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Medline Transpose: Conversion Tool for PubMed and Ovid Medline Interfaces

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Medline Transpose was developed to mitigate a common problem: converting search syntax between the PubMed and Ovid MEDLINE interfaces. When formulating a complex search strategy involving free text, controlled vocabulary terms, and field codes, searching both PubMed and Ovid MEDLINE can allow researchers to capitalize on the strengths of each, such as the adjacency (ADJ) function in Ovid, or the unique PubMed Central (PMC) content in PubMed. An increasing amount of research calls for researchers to search both interfaces [1]; however, converting a search strategy for use in the opposite interface can be a complex process [2].

Field codes and interpretation of user input differ between Ovid and PubMed. For example, both the "text word" and "title/abstract" field codes search different combinations of fields in PubMed and Ovid MEDLINE, despite using the same terminology. Therefore, translating between interfaces can be time-consuming and requires thorough consultation of the support documentation, in particular where no exact translation is possible. Likewise, in a search strategy with many terms, it can be tedious to make the same change repeatedly, but conversion is often beyond the capability of a simple find-and-replace. PubMed, for example, requires each term to be followed by its field code, while Ovid allows a shorthand syntax with field codes succeeding a group of search terms.

While there have been previous attempts to automate search translation between Ovid and PubMed, each have relied on a simple find-and-replace strategy. Medline Transpose uniquely converts strategies while allowing variety in the ways that MeSH or keywords can be searched in each. The conversion tool also strives for the most accurate conversion possible, and provides warnings and suggestions where an exact conversion is not possible. This allows the user to make informed decisions about the best possible conversion strategy.

Medline Transpose was hand-coded by the authors using JavaScript and the interface was built using w3.css, a freely available and modular system that can be infinitely customized: <https://www.w3schools.com/w3css/>. The program is hosted on the GitHub.com development platform, a repository and hosting service for open source code, and the code is publicly available to view, modify, and reuse under the MIT license: <https://opensource.org/licenses/MIT>; <https://github.com/MedlineTranspose>.

Some applications of Medline Transpose include:

1. More accurate and efficient way of searching both PubMed and Ovid MEDLINE for a systematic review.
2. Ability to capitalise on the strengths of both databases during day-to-day use, such as quickly converting a draft search string into Ovid syntax to use the adjacency operator, or into PubMed syntax to use a pharmacological action concept.

3. Ability to use another person's or institution's pre-made search strategy in the alternate interface; for instance, a search hedge.

There are limitations to the translation abilities of Medline Transpose. Most prominently, not all searches have an exact translation, and in these cases, the program can suggest alternatives, but cannot create database functionalities that do not currently exist. The program also relies on user input that is formatted correctly. Because Medline Transpose looks for patterns, rather than reading and understanding the input content, it cannot identify spelling mistakes, retired MeSH, or incorrectly formed syntax (although some error corrections have been incorporated into the program).

Conversions for the most commonly used search features of MEDLINE have been implemented. These have undergone extensive usability testing, both by the authors and a group of medical librarians identified through snowball sampling. Results from usability testing indicated that the program worked as intended. Users also suggested several features for future implementation. Based on this feedback, planned future improvements to Medline Transpose will include: a multi-line entry field, recognition of tagless "Filter" style limits in PubMed and codeless limits in Ovid syntax, and the option to choose between the most accurate and a more efficiency-based conversion. The authors plan to keep abreast of changes to the search capabilities of both databases, and implement changes as necessary.

Medline Transpose is freely available online at: <https://medlinetranspose.github.io/>.

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MEDLINE Transpose

Translate a search query between Ovid MEDLINE and PubMed syntax

Enter your search strategy

[Ovid Examples](#)[PubMed Examples](#)

Aged"[Mesh] OR elder*[all fields] OR geriatr*[all fields] OR "older adult"[all fields] OR "older adults"[all fields] OR "late life"[all fields] OR "later life"[all fields]

 Ovid to PubMed PubMed to Ovid

Results

exp Aged/ or elder*.af. or geriatr*.af. or "older adult".af. or "older adults".af. or "late life".af. or "later life".af.

Figure 1: MEDLINE Transpose Interface