

Background

The estimated prevalence of chronic pain (CP) varies from 35% to 51%, with up to 14% of people having moderate-to-severely disabling CP (1).

Currently, we cannot identify who has CP by searching electronic health records (EHRs).

Standard survey approaches are open to bias (non-response, sampling or selection bias) and around 50% of people with CP do not take regular prescribed analgesics (2).

This poses a challenge for research, health and social care service planning.

Aim

To identify the optimal combination of Read codes needed to construct an algorithm that accurately identifies people with CP from their EHRs.

Methods

Through a consensus process, the research team, which included people with lived experience of CP, identified clinical Read codes, prescribing data, and secondary care referral data that might potentially be associated with CP. These were classified into 11 code-sets with each code-set relating to a specific condition or prescription likely to be related to CP (e.g. one code-set for trigeminal neuralgia; one for analgesic prescriptions, etc.).

These code-sets were then combined in a step-wise manner to create a series of 13 indicators, with each indicator taking account of an additional code-set. These were used to develop a CP rules-based algorithm, initially tested in an anonymised dataset from one GP practice, then in six GP practices across Scotland ensuring a mix of deprivation status, rurality and practice size [ranged from 2,113 to 8,425; with a mean of 5,411 patients].

NHS Highland:
Aultbea & Gairloch Medical Practice

NHS Tayside:
Kirriemuir, Edzell and Terra Nova Medical Practices

NHS Lothian:
Craigmillar and Dalhousie Medical Practices

This work was done in conjunction with the Scottish Primary Care Information Resource/ Public Health Scotland.

Results

We identified around **1,725** codes for inclusion in the algorithm. These included:
7 codes to identify unconsented patients to exclude from the output
11 codes to identify epilepsy diagnosis for those who were prescribed epilepsy drugs to exclude them from the output
349 codes for epilepsy drugs
936 codes for analgesic drugs
420 codes for diagnostic and
2 codes for secondary care referral
 Using the algorithm (with multiple codes) to search EHRs an additional 11,915 (36.7%) people were identified as potentially having CP from the six GP Practices.

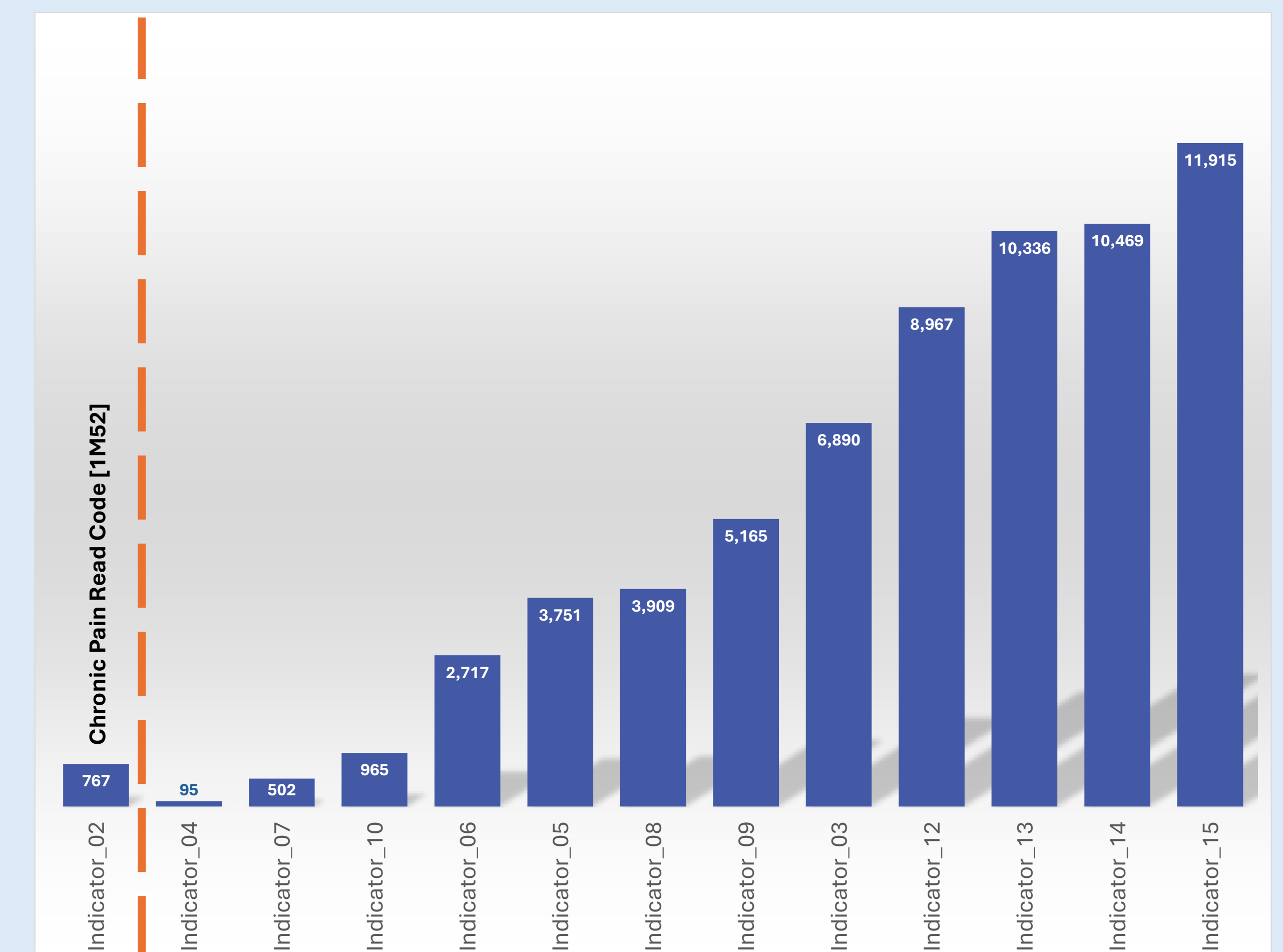


Figure 1: The number of patients identified as potentially having CP using different indicators

Conclusion

The use of the CP code to identify people with CP is inadequate. By using the algorithm, the number of people identified as potentially having CP is similar to prevalences reported in the current literature, but further validation is needed to confirm accuracy. Once validated, the algorithm could be utilised for effective service planning and patient care including safe and effective management of chronic pain.

Acknowledgement

This research is funded by the Scottish Government's Chief Scientist Office

References:

1. Fayaz A, Croff P, Langford RM, Donaldson LJ, Jones GT. Prevalence of chronic pain in the UK: a systematic review and meta-analysis of population studies. *BMJ open*. 2016 Jun 1;6(6):e010364. <https://doi.org/10.1136/bmjopen-2015-010364>
2. Torrance N, Mansoor R, Wang H, Gilbert S, Macfarlane GJ, Serpell M, Baldacchino A, Hales TG, Donnan P, Wyper G, Smith BH. Association of opioid prescribing practices with chronic pain and benzodiazepine co-prescription: a primary care data linkage study. *British journal of anaesthesia*. 2018 Jun 1;120(6):1345-55. <https://doi.org/10.1016/j.bja.2018.02.022>