

## COCHRANE CORNER

**Clinical judgement by primary care physicians for the diagnosis of all-cause dementia or cognitive impairment in symptomatic people: a Cochrane Review<sup>†</sup>**

Samuel T. Creavin, Anna H Noel-Storr, Ryan J. Langdon, Edo Richard, Alexandra L. Creavin, Sarah Cullum, Sarah Purdy &amp; Yoav Ben-Shlomo

<sup>†</sup>This review is the abstract of a Cochrane Review previously published in the *Cochrane Database of Systematic Reviews*, 2022, Issue 6: CD012558, doi: 10.1002/14651858.CD012558.pub2 (see [www.cochranelibrary.com](http://www.cochranelibrary.com) for information). Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback, and the *Cochrane Database of Systematic Reviews* should be consulted for the most recent version of the review.

We thank the Cochrane Dementia and Cognitive Improvement Group for their support in publishing this review.

See Round the Corner in this issue.

**Copyright and usage**

Copyright © 2023 The Cochrane Collaboration. Published by John Wiley & Sons, Ltd.

**Background**

In primary care, general practitioners (GPs) unavoidably reach a clinical judgement about a patient as part of their encounter with patients, and so clinical judgement can be an important part of the diagnostic evaluation. Typically clinical decision making about what to do next for a patient incorporates clinical judgement about the diagnosis with severity of symptoms and patient factors, such as their ideas and expectations for treatment. When evaluating patients for dementia, many GPs report using their own judgement to evaluate cognition, using information that is immediately available at the point of care, to decide whether someone has or does not have dementia, rather than more formal tests.

**Objectives**

To determine the diagnostic accuracy of GPs' clinical judgement for diagnosing cognitive impairment and dementia in symptomatic people presenting to primary care. To investigate the heterogeneity of test accuracy in the included studies.

**Search methods**

We searched MEDLINE (Ovid SP), Embase (Ovid SP), PsycINFO (Ovid SP), Web of Science Core Collection (ISI Web of Science), and LILACS (BIREME) on 16 September 2021.

**Selection criteria**

We selected cross-sectional and cohort studies from primary care where clinical judgement was determined by a GP either prospectively (after consulting with a patient who has presented to a specific encounter with the doctor) or retrospectively (based on knowledge of the patient and review of the medical notes, but not relating to a specific encounter with the patient). The target conditions were dementia and cognitive impairment (mild cognitive impairment and dementia) and we included studies with any appropriate reference standard such as the Diagnostic and Statistical Manual of Mental Disorders (DSM), International Classification of Diseases (ICD), aetiological definitions, or expert clinical diagnosis.

**Data collection and analysis**

Two review authors screened titles and abstracts for relevant articles and extracted data separately with differences resolved by consensus discussion. We used QUADAS-2 to evaluate the risk of bias and concerns about applicability in each study using anchoring statements. We performed meta-analysis using the bivariate method.

**Main results**

We identified 18 202 potentially relevant articles, of which 12 427 remained after de-duplication. We assessed 57 full-text articles and extracted data on 11 studies (17 papers), of which 10 studies had quantitative data. We included eight studies in the meta-analysis for the target condition dementia and four studies

for the target condition cognitive impairment. Most studies were at low risk of bias as assessed with the QUADAS-2 tool, except for the flow and timing domain where four studies were at high risk of bias, and the reference standard domain where two studies were at high risk of bias. Most studies had low concern about applicability to the review question in all QUADAS-2 domains.

Average age ranged from 73 years to 83 years (weighted average 77 years). The percentage of female participants in studies ranged from 47 to 100%. The percentage of people with a final diagnosis of dementia was between 2 and 56% across studies (a weighted average of 21%). For the target condition dementia, in individual studies sensitivity ranged from 34 to 91% and specificity ranged from 58 to 99%. In the meta-analysis for dementia as the target condition, in eight studies in which a total of 826 of 2790 participants had dementia, the summary diagnostic accuracy of clinical judgement of general practitioners was sensitivity 58% (95% confidence interval (CI) 43 to 72%), specificity 89% (95% CI 79 to 95%), positive likelihood ratio 5.3 (95% CI 2.4 to 8.2), and negative likelihood ratio 0.47 (95% CI 0.33 to 0.61).

For the target condition cognitive impairment, in individual studies sensitivity ranged from 58 to 97% and specificity ranged from 40 to 88%. The summary diagnostic accuracy of clinical judgement of general practitioners in four studies in which a total of 594 of 1497 participants had cognitive impairment was sensitivity 84% (95% CI 60 to 95%), specificity 73% (95% CI 50 to 88%), positive likelihood ratio 3.1 (95% CI 1.4 to 4.7), and negative likelihood ratio 0.23 (95% CI 0.06 to 0.40).

It was impossible to draw firm conclusions in the analysis of heterogeneity because there were small numbers of studies. For specificity we found the data were compatible with studies that used ICD-10, or applied retrospective judgement, had higher reported specificity compared to studies with DSM definitions or using prospective judgement. In contrast for sensitivity, we found studies that used a prospective index test may have had higher sensitivity than studies that used a retrospective index test.

**Authors' conclusions**

Clinical judgement of GPs is more specific than sensitive for the diagnosis of dementia. It would be necessary to use additional tests to confirm the diagnosis for either target condition, or to confirm the absence of the target conditions, but clinical judgement may inform the choice of further testing. Many people who a GP judges as having dementia will have the condition. People with false negative diagnoses are likely to have less severe disease and some could be identified by using more formal testing in people who GPs judge as not having dementia. Some false positives may require similar practical support to those with dementia, but some - such as some people with depression - may suffer delayed intervention for an alternative treatable pathology.