

Decision-analytic Model-based Economic Evaluations of Integrated Care interventions for cardiometabolic multimorbidity: A Systematic Review

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Introduction:

- Multimorbidity (MM) burden is increasing in low- and middle-income countries (LMICs).
- Integrated care proposed to improve chronic disease management and could have positive impact on MM prevention and management.
- Limited evidence on sustainable cost-effective models of integrated care.
- However, it is unclear how to cost-effectively configure health service pathways for MM patients.

Objective:

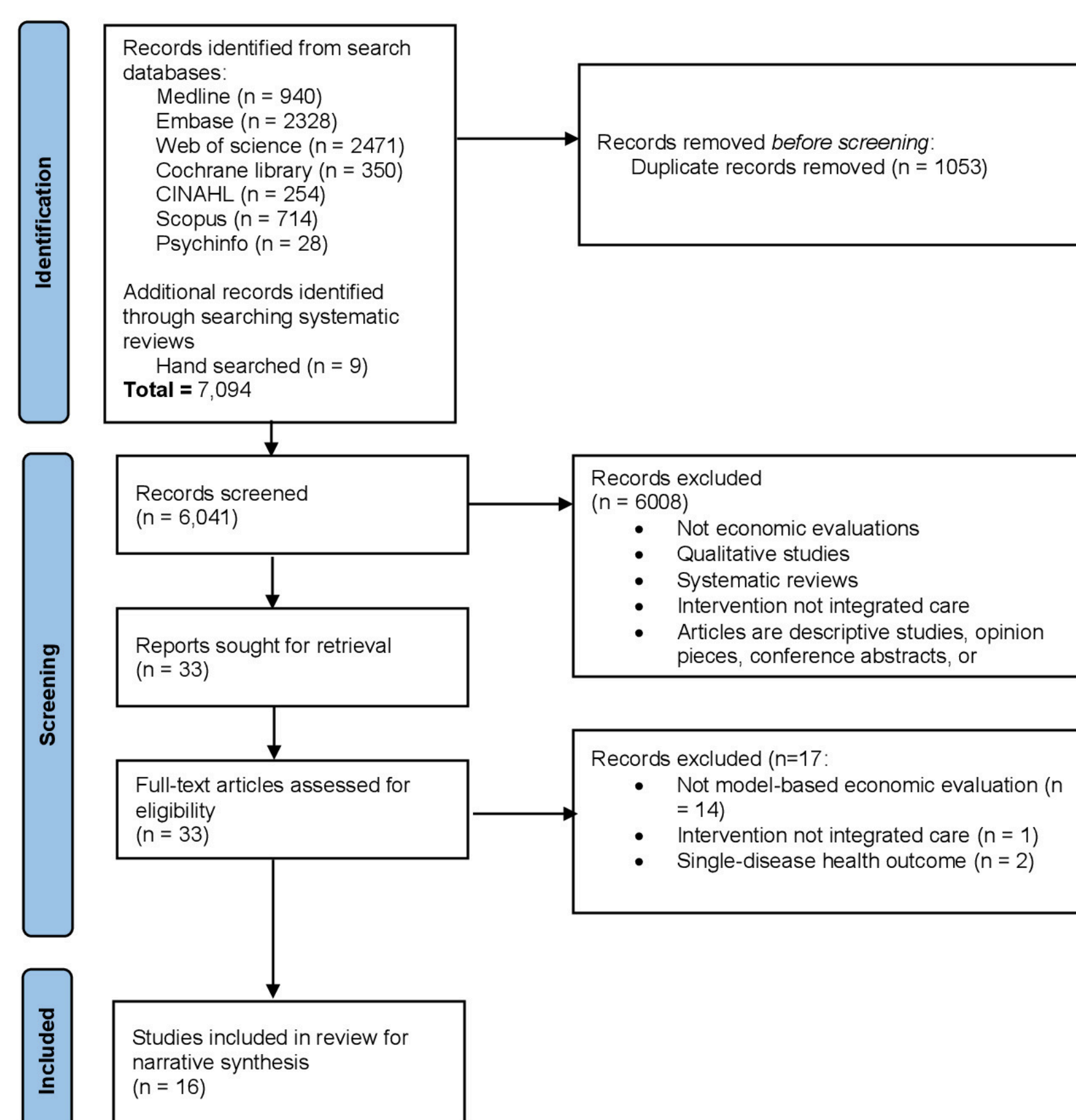
- This study aimed to review and appraise decision analytic models (DAMs) used in economic evaluations of integrated care interventions for patients with cardiometabolic multimorbidity.

Methods:

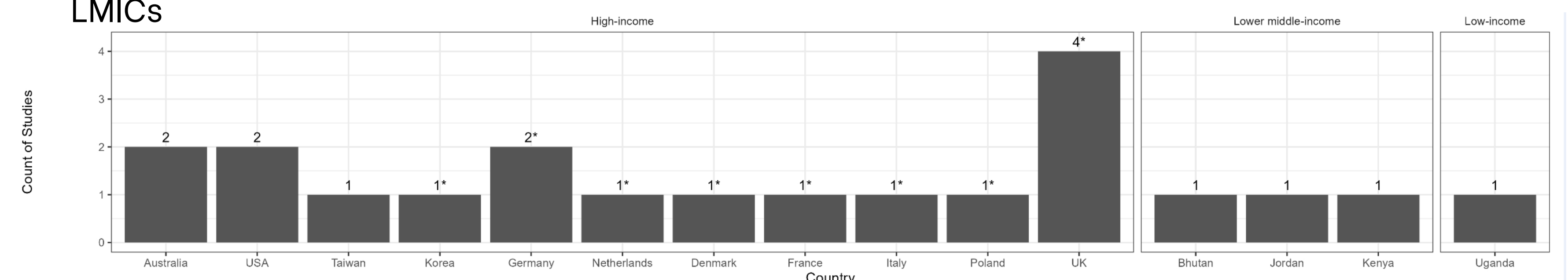
- Conducted a systematic search for peer-reviewed articles in seven electronic databases, published in English language until October 2024.
- **Eligibility:** Any study worldwide that used a decision-analytic model to conduct an economic evaluation of an integrated care model for patients at risk/ having cardiometabolic multimorbidity.
- **Integrated care:** Model presenting two or more elements of chronic care model.
- **Cardiometabolic multimorbidity:** The existence of two or more chronic diseases in the same individual, at least one of which was a cardiometabolic disease.
- **Data extraction:** characteristics of the DAMs, integrated care models evaluated, diseases constituting multimorbidity, economic evaluation results.
- **Quality of reporting:** Used Philips (2006) checklist.

Results:

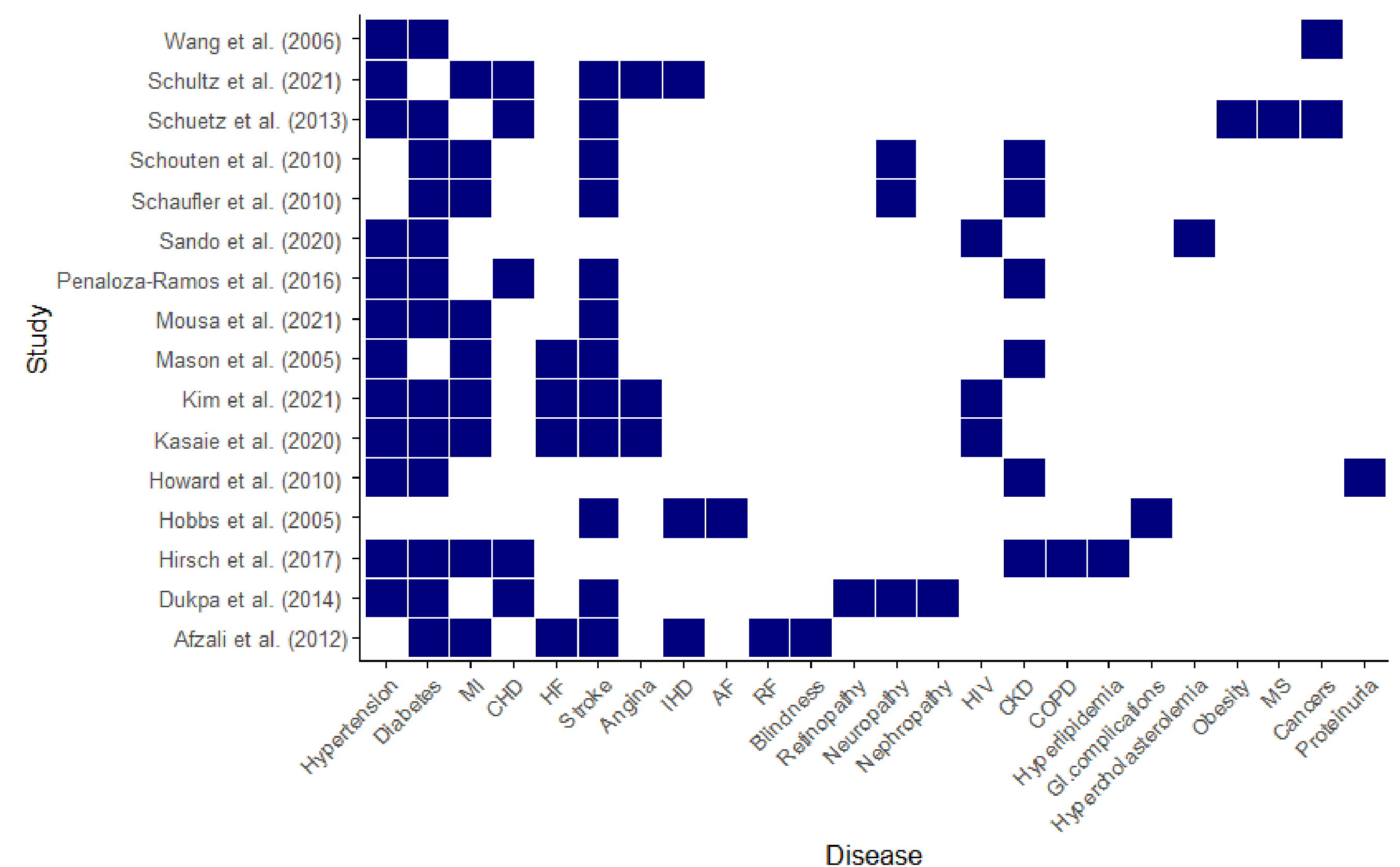
- **Studies Identified:** 16 Full-text articles



- **Geographical distribution:** Most studies conducted in high-income countries. Only 4 in LMICs

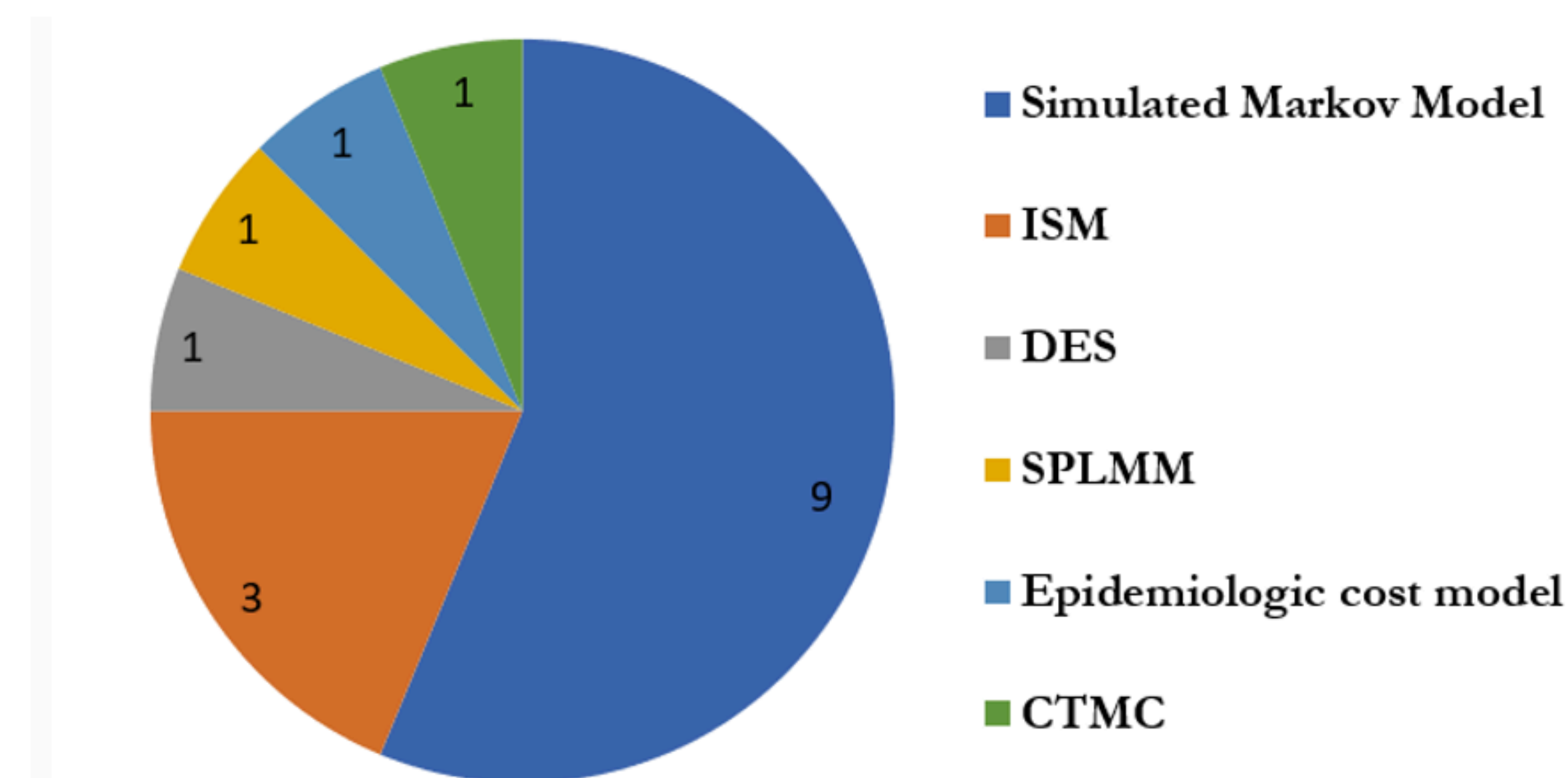


- **Disease combinations:** Majority were focused on concordant multimorbidity.



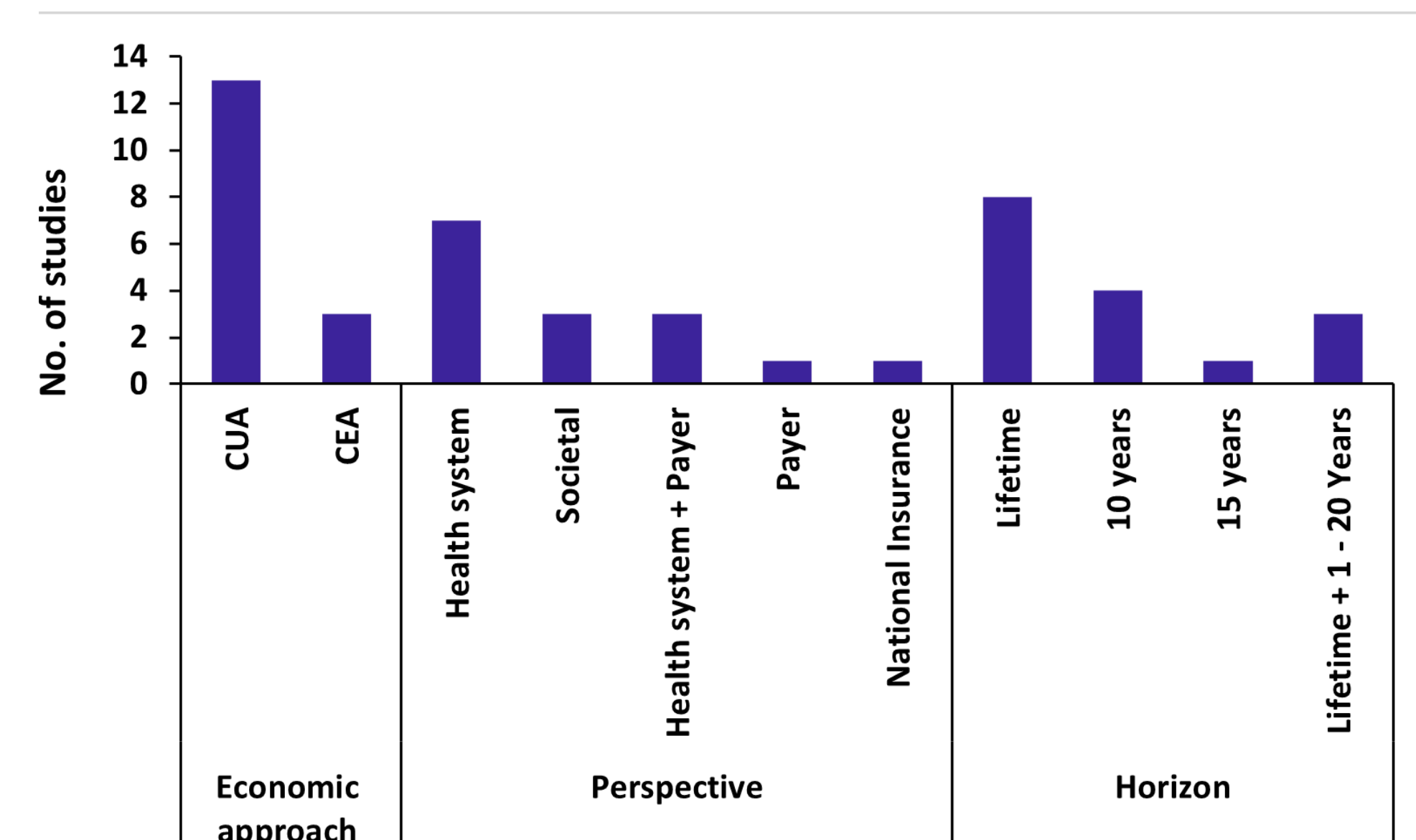
All integrated care models evaluated in selected studies were found to be cost-effective in their contexts.

- **DAMs used for evaluations:** Majority were simulated markov models



ISM: Individual simulation model, **DES:** Discrete event simulation, **SPLMM:** Simulated patient-level Markov model, **CTMC:** Continuous time Markov Chain

- **Model Characteristics:** Majority were CUA, health system perspective & lifetime Horizon



Conclusion & recommendations:

- Most model-based economic evaluations mostly conducted in high-income countries
- Most often hypertension or diabetes as the main diseases, and concordant multimorbidity (related conditions/ complications e.g. stroke, MI, CHD)
- Majority DAMs for economic evaluations were cohort Markov models
- More economic evaluations in LMICs should use individual simulation models that incorporate repeated patient interactions with health care and multimorbidity outcomes.
- Consideration of uncertainty in data sources and model structure is needed to provide robust conclusions.

References:

- Wagner EH. Chronic disease management: what will it take to improve care for chronic illness? Effective clinical practice. 1998;1(1).
- Singer SJ, Burgers J, Friedberg M, Rosenthal MB, Leape L, Schneider E. Defining and measuring integrated patient care: promoting the next frontier in health care delivery. Medical Care Research and Review. 2011;68(1):112-27.

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