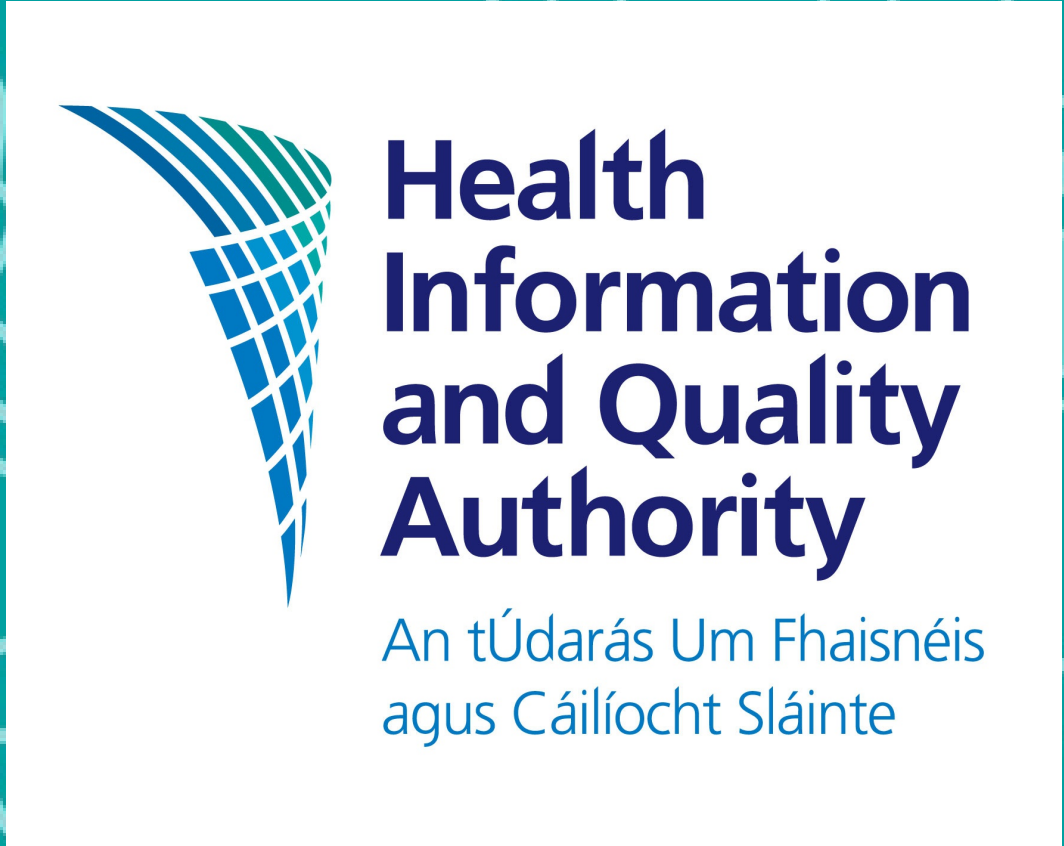


Patterns of collaboration in published cost-effectiveness analyses

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Background

Economic evaluation is a multidisciplinary activity, requiring both methodological and topic expertise, often necessitating collaboration to complete an analysis. The affiliations of authors have tended to fall into a small number of distinct groupings, including academic, industry, consultancy, clinical, and governmental organisations. Each of these groups have distinct aims and motivations, some of which are known to introduce a risk of bias. Previous work has looked at collaboration patterns in cost-effectiveness analyses conducted in Spain.¹ However, Spain represents only a small portion of analyses conducted and may not be more widely representative.

It is also important to acknowledge that the landscape of publishing cost-effectiveness analyses is changing - with increasing reach and diversity in terms of where they are published and by whom (see adjacent poster EE535). This means that patterns of collaboration may also be changing.

The aim of this study was to look at the different broad groups publishing in health economics, and to explore the extent to which authors from different groups and countries collaborate on papers.

Methods

We searched Pubmed for published papers that included cost-effectiveness or cost-utility analyses and made reference to the incremental cost-effectiveness ratio in the abstract. We did not apply limits to the publication date or language. We included studies with two or more authors and where affiliation details were given for all authors.

Practice regarding the coding of affiliations in PubMed has changed over time. Until 2013 it was standard to only record a single affiliation for the first author, and no other affiliations. Since 2013 it has become typical to record at least one affiliation for each author.

We coded affiliations based on country and type. The type classifications used were: academic, HTA agency, clinical, consultancy, industry, or research. The coding relied on interpreting the text description of the affiliation, which sometimes included limited information. Hospital-based affiliations were generally recorded as clinical unless there was additional information to suggest a different classification. Non-academic research groups were typically government agencies that were not specialised in HTA. Country classification was based on the details available in the affiliation field. Where authors had multiple affiliations recorded, the first listed was used for analysis.

Results

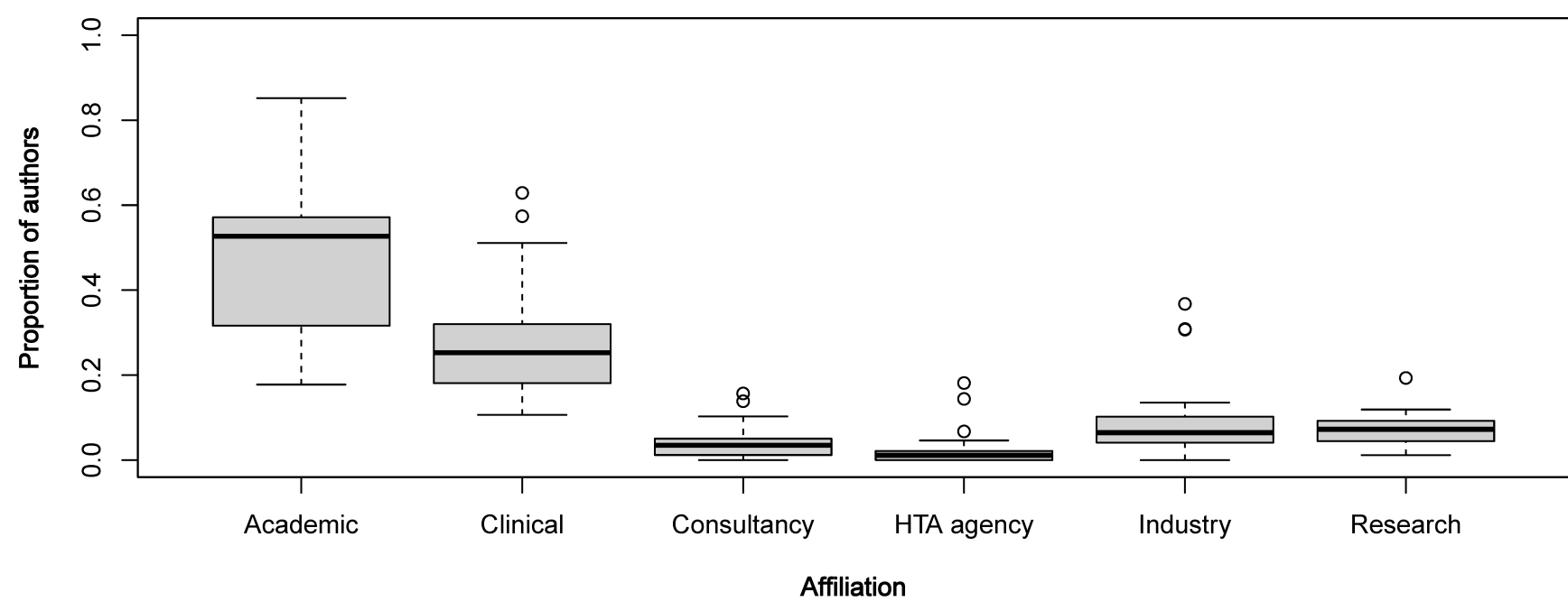
We identified 2,426 papers for inclusion. The included papers were published across 702 journals between 2009 and 2022. The most commonly represented affiliation group was academics (78.4% of papers) followed by clinical (51.6%) (Table 1). Other than the academic and clinical groups, for the other four groups at least 95% of papers involved collaboration with other groups. Collaboration between at least two affiliation groups occurred in 66% of papers. There was variability in proportion of authors by affiliation group across countries (Figure 1). The most common type of collaboration was between academic and clinical authors (37%), followed by academic and research groups (20%) (Figure 2). HTA agency staff almost always collaborated with other groups, but rarely with industry. Fifty six percent of papers involving industry also involved consultancy authors.

Although there has been a general trend over time for an increasing average number of authors per paper, the number of affiliation groups represented per paper has decreased. The proportion of authors by affiliation group has been largely stable over time (from 2010 to 2022). A total of 91 countries were represented by authors, although the top ten countries accounted for 78% of authors. Thirty five percent of papers included authors from the US, 20% from the UK, and 13% from China. The rate of publication is increasing overall, but has plateaued in the UK since 2015. Sixty eight percent of papers included authors from one country only. The most common international collaborations were between the US and the UK (5% of papers) and the US and Canada (3% of papers). There was no apparent consistent pattern of collaboration between authors from different countries (Figure 3).

Table 1. Frequency of publication by affiliation class

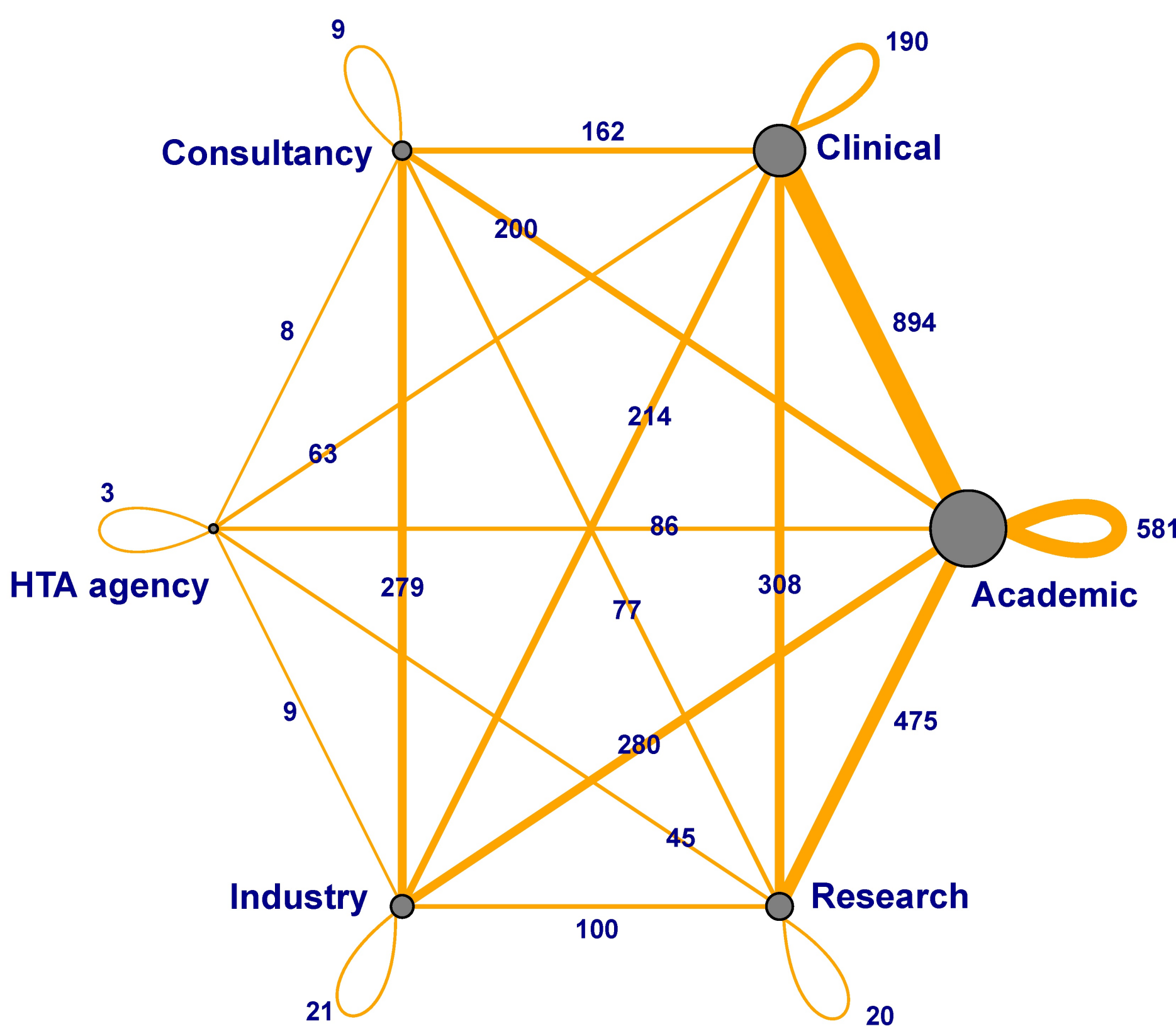
Classification	Papers containing an author from this group	Papers containing only authors from this group
	n (%)	n (%)
Academic	1,903 (78.4%)	581 (23.9%)
Clinical	1,253 (51.6%)	190 (7.8%)
Consultancy	377 (15.5%)	9 (0.4%)
HTA agency	125 (5.2%)	3 (0.1%)
Industry	495 (20.4%)	21 (0.9%)
Research	601 (24.8%)	20 (0.8%)

Figure 1. Proportion of authors by affiliation class in countries with at least 100 authors



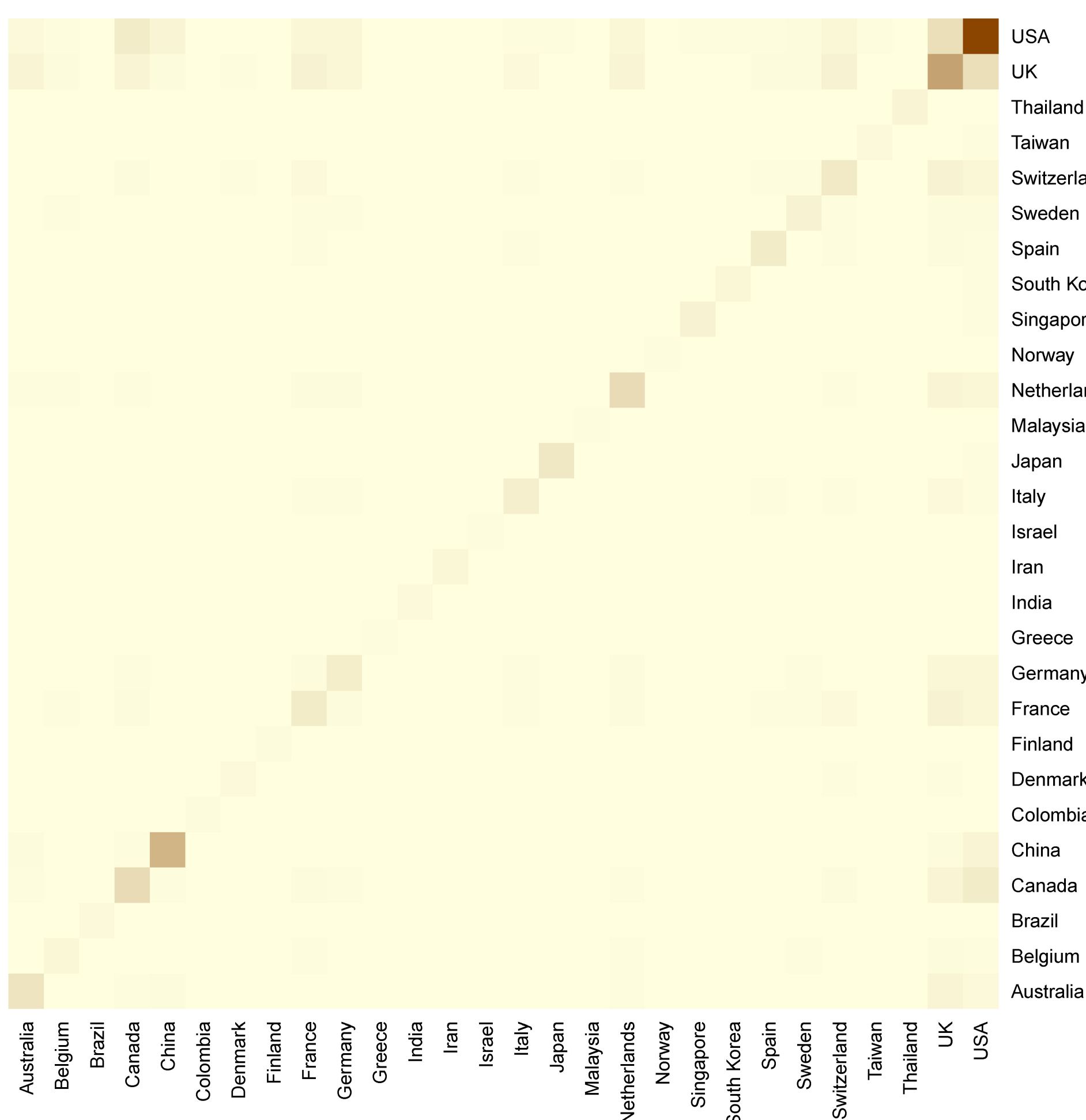
Footnote: Figures only shown for countries with at least 100 authors (n = 21 countries)

Figure 2. Frequency of collaborations by affiliation class



Footnote: the figures displayed on the edges indicate the number of papers that included a specific collaboration.

Figure 3. Frequency of collaborations by continent



Footnote: limited to countries that represented on at least 50 papers (n=28).

Conclusions

Findings.

This study set out to look at the different broad groups publishing in health economics, and to explore the extent to which authors from different groups and countries collaborate on papers. We found that the most active group in publishing was academics, followed by clinical and (non-academic) research groups. The most common collaborative link is between academic and clinical authors. While collaboration between different affiliation groups is more common than not, collaboration between authors from different countries is less common.

Interpretation

Collaboration across affiliation groups is alive and well, and may reflect the need to balance topic and methodological expertise. Failure to collaborate may limit a research group's ability to encompass both types of expertise. Cross-country collaboration is less relevant because differences in costs and treatment pathways across jurisdictions may mean that a cost-effectiveness analysis is generally country-specific.

Strengths and limitations

This analysis used a PubMed search and was limited to studies that reported affiliations for each author. Interpretation of the affiliation was based on the textual information available. There is a lack of consistency in how affiliations are recorded, even within an institution, creating challenges for automated coding.

Conclusions

Collaboration in research is important to ensure that a study is informed by the requisite skills, knowledge and expertise. Cost-effectiveness, particularly in the context of health technology assessment, is a multi-disciplinary process and benefits from collaboration. It is clear that collaboration is alive and well.

References

1. Catala-Lopez et al. Coauthorship and Institutional Collaborations on Cost-Effectiveness Analyses: A Systematic Network Analysis. PLoS ONE 7(5): e38012. doi:10.1371/journal.pone.0038012