# Methodological Challenges to Coronavirus Disease (COVID-19) Evidence Generation to Inform Health Technology Assessment (HTA)

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## Background and objectives

- COVID-19 standard of care (SoC) has rapidly evolved, and many treatments are now in development which will require HTA following regulatory approval.[1,2]
- Given the evolving COVID-19 treatment landscape, up-to-date evidence synthesis may challenge HTA.[3]
- The objective of this study was to evaluate the methodological implications of the rapidly evolving evidence base required for HTA.

## Methodology

- A systematic literature review (SLR) using Embase® and Medline® databases was conducted between October 2019 and May 2021.
- Published COVID-19 literature was identified to generate evidence for HTA in the following three domains:
  - Clinical
  - Economic
  - Health-related quality of life (HRQoL).

## Results

- COVID-19 entries have increased exponentially compared to other diseases.
- In the Embase® database, COVID-19 search entries generated over 140,000 hits (91%) compared to multiple myeloma (MM) search entries which generated over 14,000 hits (9%) between 2019 and 2021 (Figure 1).
- Specifically, the total hits generated in the Embase® database per year were 1,305 and 4,322 in 2019; 88,098 and 7,224 in 2020 and 57,479 and 2,527 in 2021 for COVID-19 and MM respectively (Figure 2).
- The estimated number of hits generated per week (ENPW) in the Embase® database increased exponentially for COVID-19 entries compared to MM entries which decreased (101 and 333 in 2019; 1,694 and 139 in 2020 and 2,699 and 119 in 2021 for COVID-19 and MM respectively).
- Focusing on the clinical SLR search, the combined Embase® and Medline® databases generated over 7,000 hits (79%) for COVID-19 compared to over 1,900 hits (21%) for MM between 2019 and 2021 (Figure 3).
- The total clinical search hits generated in the combined Embase® and Medline® databases per year were 63 and 614 in 2019; 3,746 and 1,056 in 2020 and 3,470 and 294 in 2021 for COVID-19 and MM respectively (Figure 4).
- The ENPW in the combined Embase® and Medline® databases for the clinical search also increased for COVID-19 entries compared to MM entries which decreased (5 and 47 in 2019; 72 and 20 in 2020 and 163 and 14 in 2021 for COVID-19 and MM respectively).
- Similarly, the COVID-19 SLR reported more than 90% economic and HRQoL studies compared to a MM SLR intended for HTA.

**Figure 1: Total hits generated from Embase® for COVID-19 search entries and multiple myeloma search entries from 2019 to 2021**

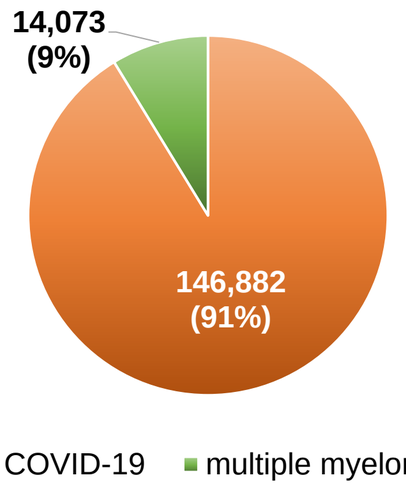



**Figure 2: Total hits generated from Embase® for COVID-19 search entries and multiple myeloma search entries per year**

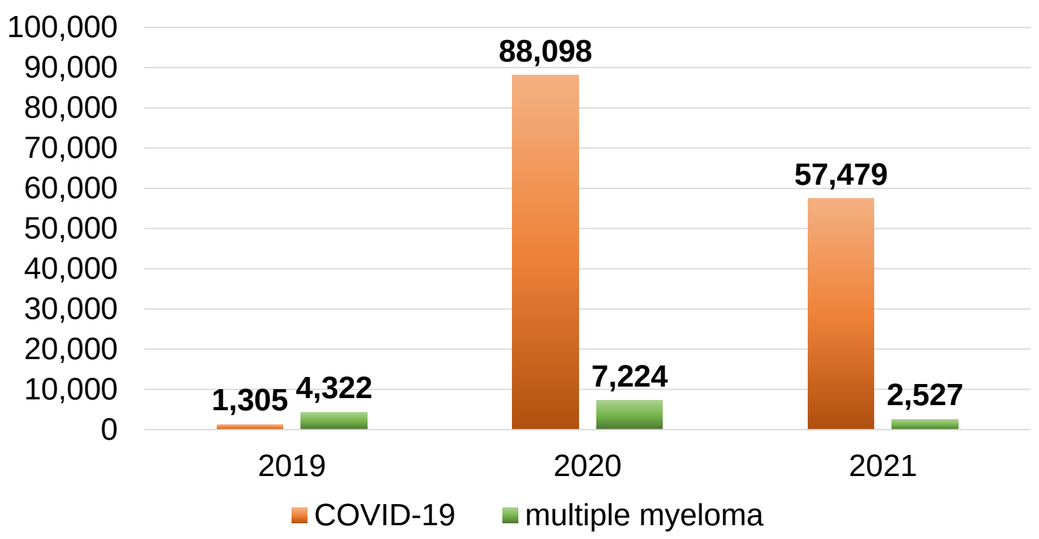



**Figure 3: Total hits generated from Embase® and Medline® for COVID-19 clinical search entries and multiple myeloma clinical search entries from 2019 to 2021**

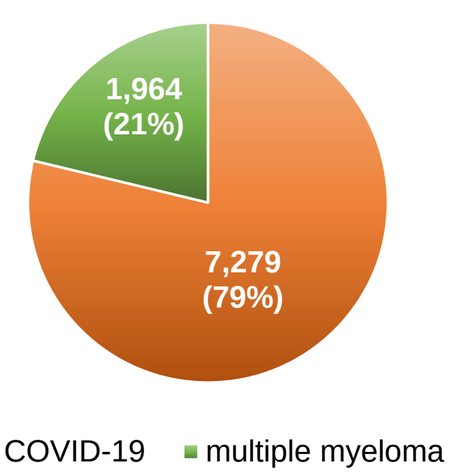
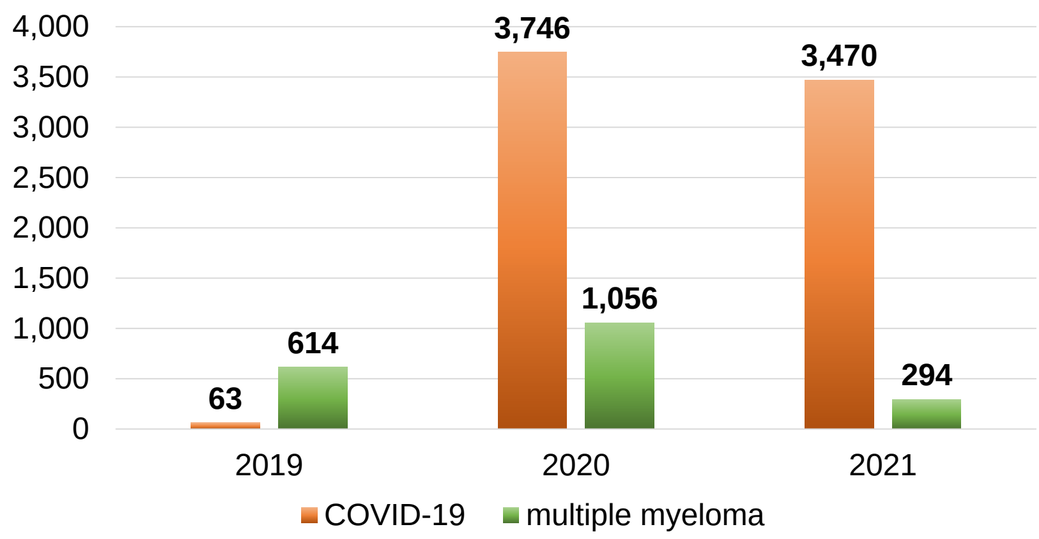



**Figure 4: Total hits generated from Embase® and Medline® for COVID-19 clinical search entries and multiple myeloma clinical search entries per year**




## Conclusion

- COVID-19 entries in databases are rapidly increasing weekly.
- Due to the evolving landscape and abundant evidence, challenges remain to synthesise evidence that is current and reflective of SoC.
- Based on this experience, a six-month time limit is recommended.
- COVID-19 evidence generation for HTA requires consensus around the requirements to ensure recommendations are based on up-to-date evidence.

**Source:** 1. Cascella, M et al. Features, Evaluation, and Treatment of Coronavirus (COVID-19). *StatPearls Publishing* 2021. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554776/. 2. Baraniuk, C. Where are we with drug treatments for covid-19? *BMJ* 2021;373:n1109. 3. Impact of COVID-19 pandemic on HTA. PharmacoEcon Outcomes News. 2020;853(1):2. doi: 10.1007/s40274-020-6797-2.
**Abbreviations:** COVID-19, Coronavirus Disease; ENPW, estimated number of hits generated per week; HRQoL, health-related quality of life; HTA, health technology assessment; MM, multiple myeloma; SLR, systematic literature review; SoC, standard of care.

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