# BIBLIOMETRIC ANALYSIS OF NEGLECTED TROPICAL DISEASE LITERATURE

MADELEINE LUNTLEY
UNIVERSITY OF TORONTO

## ABSTRACT

*Objective:* There is a disparity between burden of disease and research efforts. This is especially true in tropical medicine, particularly concerning neglected tropical diseases (NTDs). This reports on a bibliometric study of NTD research from the past five years, examining disparities between research on individual NTDs and between income groups. This study aims to aid in NTD research priority setting and to inform future NTD policy making.

*Methods:* To assess current research trends and disparities in research, this study used Scopus SciVal, a bibliometric analysis tool powered by Elsevier, and Web of Science's bibliometric analysis tool, examining the scholarly output for the overall body of NTD research.

*Results and Discussion:* The data show that high mortality NTDs are the most researched, though incidence rates are lower than other NTDs, and high morbidity NTDs are still somewhat under researched. The data show that the NTDs with the highest degrees of international collaboration are decreasing in prevalence and burden. The data also show that high income countries produce the most research on NTDs, followed by upper-middle income countries. Low-income countries produce the body of work with the most international collaboration, followed by high income countries, indicating that these two income groups collaborate most frequently. Upper-middle income countries produce the research with the lowest international collaboration.

*Conclusion:* The main finding of this study is something quite intuitive and something the WHO and NGOs already know: international collaboration is the best way to combat NTD burden across the globe.

## METHODS

I relied on scientific publications to represent research efforts on NTDs from 2017-2022. These publications were collected from two places: Elsevier Scopus and Web of Science, using standardized MeSH terms that best describe the diseases in question, taking into consideration the multiple names for many NTDs, and filtering out undesirable results.

I have analyzed the existing body of NTD research, breaking it down by disease type and income level. Using SciVal, I then ranked these sections of NTD literature based scholarly output, international and corporate collaboration and citation count metrics. Using Web of Science, I then looked at the top producing countries, top funding agencies, top producing agencies and top publishing agents. I looked at what proportion of NTD research is open access, and what agencies are funding open access research. Finally, I looked at grants awarded to NTD research, finding that the WHO awarded the most grants.

## RESULTS: INTERNATIONAL & CORPORATE COLLABORATION, CITATION METRICS

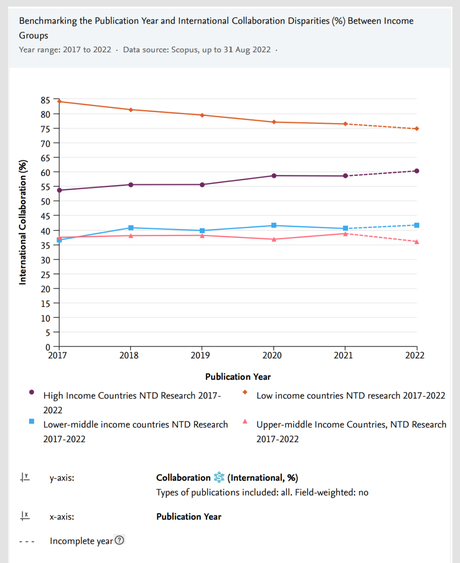


**Fig. 3:** International Collaboration of NTD Research Produced by Different Income Groups (%) vs. Publication Year from 2017 to 2022

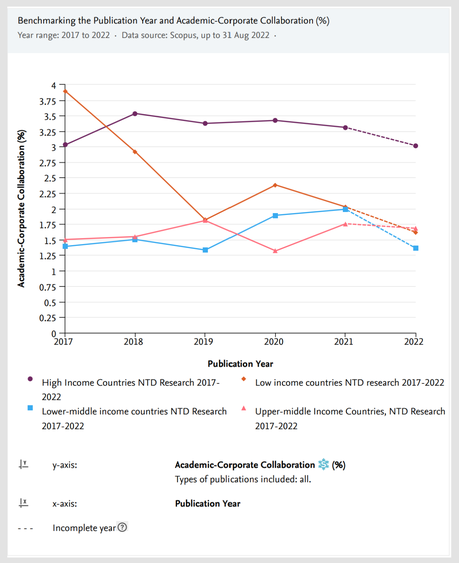


**Fig. 4:** Academic-corporate Collaboration on NTD Research Produced by Different Income Groups from 2017 to 2022

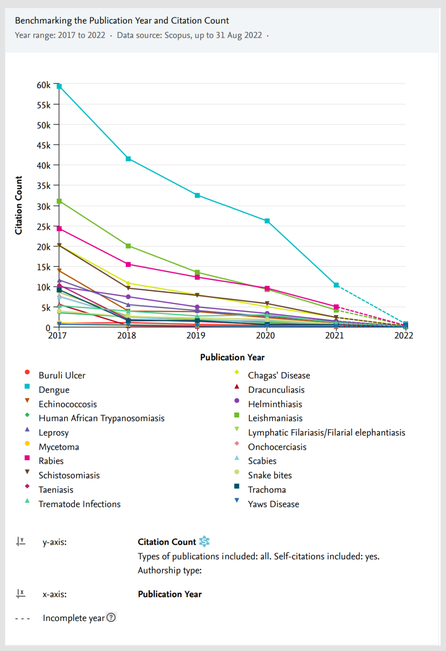


**Fig. 5:** Citation Count vs. Publication Year of NTD Publications from 2017 to 2022

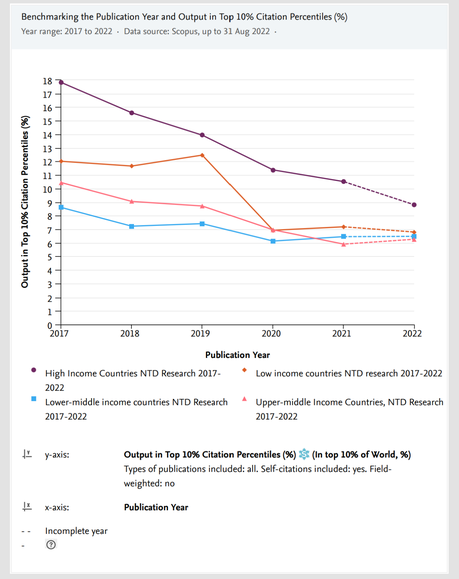


**Fig. 6:** Output of NTD Research in the Top 10% Citation Percentiles vs. Publication Year Produced by Different Income Groups from 2017-2020.

## RESULTS: SCHOLARLY OUTPUT

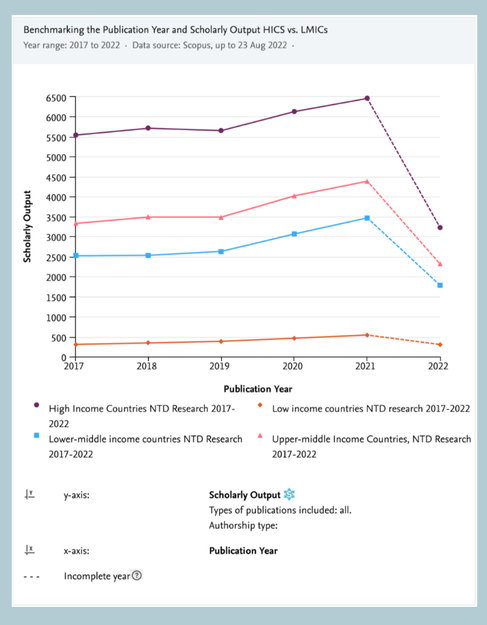


**Fig. 1:** Scholarly Output vs. Publication Year of NTD Research Produced by Different Income Groups from 2017-2022

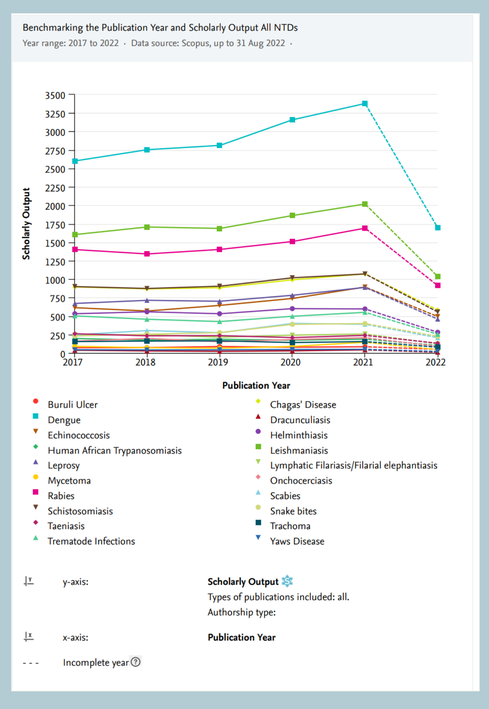


**Fig. 3:** Scholarly Output vs. Publication Year of All Neglected Tropical Diseases from 2017-202

## CONCLUSION

High mortality diseases the most researched overall. Diseases are dramatic in presentation are also more researched. In the future, more emphasis needs to be placed on diseases with high morbidity

Facilitating international collaboration on NTDs between middle income countries and high- and low-income countries would be very valuable.

The trajectory of research output and international collaboration on NTD research is very promising. More research is being published, indicating interest is increasing. However, there are still NTDs that are wreaking havoc on the world's most vulnerable populations, for example Dengue and Chagas Disease. More international collaboration is necessary to assess commonalities between endemic countries and possible solution.

## ACKNOWLEDGEMENTS

Though this was an independent research project, there is no way I could have accomplished any of this by myself. I owe a huge thank-you to Dr. Joy Fitzgibbon, who listened my rambling as I formed a trajectory for my research and supported me as I stumbled my way through.

Another huge thank-you goes to Shraddha Prasad, our wonderful University of Toronto International Scholarships Advisor and Manager. Her constant support was essential for my continued motivation through this project, and she was very forgiving of my last-minute requests for meetings and was a massive support through this process.

Finally, I'd like to thank the Laidlaw Foundation for making this possible.

UNIVERSITY OF TORONTO

LAIDLAW SCHOLARS