	
Jul 28th, 2021	71	Jun 21st, 2021	1745

Results

Citation overlap

- The MM maintenance test project contained 3814 citations.
- A total of 712 records overlapped with previous NDMM and RRMM projects
- 231 with NDMM interventional
- 253 with RRMM interventional
- 12 with NDMM RWE
- 234 with RRMM RWE
- 18 of the 712 records were from multiple projects.
- Figure 1 on the right illustrates visually the overlap of citations.

Figure 1. Illustration of the overlap of citations across different projects in LiveSTREAM integrated database.



Manual review outside of LiveSTREAM

- Two independent reviewers spent 95 hours on the TiAb review
- A third reviewer spent 6 hours to resolve their conflict
- A total of 101 hours were spent on manually conducting the TiAb review.

Figure 2. Improved efficiency with LiveSTREAM integrated database

Manual review outside of LiveSTREAM

- The 712 overlapped citations were automatically reviewed in LiveSTREAM.
- Two independent reviewers and a third reviewer then spent 70 hours reviewing the remaining 3102 non-overlapped citations.
- A total of 70 hours were spent conducting the TiAb review of the MM maintenance SLR.

Manual review outside of LiveSTREAM

- Compared to manual review, 31 hours (30%) of time savings were created with LiveSTREAM integrated database.
- Figure 2 compares the efficiency with the two methods.

Conclusions

An integrated database of SLRs could produce significant time savings in the TiAb review stage of SLRs.

Note

Search strategies and PICOS for previous SLRs are available upon request/

Disclosures

Pitts B.V. was contracted by Cytel Inc. to build LiveSTREAM.