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BACKGROUND & OBJECTIVE

- Arguably, research priorities should address the most pressing health needs.
- However, previous research has shown that some disease areas may be “under-studied” or “over-studied” relative to their disease burden.¹
- Globally, trends in non-communicable disease have been increasing—accounting for nearly 60% of total Disability-Adjusted Life Years (DALYs) in 2021.
- This analysis explores how research priorities in cost-effectiveness analysis (CEA) align with burden of disease trends.

METHODS

Data Sources

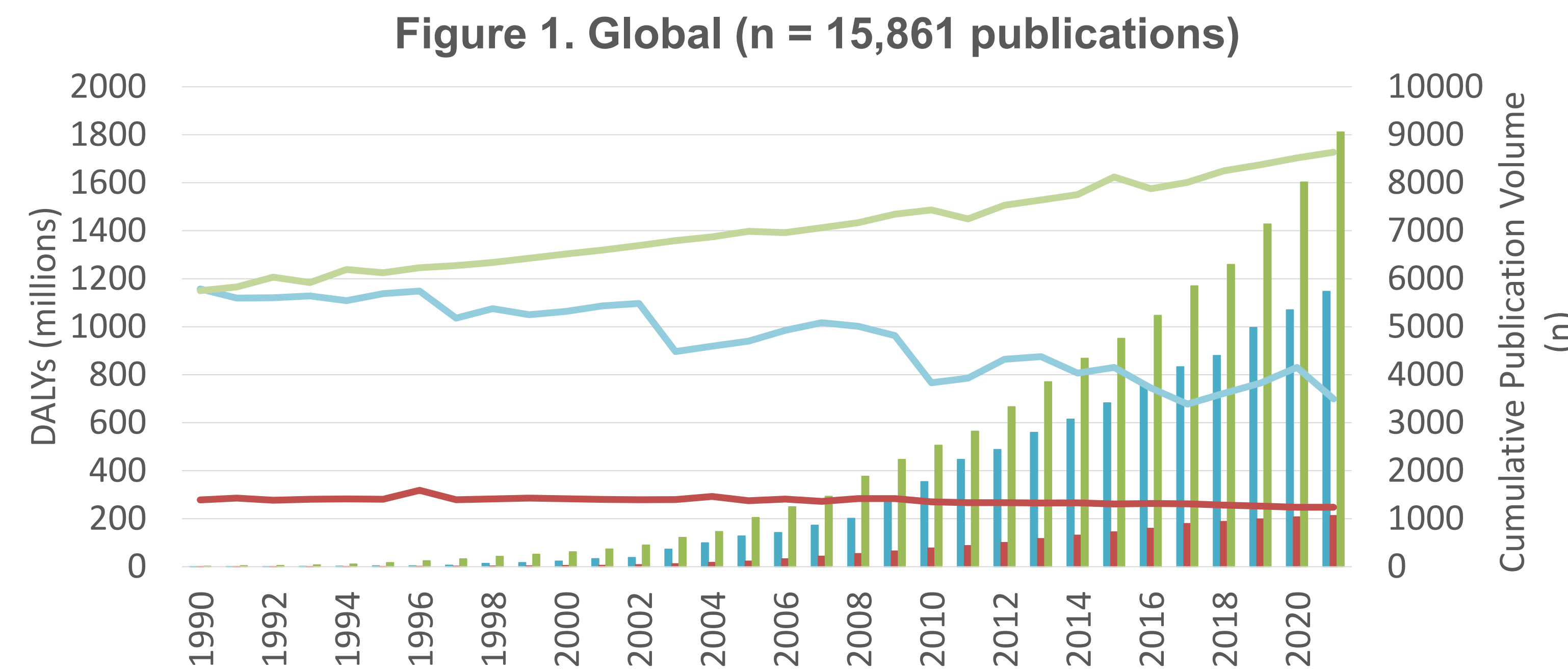
- CEAs published between 1990 and 2021 from the Tufts Medical Center CEA Registry
- Country-specific global burden of disease (GBD) estimates between 1990 and 2021 from the Global Burden of Disease Study
- Region and income group classification from the World Bank (2021)

Analysis

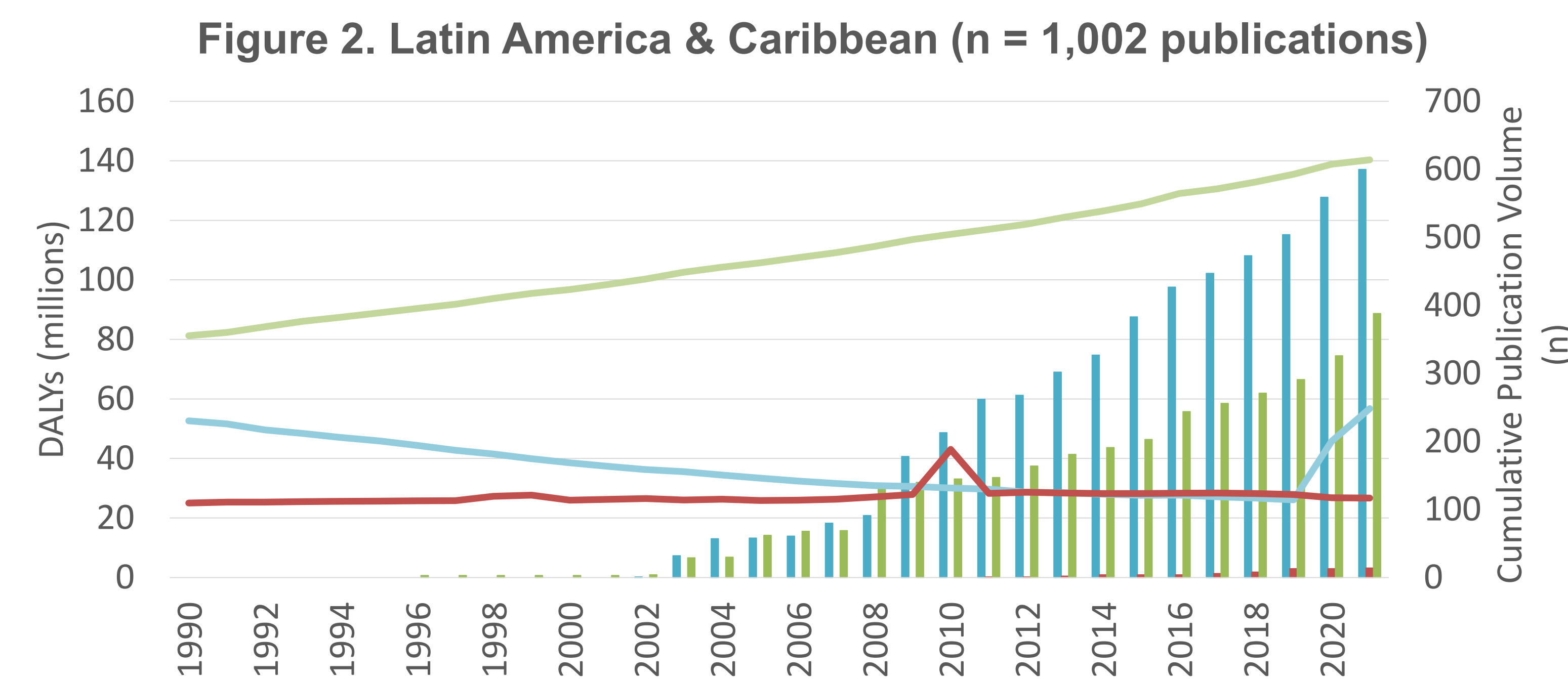
CEAs were linked to global burden of disease estimates by country, GBD tier 1 causes, and year to assess availability of CEA publication compared to burden of disease estimates, with further stratification by:

- World Bank Region
- Income Group (Low and lower-middle income vs. High and upper-middle income)

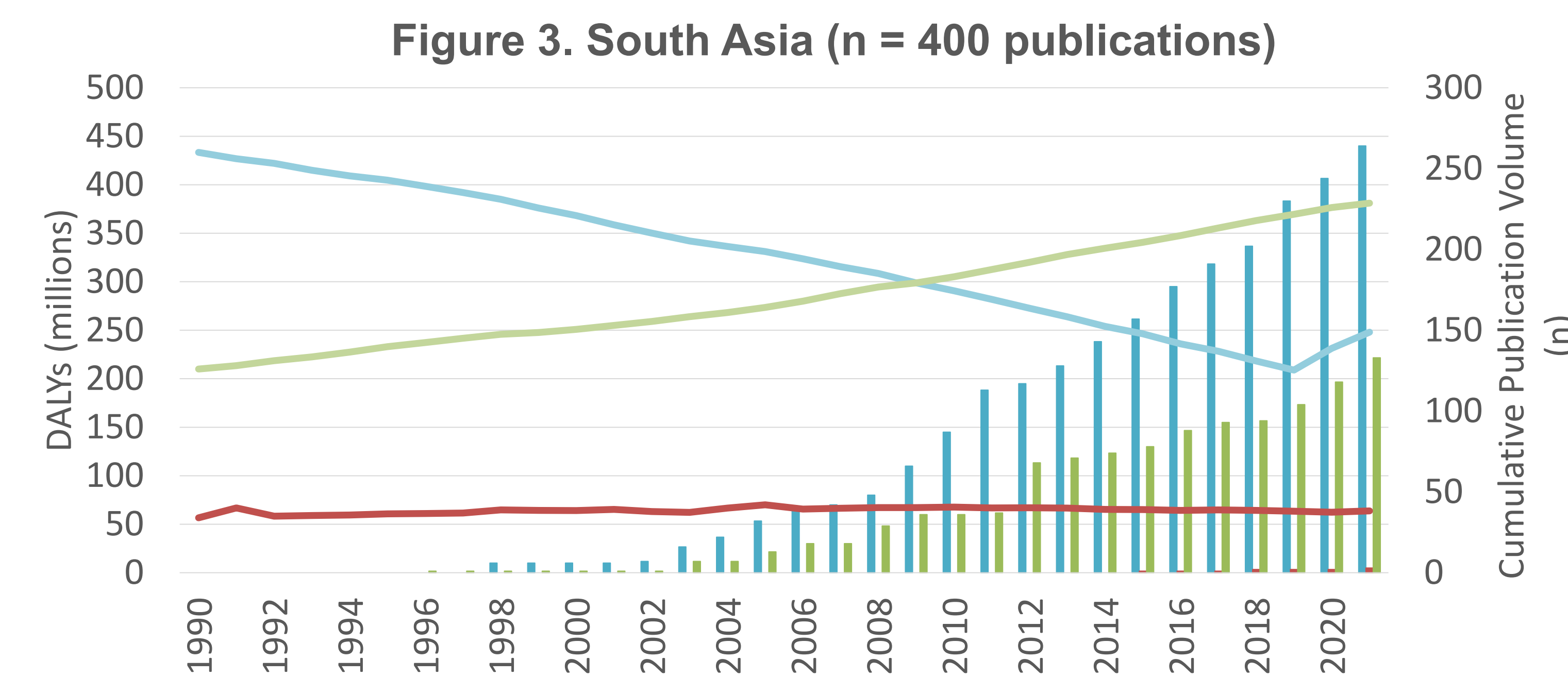
- In 2021, non-communicable diseases (NCDs) were responsible for 1,727.19 million DALYs, communicable, maternal, neonatal, and nutritional disease (CMNNs) for 699.19 million DALYs, and injuries for 63.68 million DALYs.



World Bank Region Variation



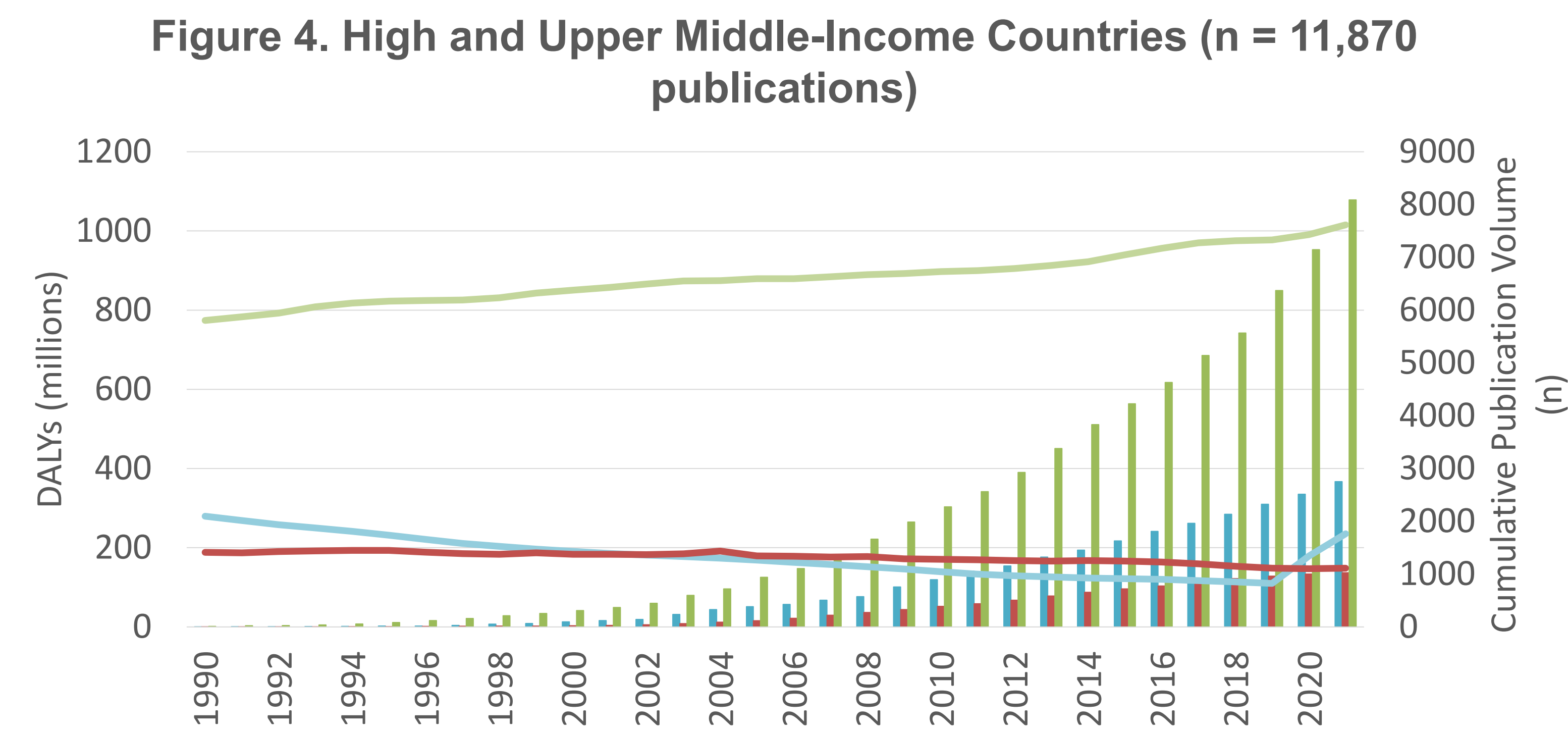
- In certain regions, including Latin America and the Caribbean, misalignment between trends in disease burden and publications are more apparent.



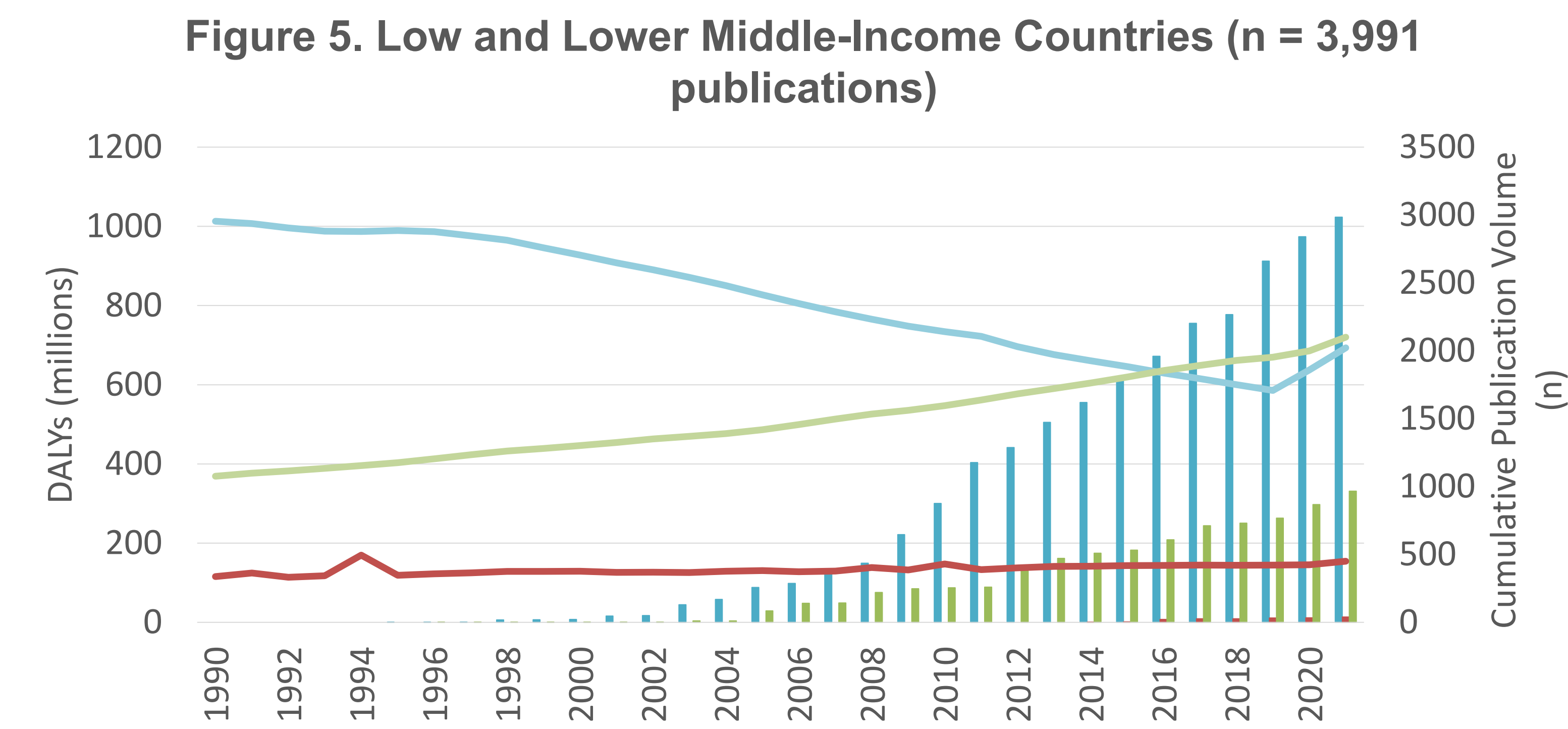
- In South Asia, NCDs overtook CMNNs by disease burden in 2009.

RESULTS

Income Group Variation

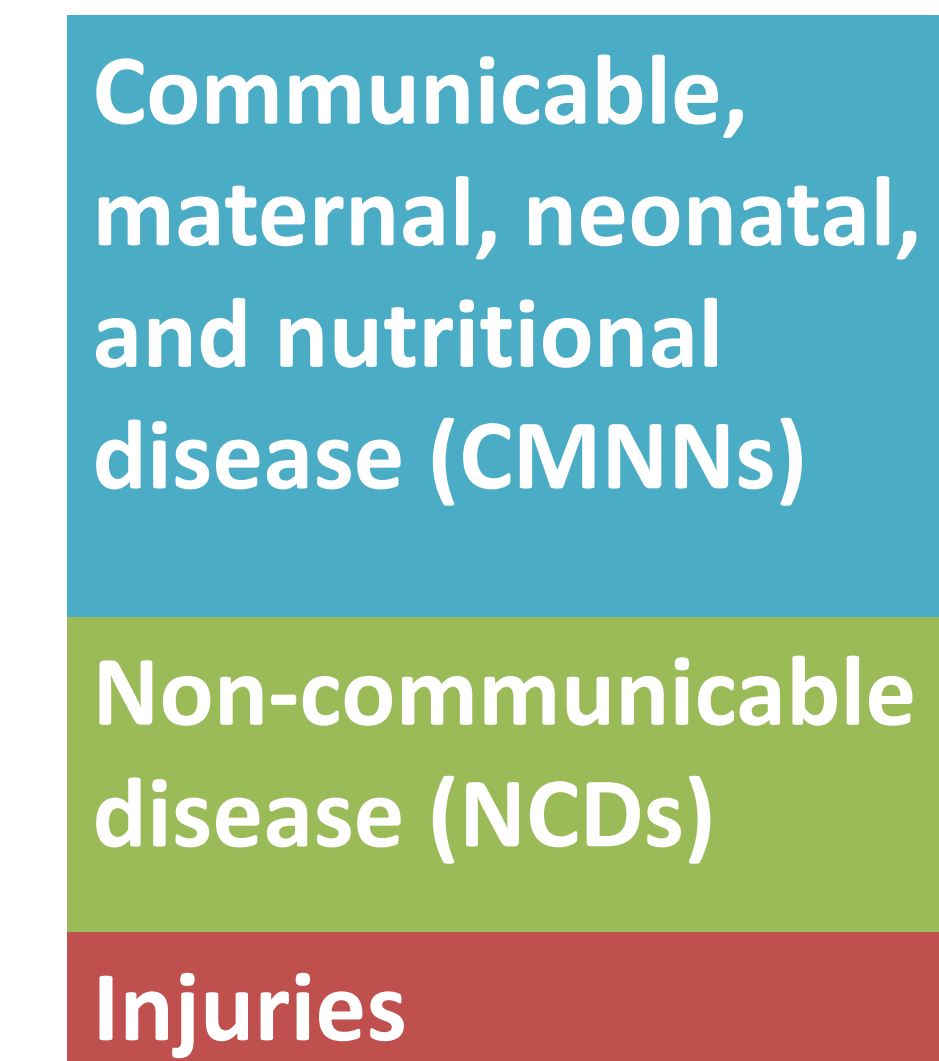


- Income-group trends reveal a much clearer split, with NCDs in HUMICs contributing over 4x the disease burden and nearly 3x the CEA publications compared to CMNNs.



- In 2021, 75% (n = 2,985) CEAs for LLMICs evaluated interventions addressing CMNNs despite a notable increase in burden of disease attributable to NCDs.

GBD Tier 1 Causes:



Legend

Lines – burden of disease (DALYs)

Bars – CEA publications

Key Points

- CEA publications are increasing across all regions and income groups.
- Globally, trends in publications reflect burden of disease trends with an emphasis on CEAs evaluating interventions to address NCDs.
- However, regional and income group stratification highlights that CEA priorities and disease burden causes vary greatly between groups.
- Burden of disease due to NCDs continues to rise globally and within key regions—surpassing CMNNs in some cases.
- In regions where disease burden cause has “flipped” the question is, *how will publication trends shift to address the most pressing health needs?*

CONCLUSION

As burden of disease trends shift across the globe with non-communicable diseases rising in many regions, understanding trends in CEA publications is paramount to ensuring that interventions addressing the most pressing public health needs are being evaluated. Furthermore, misalignment between CEA research and disease burden limits decision-makers’ ability to evaluate the value of vital interventions, with serious funding and health consequences.

REFERENCES

1. Neumann, P. J., Anderson, J. E., Panzer, A. D., Pope, E. F., D’Cruz, B. N., Kim, D. D., & Cohen, J. T. (2018). Comparing the cost-per-QALYs gained and cost-per-DALYs averted literatures. *Gates Open Research*, 2, 5. <https://doi.org/10.12688/gatesopenres.12786.2>

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For more information on the CEA Registry, contact CEA.Registry@tuftsmedicine.org.