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Question

Which multivariable prognostic model(s) for recovery in people with neck pain can be used in primary care?

Introduction

- Numerous prognostic models for neck pain have been developed.
- These models have not been evaluated systematically using tools specifically designed to assess their quality and usability

Method

- Systematic review of prognostic models for recovery of patients with neck pain.
- Two reviewers (RWW,PMN) independently performed the search, selection, quality assessment, and data extraction of included studies with APV as arbiter.
- MEDLINE, EMBASE, and CINAHL were searched up to May 3,2016
- Quality was assessed using PROBAST, a specific tool for risk of bias, applicability and usability of multivariable prediction models studies.
- Qualitative synthesis was performed, model ready for clinical use if:
 - usable
 - externally validated in low risk of bias study
 - AUC \geq

Conclusion

- We found only 3 out of 99 models promising
- These models require further validation
- If valid, impact analysis is needed

Outcome

Recovery measured as pain reduction, reduced disability, or perceived recovery at short-term and long-term follow-up

Results

- 53 studies were found (46 derivation, 4 validation, 3 combined)
- In total 99 models
- All derivation models are of high risk of bias
- 3 externally validated models are usable and with low risk of bias:
 - Sterling (2012) WAD model AUC 0.85 (95% CI 0.79-0.91)
 - Schellingerhout (2010) non-specific neck pain model, AUC 0.65 (95% CI 0.59-0.71)
 - Ritchie (2015) two-way WAD model:
 - non-recovery: specificity 99% (95% CI 93-100), sensitivity 44% (95% CI 23-65)
 - recovery: specificity 86% (95% CI 73-94) and sensitivity 55% (95% CI 41-69)

