



Supporting Information

Supplementary methods

**This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.**

Appendix to: Forbes M, Bhowon Y, Mintzes B. Pharmaceutical company payments to Australian doctors, 2019–22 reported to Medicines Australia: a cross-sectional analysis. *Med J Aust* 2024; doi: 10.5694/mja2.52284.

Supplementary methods

Data on payments to health professionals from November 2019 to October 2022 was downloaded from <https://www.disclosureaustralia.com.au/search/> (Medicines Australia website) on 7 June 2023. This information included individual payments to health professionals, with columns of company name, name, healthcare professional type, practice address, type of service, type of event, payment recipient, registration fees, travel costs, fees for services, and reporting period. All analyses were conducted using R statistical software (version 4.2.0).

The names of all medical professionals who received money over the reporting period were recorded and entered in spreadsheet A. There were 8036 unique name entries, but these included duplicated names with variations due to initials and middle names.

These names were entered into the AHPRA Register of Practitioners (<https://www.ahpra.gov.au/Registration/Registers-of-Practitioners.aspx>) with the first option on the drop-down menu selected. The name, sex, state, suburb and specialty provided from the Medical Board of Australia were then recorded in spreadsheet B.

Matching of spreadsheet A and spreadsheet B was undertaken in R using the Jaro-Winkler distance method from the stringdist R package¹. This is an efficient approximate matching algorithm that examines typographical variation within strings with a calculation based on matching characters and the number of transpositions. We utilised a Jaro-Winkler threshold of ≥ 0.8 to match Medicines Australia data to AHPRA data. There were 351 individual searches completed where the Jaro-Winkler threshold was < 0.8 and an additional 800 random searches were completed to assess accuracy of the linkage method. These searches were undertaken using aushealthpages.com.au and an internet search using Google, similar to other methodological approaches². Where a specialist had two specialties, the specialty they primarily practice in was listed to avoid double counting.

The number of specialists for each specialty category were obtained from supplementary tables of the AHPRA Annual Report 2021/22 (<https://www.ahpra.gov.au/Publications/Annual-reports/Annual-Report-2022.aspx>) which was close to the mid-point of the study period. Figure 1 was calculated by dividing the total number of specialists who received any transfer of value and then dividing the amount into the total number of specialists according to the AHPRA Annual Report 2021/22. Given the fact that Medicines Australia data represent a majority, but not all, payments from pharmaceutical companies to medical practitioners, we also included 95% confidence intervals in Figure 1 using the formula for the confidence interval of for a proportion p with a sample size n :

$$p \pm z \times \sqrt{\frac{p(1-p)}{n}}$$

Summary statistics were calculated using basic R commands. The per capita amount was calculated by summing the total amount received by all medical practitioners within a specialty and dividing this by the total of specialists in that specialty, obtained from the AHPRA 2021/22 report. For example, the total amount paid to all cardiologists within the time period was \$3,684,307 and there were 1,620 cardiologists in Australia in 2021/22. Thus the per capita amount is $3,684,307/1,620$ or \$2,274.

References

1. van der Loo MPJ. The stringdist package for approximate string matching. R Journal 2014; 6: 111-122.
2. Pokorny AMJ, Bero LA, Moynihan R, Mintzes BJ. Industry payments to Australian medical oncologists and clinical haematologists: a cross-sectional analysis of publicly available disclosures. Intern Med J 2021; 51: 1816-1824.