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Introduction to prognosis reviews

Carl Moons & Anneke Damen
on behalf of the Cochrane Prognosis Methods Group

Trusted evidence.
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Content

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Cochrane handbook for prognosis reviews

Editors: Karel Moons & Richard Riley

Associate editors: Anneke Damen, Lotty Hooft, Alfonso Iorio, Nicole Skoetz, Katrina Williams

Launch in October 2026 (Cochrane Colloquium India)

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Introduction to prognosis reviews

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Why SRs of prognosis studies?

- Increasing interest in and demand for the evaluation of prognostic factors, biomarkers & models, including AI/ML based models
- Growing number of primary prognosis studies
  - Precision, personalized or risk-based medicine
- Reviews of prognosis studies highly desired by practitioners, guideline developers, journals – certainly with the steep rise of prognosis studies (partly due to AI/ML)
- Reviews more challenging: more variation in questions, designs, effect measures, analyses – but many recent SR/MA method developments.

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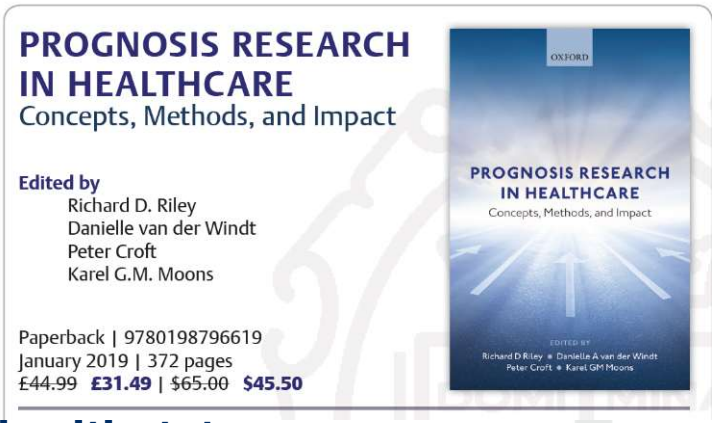
What is prognosis?



Forecast of the **course** and **outcome** for an **individual** in a **certain health state**

- Not necessarily sick people
- More technical: probable course/prediction of specific future outcomes in subjects with certain health condition or within a certain health state
- Disease does not have a prognosis → an individual does

See BMJ series 2009 (Altman, Moons, Royston, Vergouwe) + Progress series BMJ/Plos Med 2013

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Why do we prognosticate?

- To provide information to patients/individuals
- Identify groups for treatment or other (e.g. life style) management – including abstine of management
- To target specific prognostic factors that modify treatment effects
- Select high/low risk patients for inclusion in RCTs
- Adjust for case-mix differences in comparison of health care of institutes (benchmarking)

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Types of prognosis studies?

1. Average/overall prognosis: 'What is most likely course (outcome) of individuals with certain health condition?'

2. Prognostic factor studies: 'Which factors are associated with specific outcome in individuals with certain health condition?

3. Prognostic modeling studies: 'What combination of prognostic factors predict, and how well, a certain outcome in individuals with a certain health condition?'

See Progress series BMJ/Plos Med 2013

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Types of prognosis studies

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Prognostic factor studies

Aim:

- To identify factors associated with subsequent outcomes in subjects with certain health condition
- Not necessarily sick people (patients)
- Independent predictors

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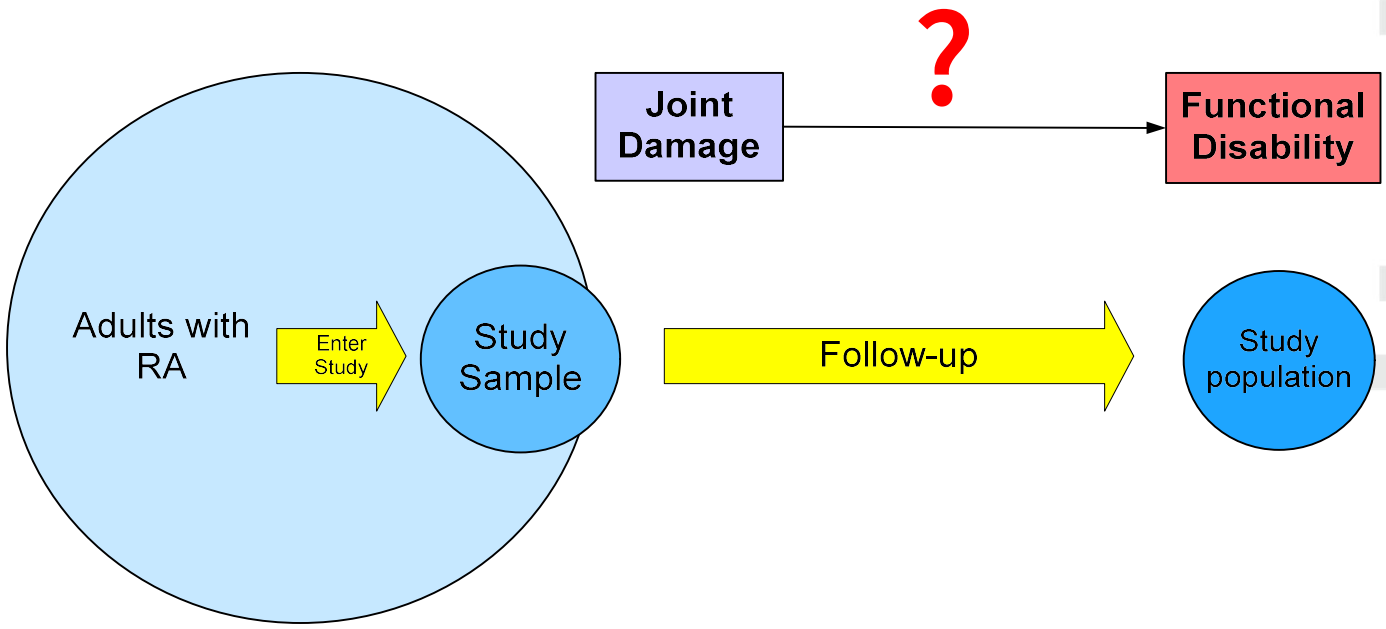
Prognostic Factor Study Example



Adapted from: *Fletcher & Fletcher, Clinical Epidemiology – The Essentials. Chapter 6. Williams & Wilkins, Baltimore. 1996*

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Types of prognosis studies

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What is a prognostic model study, and what is the difference with a multivariable analysis of prognostic factors?

Combination of 2 or more predictors in some kind of algorithm/formula that convert predictor values into an absolute probability of …

…(presence of disease/result of reference test – diagnostic prediction model)

…future occurrence of certain outcome – prognostic prediction models

A prediction model is developed for use in new individuals, to estimate their individual (diagnostic or prognostic) probability. Focus is on accuracy of entire model (discrimination + calibration). Predictors in the model not main interest.

Multivariable analysis of prognostic factors does not focus on the model, but rather on which are the independent predictors – Focus on HRs of the factors (adjusted HRs)

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What are the 3 phases of prediction podelling studies?

1. Model development studies – to develop prediction model from data: identify important predictors; estimate predictor weights; construct model for individualised predictions; quantify predictive performance; internal validation

2. Model validation studies – test (validate) predictive performance of previously developed model in participant data other than development set

3. Model impact studies – quantify effect/impact of actually using model on participant/physician management and health outcomes – relative to not using the model

What is the difference between 3 versus 1 and 2?

BMJ series 2009/Bouwmeester 2012/PROGRESS series 2013 (BMJ/Plos Med)

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3 Phases of Prediction Modelling studies

Big difference = 3 are comparative studies → ideally randomised

1 and 2 are by definition single cohort studies- no inherent comparison

3 are thus ideally RCTs – for SRs of prediction model impact studies use the Cochrane tools available for RCTs of intervention studies

BMJ series 2009/Bouwmeester 2012/PROGRESS series 2013 (BMJ/Plos Med)

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Steps of a prognosis review

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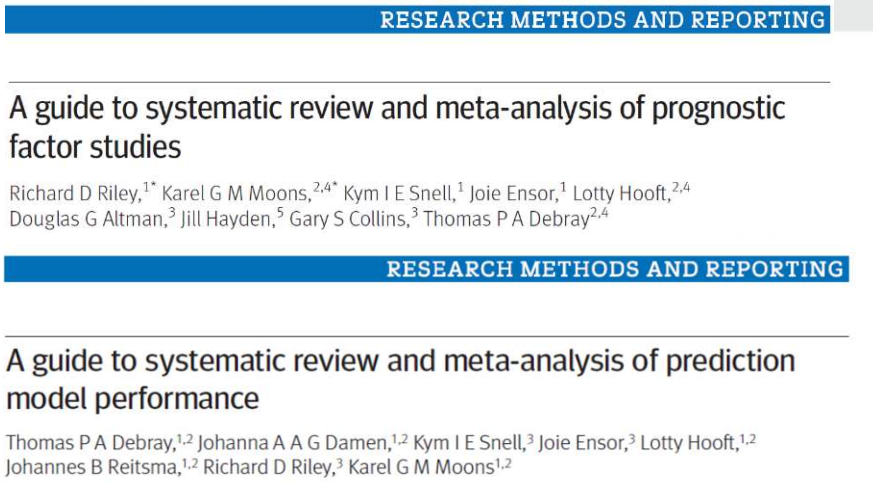
Conducting a systematic review of prognosis studies

1. Formulate review question (PICOTS)
2. Searching for studies
3. Screening and Selection of articles
4. Extraction of data
5. Risk of Bias assessments
6. Synthesis of data (meta-analysis)
7. Interpretation and conclusions



RESEARCH METHODS AND REPORTING

A guide to systematic review and meta-analysis of prognostic factor studies

Richard D Riley,[1*] Karel G M Moons,[2,4*] Kym I E Snell,[1] Joie Ensor,[1] Lotty Hooft,[2,4] Douglas G Altman,[3] Jill Hayden,[5] Gary S Collins,[3] Thomas P A Debray[2,4]

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Available via http://methods.cochrane.org/prognosis

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Step 1. Well-formulated review question: PICOTS

Guidance for framing review question: CHARMS checklist

Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies: The CHARMS Checklist

Plos Med 2014

Karel G. M. Moons[1¶*], Joris A. H. de Groot[1¶], Walter Bouwmeester[1], Yvonne Vergouwe[1], Susan Mallett[2], Douglas G. Altman[3], Johannes B. Reitsma[1], Gary S. Collins[3]

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BMJ 2019

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BMJ 2017

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PICOTS for SRs of Prognostic factor(s)

Item	Comment
1. Population	Target population in which the prognostic factor(s) under review will be used.
2. Index prognostic factor(s)	Index prognostic factor(s) whose prognostic ability is under review.
3. Comparator prognostic factor(s)	One or more comparator prognostic factors can be reviewed, if applicable. E.g. comparing prognostic ability of certain index factor to other (i.e. comparator) prognostic factors. Or review of the adjusted prognostic ability of a certain index factor, adjusted for other (i.e. comparator) prognostic factors. If aim is summarise unadjusted prognostic effect of index factor, then no comparator factor is addressed.
4. Outcome(s)	Outcome(s) of interest for the factor(s) under review.
5. Timing (two elements)	(i) at what time-point(s) prognostic factors (index and comparators) are to be used (time point of prognostication); (ii) over what time period outcome(s) are predicted.
6. Setting	Define the intended setting (role) of the prognostic factor(s) under review.

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PICOTS of SRs of Prognostic (prediction) model(s)

Item	Comment
1. Population	Target population in which prediction model(s) under review will be used.
2. Index prediction model(s)	Index prediction model(s) under review
3. Comparator prediction model(s)	One can compare the predictive ability of the index model to one or more other prediction models, if applicable.
4. Outcome(s)	Outcome(s) of interest for the model(s) under review.
5. Timing (two elements)	1. At what time-point(s) predicton models (index and comparators) are to be used (time point of prognostication); 2. Over what time period (notably for prognostic prediction models) outcome(s) are predicted.
6. Setting	Intended setting (role) of the prediction model(s) under review.

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Types of SR prognostic/prediction model questions

- Review all models for specific outcome in specific target population
  - Models predicting fatal/non-fatal coronary heart disease in middle-aged general population; models predicting stroke in 60+ of general population;
  - Models predicting survival after cardiac surgery ; predicting Length of stay after cardiac surgery ; predicting quality of life after surgery

- Review all existing models in a particular clinical field
  - e.g. all models for any cardiovascular disease outcome in general population; all developed models in obstetrics.

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Types of SR prognostic/prediction model questions

- How good is predictive performance of a specific model for a specific target population (validation studies only)
  - Predictive performance of Framingham risk model / GAIL model

- Review on added predictive value of a specific predictor/biomarker/test to a specific model
  - Adding CRP to Framingham risk score; D-dimer to Wells Rule
  - Adding imaging results to ‘basic risk scores’ (cancer models)

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Conducting a systematic review of prognosis studies

1. Formulate review question (PICOTS)
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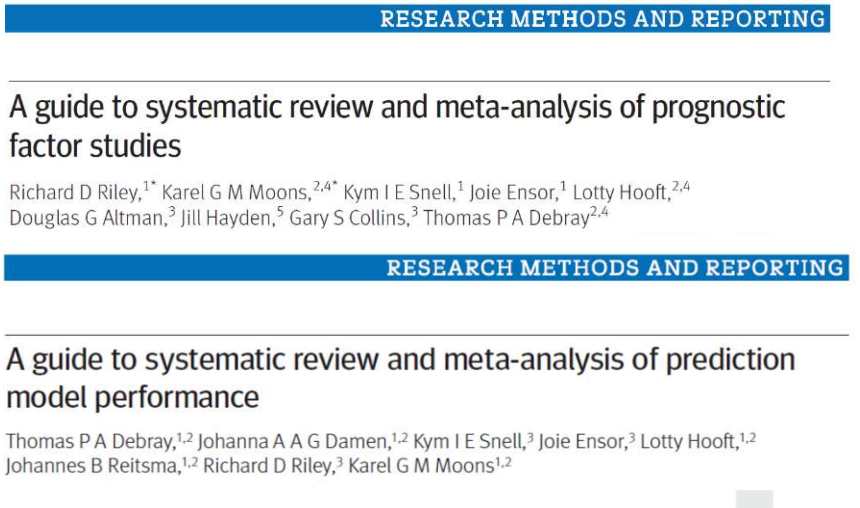

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Search strategies

- No optimal, reliable methods for searching the literature for prognostic information
  - As for RCTs and Diagnostic Test Accuracy Studies

- Some guidance published
  - Altman DG (2001): single prognostic factors
  - Wong SS (2003): very generic
  - Ingui BJ (2001): prediction models
  - **Geersing (2012): validation Ingui (2001) and updated (new) search strategy**
  - **Kavanagh (2021): Optimizing a literature surveillance strategy to retrieve sound overall prognosis and risk assessment model papers.**
  - **Stallings (2022): Development and evaluation of a search filter to identify prognostic factor studies in Ovid MEDLINE.**

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Conducting a systematic review of prognosis studies

1. Formulate review question (PICOTS)
2. Searching for studies
3. Screening and Selection of articles -> not different from other reviews
4. Extraction of data
5. Risk of Bias assessments
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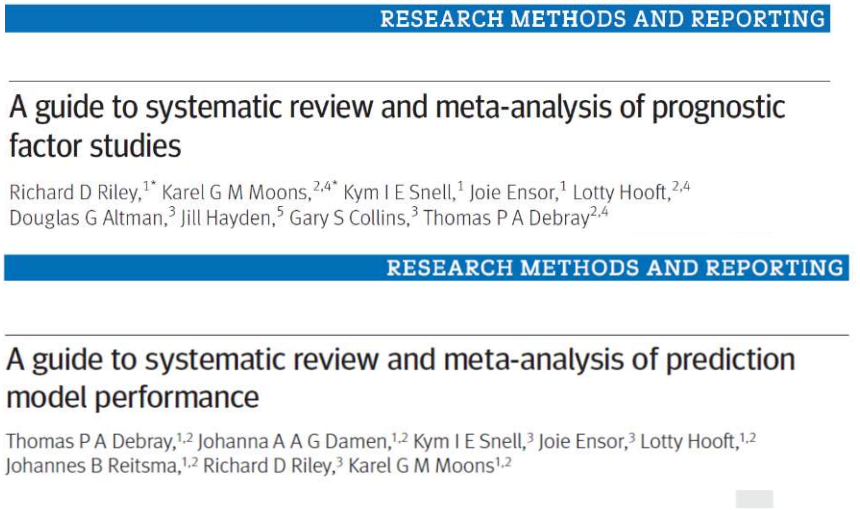
7. Interpretation and conclusions



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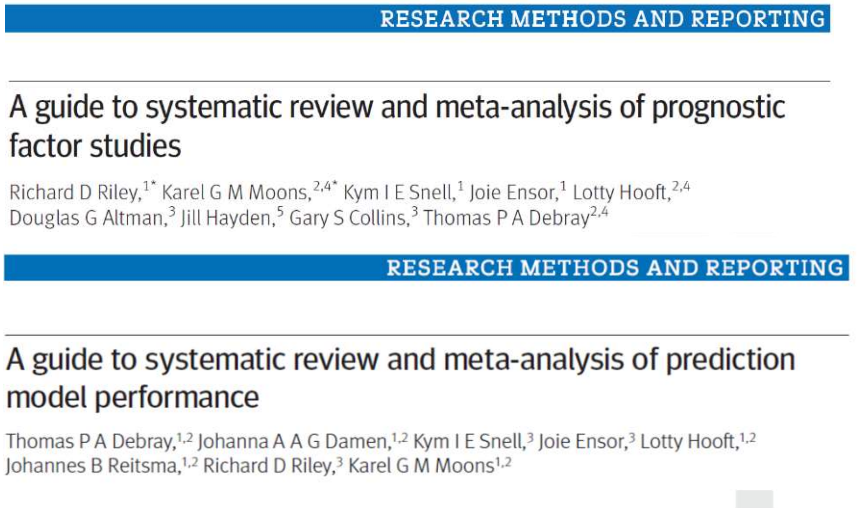

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CHARMS

- Extraction of characteristics/data of included studies + Critical appraisal
  - **CHARMS** – Table 2
  - 11 domains + signaling items

Critical Appraisal and Data Extraction for Systematic Reviews of Prediction Modelling Studies: The CHARMS Checklist

Karel G. M. Moons[1¶*], Joris A. H. de Groot[1¶], Walter Bouwmeester[1], Yvonne Vergouwe[1], Susan Mallett[2], Douglas G. Altman[3], Johannes B. Reitsma[1], Gary S. Collins[3]

- Has been adapted for prognostic factors as well:

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Data Extraction Key issues CHARMS checklist

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Domain	Key items	Reported on page #
SOURCE OF DATA	Source of data (e.g., cohort, case-control, randomized trial participants, or registry data)	
PARTICIPANTS	Participant eligibility and recruitment method (e.g., consecutive participants, location, number of centers, setting, inclusion and exclusion criteria)	
	Participant description	
	Details of treatments received, if relevant	
	Study dates	
OUTCOME(S) TO BE PREDICTED	Definition and method for measurement of outcome	
	Was the same outcome definition (and method for measurement) used in all patients?	
	Type of outcome (e.g., single or combined endpoints)	
	Was the outcome assessed without knowledge of the candidate predictors (i.e., blinded)?	
	Were candidate predictors part of the outcome (e.g., in panel or consensus diagnosis)?	
	Time of outcome occurrence or summary of duration of follow-up	
CANDIDATE PREDICTORS (OR INDEX TESTS)	Number and type of predictors (e.g., demographics, patient history, physical examination, additional testing, disease characteristics)	
	Definition and method for measurement of candidate predictors	
	Timing of predictor measurement (e.g., at patient presentation, at diagnosis, at treatment initiation)	
	Were predictors assessed blinded for outcome, and for each other (if relevant)?	
	Handling of predictors in the modelling (e.g., continuous, linear, non-linear transformations or categorised)	
SAMPLE SIZE	Number of participants and number of outcomes/events	
	Number of outcomes/events in relation to the number of candidate predictors (Events Per Variable)	
MISSING DATA	Number of participants with any missing value (include predictors and outcomes)	
	Number of participants with missing data for each predictor	
	Handling of missing data (e.g., complete-case analysis, imputation, or other methods)	

MODEL DEVELOPMENT	Modelling method (e.g., logistic, survival, neural network, or machine learning techniques)	
	Modelling assumptions satisfied	
	Method for selection of predictors **for inclusion** in multivariable modelling (e.g., all candidate predictors, pre-selection based on unadjusted association with the outcome)	
	Method for selection of predictors **during multivariable modelling** (e.g., full model approach, backward or forward selection) and criteria used (e.g., p-value, Akaike Information Criterion)	
	Shrinkage of predictor weights or regression coefficients (e.g., no shrinkage, uniform shrinkage, penalized estimation)	
MODEL PERFORMANCE	Calibration (calibration plot, calibration slope, Hosmer-Lemeshow test) and Discrimination (C-statistic, D-statistic, log-rank) measures with confidence intervals	
	Classification measures (e.g., sensitivity, specificity, predictive values, net reclassification improvement) and whether a-priori cut points were used	
MODEL EVALUATION	Method used for testing model performance: development dataset only (random split of data, resampling methods e.g. bootstrap or cross-validation, none) or separate external validation (e.g. temporal, geographical, different setting, different investigators)	
	In case of poor validation, whether model was adjusted or updated (e.g., intercept recalibrated, predictor effects adjusted, or new predictors added)	
RESULTS	Final and other multivariable models (e.g., basic, extended, simplified) presented, including predictor weights or regression coefficients, intercept, baseline survival, model performance measures (with standard errors or confidence intervals)	
	Any alternative presentation of the final prediction models, e.g., sum score, nomogram, score chart, predictions for specific risk subgroups with performance	
	Comparison of the distribution of predictors (including missing data) for development and validation datasets	
INTERPRETATION AND DISCUSSION	Interpretation of presented models (confirmatory, i.e., model useful for practice versus exploratory, i.e., more research needed)	
	Comparison with other studies, discussion of generalizability, strengths and limitations.	

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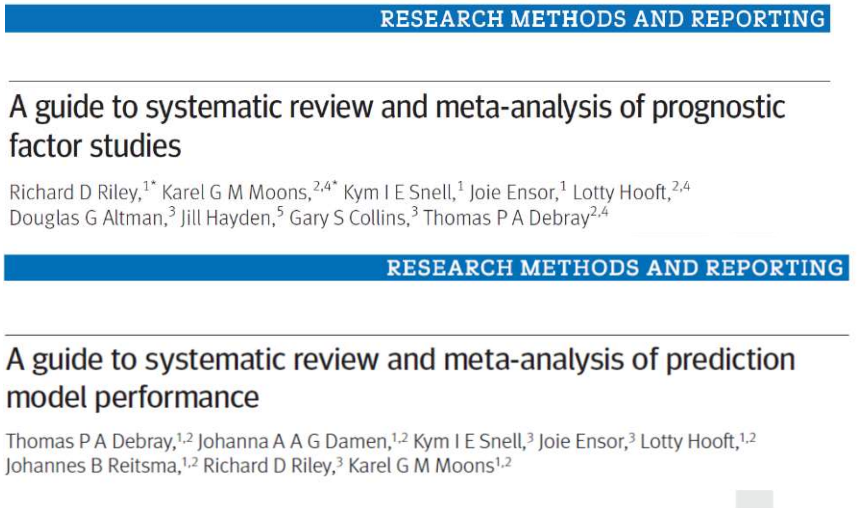

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Risk of Bias tools

- Overall prognosis studies
  - RoB-OPS – in preparation
- Prognostic factor/predictor finding studies
  - QUIPS – J Haydn, Ann Int Med 2006 + 2013
  - ROB-PF under development
- Prognostic (prediction) model studies (development and validation)
  - PROBAST+AI – Moons et al. BMJ 2025

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RESEARCH AND REPORTING METHODS | Annals of Internal Medicine

Assessing Bias in Studies of Prognostic Factors

Jill A. Hayden, DC, PhD; Danielle A. van der Windt, PhD; Jennifer L. Cartwright, MSc; Pierre Côté, DC, PhD; and Claire Bombardier, MD

Six Opportunities for Bias

1. Study participation
2. Study attrition
3. Prognostic factor measurement
4. Outcome measurement
5. Covariate measurement & accounting
6. Analysis & presentation

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Annals of Internal Medicine RESEARCH AND REPORTING METHODS

PROBAST: A Tool to Assess Risk of Bias and Applicability of Prediction Model Studies: Explanation and Elaboration

Karel G.M. Moons, PhD*; Robert F. Wolff, MD*; Richard D. Riley, PhD; Penny F. Whiting, PhD; Marie Westwood, PhD; Gary S. Collins, PhD; Johannes B. Reitsma, MD, PhD; Jos Kleijnen, MD, PhD; and Sue Mallett, DPhil

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PROBAST+AI: an updated quality, risk of bias, and applicability assessment tool for prediction models using regression or artificial intelligence methods

Karel G M Moons,[1] Johanna A A Damen,[1,2] Tabea Kaul,[1] Lotty Hooft,[1,2] Constanza Andaur Navarro,[1] Paula Dhiman,[3] Andrew L Beam,[4] Ben Van Calster,[5,6] Leo Anthony Celi,[7,8] Spiros Denaxas,[9,10] Alastair K Denniston,[11] Marzyeh Ghassemi,[12] Georg Heinze,[13] André Pascal Kengne,[14] Lena Maier-Hein,[15,16] Xiaoxuan Liu,[11,17,18,19] Patricia Logullo,[3] Melissa D McCradden,[20] Nan Liu,[21] Lauren Oakden-Rayner,[22] Karandeep Singh,[23] Daniel S Ting,[21,24] Laure Wynants,[5,25] Bada Yang,[1,2] Johannes B Reitsma,[1] Richard D Riley,[18,19] Gary S Collins,[3] Maarten van Smeden[1]

PROBAST+AI:
4 phases and 4 domains

Step	Task	When to complete
1	Specify the intended purpose of the prediction model assessment or of the prediction model systematic review	Once per assessment or systematic review
2	Classify the type of prediction model study	Once for each prediction model of interest in each publication assessed, for each relevant outcome
3	Assess quality and applicability to the intended purpose of the prediction model for model development for the separate domains	Once for each model development for each distinct prediction model in a publication
	Assess risk of bias and applicability to the intended purpose of the prediction model for model evaluation for the separate domains	Once for each model evaluation for each distinct prediction model in a publication
4	Assess the overall quality, risk of bias, and applicability of the prediction model (study)	Once for each distinct assessment of each prediction model in a publication

Domain	
1	Participants and data sources
2	Predictors
3	Outcome
4	Analysis

PROBAST

See http://probast.org

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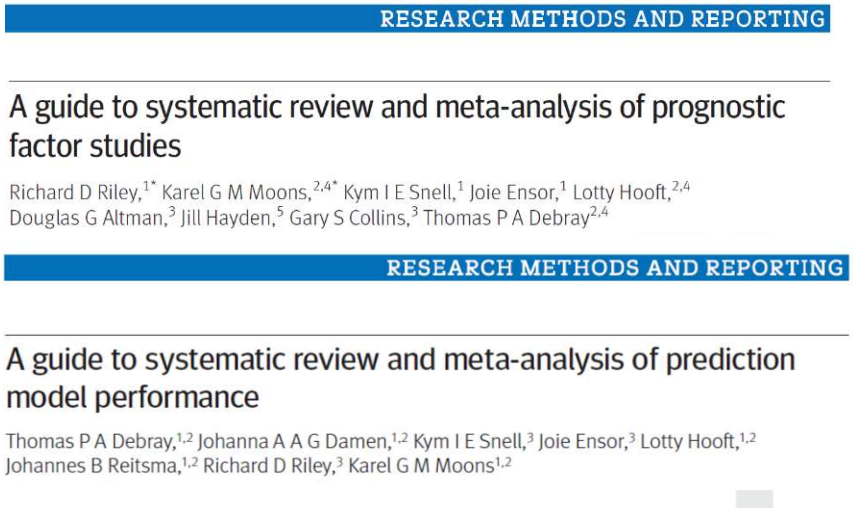
-> visit us in Utrecht!

See https://methods.cochrane.org/prognosis/workshops-and-events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Cochrane tools and guidance

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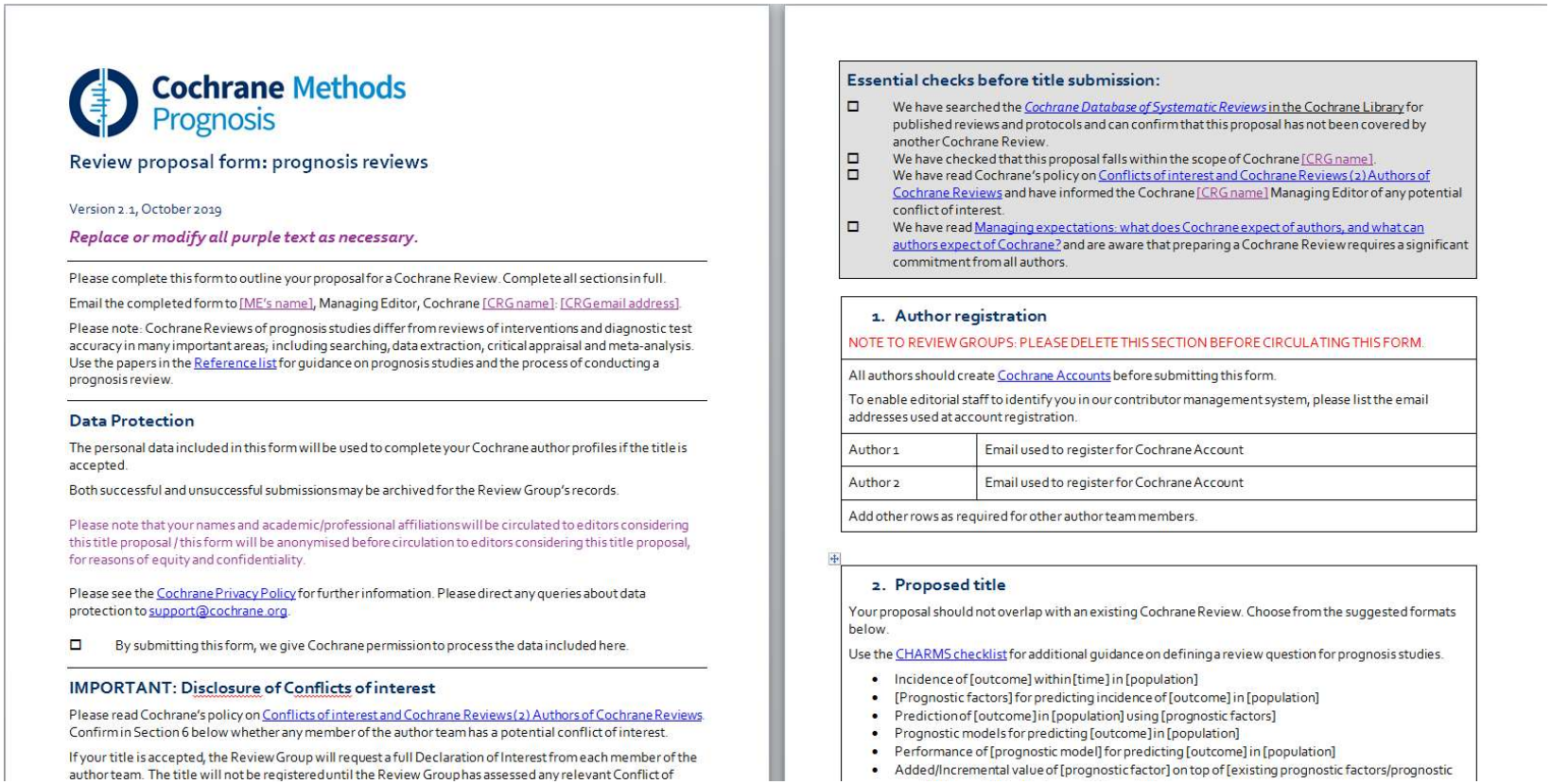
Cochrane title registration form for SRs of prognosis studies



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Review proposal form: prognosis reviews

Version 2.1, October 2019

Replace or modify all purple text as necessary.

Please complete this form to outline your proposal for a Cochrane Review. Complete all sections in full.

Email the completed form to [ME's name], Managing Editor, Cochrane [CRG name]: [CRG email address].

Please note: Cochrane Reviews of prognosis studies differ from reviews of interventions and diagnostic test accuracy in many important areas, including searching, data extraction, critical appraisal and meta-analysis. Use the papers in the Reference list for guidance on prognosis studies and the process of conducting a prognosis review.

Data Protection

The personal data included in this form will be used to complete your Cochrane author profiles if the title is accepted.

Both successful and unsuccessful submissions may be archived for the Review Group's records.

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1. Author registration

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To enable editorial staff to identify you in our contributor management system, please list the email addresses used at account registration.

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Author 2	Email used to register for Cochrane Account
Add other rows as required for other author team members.	

2. Proposed title

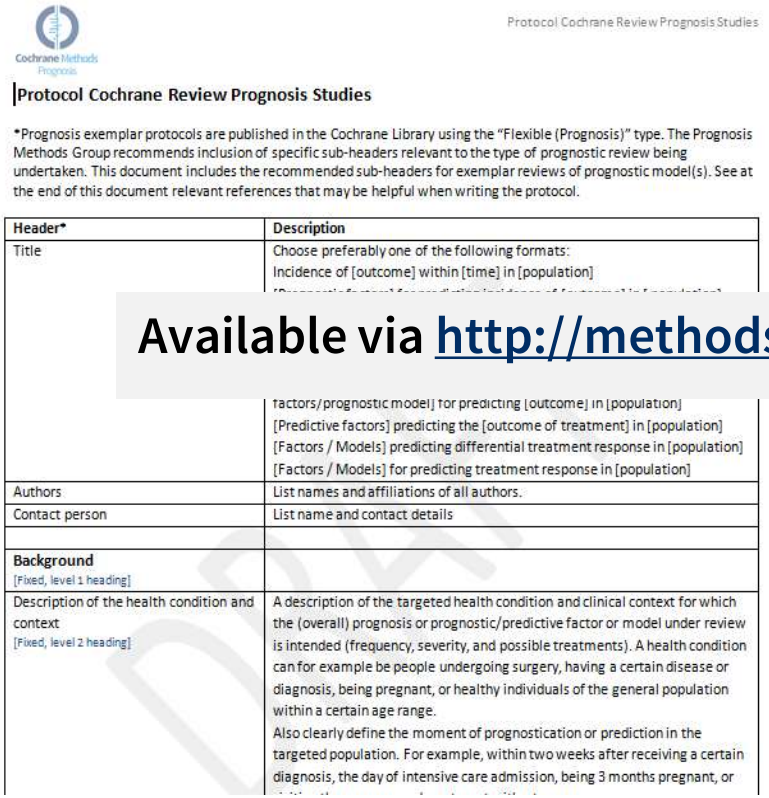
Your proposal should not overlap with an existing Cochrane Review. Choose from the suggested formats below.

Use the CHARMS checklist for additional guidance on defining a review question for prognosis studies.

- Incidence of [outcome] within [time] in [population]
- [Prognostic factors] for predicting incidence of [outcome] in [population]
- Prediction of [outcome] in [population] using [prognostic factors]
- Prognostic models for predicting [outcome] in [population]
- Performance of [prognostic model] for predicting [outcome] in [population]
- Added/Incremental value of [prognostic factor] on top of [existing prognostic factors/prognostic

Cochrane Methods Prognosis

Cochrane Protocol & Review Template for SRs of prognosis studies (currently being updated)

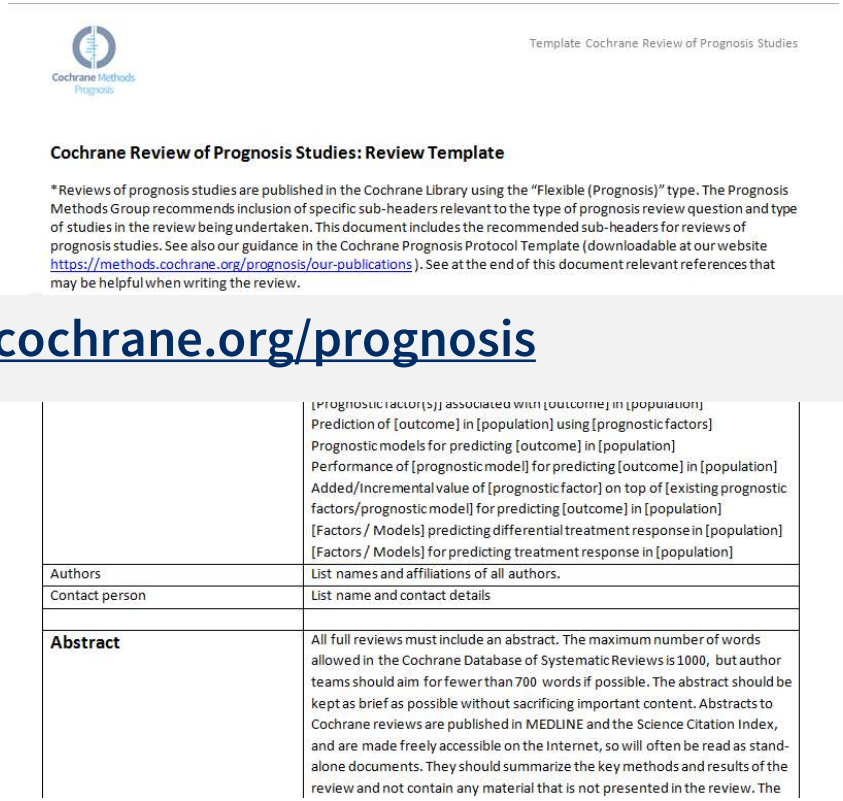


Protocol Cochrane Review Prognosis Studies

Protocol Cochrane Review Prognosis Studies

*Prognosis exemplar protocols are published in the Cochrane Library using the "Flexible (Prognosis)" type. The Prognosis Methods Group recommends inclusion of specific sub-headers relevant to the type of prognostic review being undertaken. This document includes the recommended sub-headers for exemplar reviews of prognostic model(s). See at the end of this document relevant references that may be helpful when writing the protocol.

Header*	Description
Title	Choose preferably one of the following formats: Incidence of [outcome] within [time] in [population] [Prognostic factors] for predicting [incidence of outcome] in [population] [Prognostic factor(s)] associated with [outcome] in [population] Prediction of [outcome] in [population] using [prognostic factors] Prognostic models for predicting [outcome] in [population] Performance of [prognostic model] for predicting [outcome] in [population] Added/Incremental value of [prognostic factor] on top of [existing prognostic factors/prognostic model] for predicting [outcome] in [population] [Predictive factors] predicting the [outcome of treatment] in [population] [Factors / Models] predicting differential treatment response in [population] [Factors / Models] for predicting treatment response in [population]
Authors	List names and affiliations of all authors.
Contact person	List name and contact details
Background [Fixed, level 1 heading]	
Description of the health condition and context [Fixed, level 2 heading]	A description of the targeted health condition and clinical context for which the (overall) prognosis or prognostic/predictive factor or model under review is intended (frequency, severity, and possible treatments). A health condition can for example be people undergoing surgery, having a certain disease or diagnosis, being pregnant, or healthy individuals of the general population within a certain age range. Also clearly define the moment of prognostication or prediction in the targeted population. For example, within two weeks after receiving a certain diagnosis, the day of intensive care admission, being 3 months pregnant, or



Template Cochrane Review of Prognosis Studies

Cochrane Review of Prognosis Studies: Review Template

*Reviews of prognosis studies are published in the Cochrane Library using the "Flexible (Prognosis)" type. The Prognosis Methods Group recommends inclusion of specific sub-headers relevant to the type of prognosis review question and type of studies in the review being undertaken. This document includes the recommended sub-headers for reviews of prognosis studies. See also our guidance in the Cochrane Prognosis Protocol Template (downloadable at our website https://methods.cochrane.org/prognosis/our-publications). See at the end of this document relevant references that may be helpful when writing the review.

	[Prognostic factor(s)] associated with [outcome] in [population] Prediction of [outcome] in [population] using [prognostic factors] Prognostic models for predicting [outcome] in [population] Performance of [prognostic model] for predicting [outcome] in [population] Added/Incremental value of [prognostic factor] on top of [existing prognostic factors/prognostic model] for predicting [outcome] in [population] [Factors / Models] predicting differential treatment response in [population] [Factors / Models] for predicting treatment response in [population]
Authors	List names and affiliations of all authors.
Contact person	List name and contact details
Abstract	All full reviews must include an abstract. The maximum number of words allowed in the Cochrane Database of Systematic Reviews is 1000, but author teams should aim for fewer than 700 words if possible. The abstract should be kept as brief as possible without sacrificing important content. Abstracts to Cochrane reviews are published in MEDLINE and the Science Citation Index, and are made freely accessible on the Internet, so will often be read as stand-alone documents. They should summarize the key methods and results of the review and not contain any material that is not presented in the review. The

Available via http://methods.cochrane.org/prognosis

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Part 3: Special topics

Published prognosis reviews (N=21)

Overall Prognosis reviews:

- Overall prognosis of preschool autism spectrum disorder diagnoses (Full review) (Brignell et al. 2022)
- Prognosis of adults and children following a first unprovoked seizure (Full review) (Neligan et al. 2023)

Prognostic Factor reviews:

- Protease activity as a prognostic factor for wound healing in venous leg ulcers (Full review) (Westby et al. 2018)
- Development of type 2 diabetes mellitus in people with intermediate hyperglycaemia (Full review) (Richter et al. 2018)
- Individual recovery expectations and prognosis of outcomes in non-specific low back pain (Full review) (Hayden et al. 2019)
- Interim PET for prognosis in adults with Hodgkin lymphoma: a prognostic factor exemplar review (Full review) (Aldin et al. 2020)
- Mammographic density, endocrine therapy, and breast cancer risk: a prognostic and predictive biomarker review (Full review) (Atakpa et al. 2021)
- Prognostic value of test(s) for O6-methylguanine-DNA methyltransferase (MGMT) promotermethylation for predicting overall survival in people with glioblastoma treated with temozolomide (Full review) (McAleenan et al. 2021)
- Anticholinergic burden for prediction of dementia or cognitive decline in older adults with no known cognitive syndrome (Full review) (Taylor-Rowan et al. 2021)
- Anticholinergic burden for prediction of cognitive decline or neuropsychiatric symptoms in older adults with mild cognitive impairment or dementia (Full review) (Taylor-Rowan et al. 2022)
- Impact of residual disease as a prognostic factor for survival in women with advanced epithelial ovarian cancer after primary surgery (Full review) (Bryant et al. 2022)
- Obesity as an independent risk factor for COVID-19 severity and mortality (Full review) (Najafabadi et al. 2023, rapid review)
- Prognostic factors for the development and progression of proliferative diabetic retinopathy in people with diabetic retinopathy (Full review) (Perais et al, 2023)

Published prognosis reviews (N=21)

- Sex and gender for predicting patient relevant outcomes in kidney transplantation (Full review) (Jayanti et al. 2024)
- Diabetes as a risk factor for tuberculosis disease (Full review) (Franco et al. 2024)
- Undernutrition as a risk factor for tuberculosis disease (Full review) (Franco et al. 2024)

Prognostic Model reviews:

- Prognostic models for chronic lymphocytic leukaemia: an exemplar systematic review and meta-analysis (Full review) (Kreuzberger et al. 2020)
- The added value of different biomarkers to the Revised Cardiac Risk Index to predict major adverse cardiac events and mortality after noncardiac surgery (Full review) (Vernooij et al. 2021)
- Prognostic models for predicting relapse or recurrence in depression (Full review) (Moriarty et al. 2021)
- Prognostic models for predicting clinical disease progression, worsening and activity in people with multiple sclerosis (Full review) (Reeve et al. 2023)
- Multi-domain prognostic models used in middle-aged adults without known cognitive impairment for predicting subsequent dementia (Full review) (Geethadevi et al. 2023)

Ongoing prognosis reviews (N=28)

Overall Prognosis reviews:

- Prognosis of adults with idiopathic pulmonary fibrosis without treatment or without effective therapies (Protocol) (Khor et al. 2017)
- Persistence of immunoglobulin G after natural infection with SARS-CoV-2 (Protocol) (Kreuzberger et al. 2021)
- Real-world prognosis of eyes with diabetic macular oedema receiving treatment with vascular endothelial growth factor (VEGF) inhibitors (Protocol) (Bhandari et al. 2021)
- Long-term prognosis of low language proficiency in children (Protocol) (Hagen et al. 2023)
- Overall prognosis of acute and chronic musculoskeletal, widespread, and neuropathic pain in children and adolescents (Protocol) (Montgomery et al. 2023)
- Overall prognosis of index lung cancer recurrence or of second primary lung cancer in people with non-small cell lung cancer operated with complete resection (Protocol) (Laforge et al. 2024)

Prognostic Factor reviews:

- Prognostic value of the androgen receptor in addition to the established hormone receptors and HER2 status for predicting survival in women with early breast cancer (Protocol) (Lokuhetty et al. 2020)
- Sex as a prognostic factor in people with symptomatic acute pulmonary embolism (Protocol) (Lopez-Alcade et al. 2021)
- Prognostic factors predicting an unprovoked seizure recurrence in children and adults following a first unprovoked seizure (Protocol) (Adan et al. 2021)
- Gut microbial biomarkers for predicting adverse outcomes in people with chronic kidney disease (Protocol) (Cooper et al. 2022)
- Prognostic factors for return to work in breast cancer survivors (Protocol) (Tamminga et al. 2022)
- Predictive factors for BK polyomavirus infection in solid organ transplant recipients (Protocol) (Gately et al. 2022)
- Heart failure symptoms as predictors of hospital admission, readmission and all-cause mortality (Protocol) (Rizwan Ali et al. 2022)

Ongoing prognosis reviews (N=28)

- Prognostic factors for predicting progression of open angle glaucoma in adults (Protocol) (Prabhath Piyasena et al. 2022)
- Prediction of disease specific and overall survival in men with prostate cancer using the Decipher assay (Protocol) (Garegnani et al. 2023)
- Prognostic accuracy of imaging findings for predicting morbidity and mortality in patients with COVID-19 (Protocol) (Islam et al. 2023)
- Factors for predicting treatment success and severe adverse events of chimeric antigen receptor (CAR) T-cell therapy i relapsed or refractory diffuse large B-cell lymphoma (Protocol) (Hirsch et al. 2023)
- Prognostic factors for return to work following knee arthroplasty (Protocol) (Strijbos et al. 2024)
- Predictive value of homologous recombination deficiency status for survival outcomes in primary tubo-ovarian high-grade serous carcinoma (Protocol) (Zwimpfer et al. 2024)
- Molecular biomarkers for predicting complete response to preoperative chemoradiation in people with locally advanced rectal cancer (Protocol) (De Lacavalerie et al. 2024)
- Prognostic value of blood eosinophils for predicting survival and treatment outcomes in people with non-small cell lung cancer (Protocol) (Sultana et al. 2025)

Prognostic Model reviews:

- Prediction models for the risk of postoperative nausea and vomiting (Protocol) (Pace et al. 2014)
- Prognostic models for predicting the severity and mortality in people with acute pancreatitis (Protocol) (Gurusamy et al. 2018)
- Risk prediction models for familial breast cancer (Protocol) (McGarrigle et al. 2018)
- Model for end stage liver disease for prediction of mortality in people with cirrhosis (Protocol) (D'Amico et al. 2021)
- Prognostic models for radiation-induced complications after radiotherapy in head and neck cancer patients (Protocol) (Takada et al. 2021)
- Prognostic models for predicting recurrence in women with endometrial cancer (Protocol) (Wan et al. 2021)
- Prognostic models for colorectal cancer incidence and mortality in patients with inflammatory bowel disease (Protocol) (Gantzel et al. 2023)

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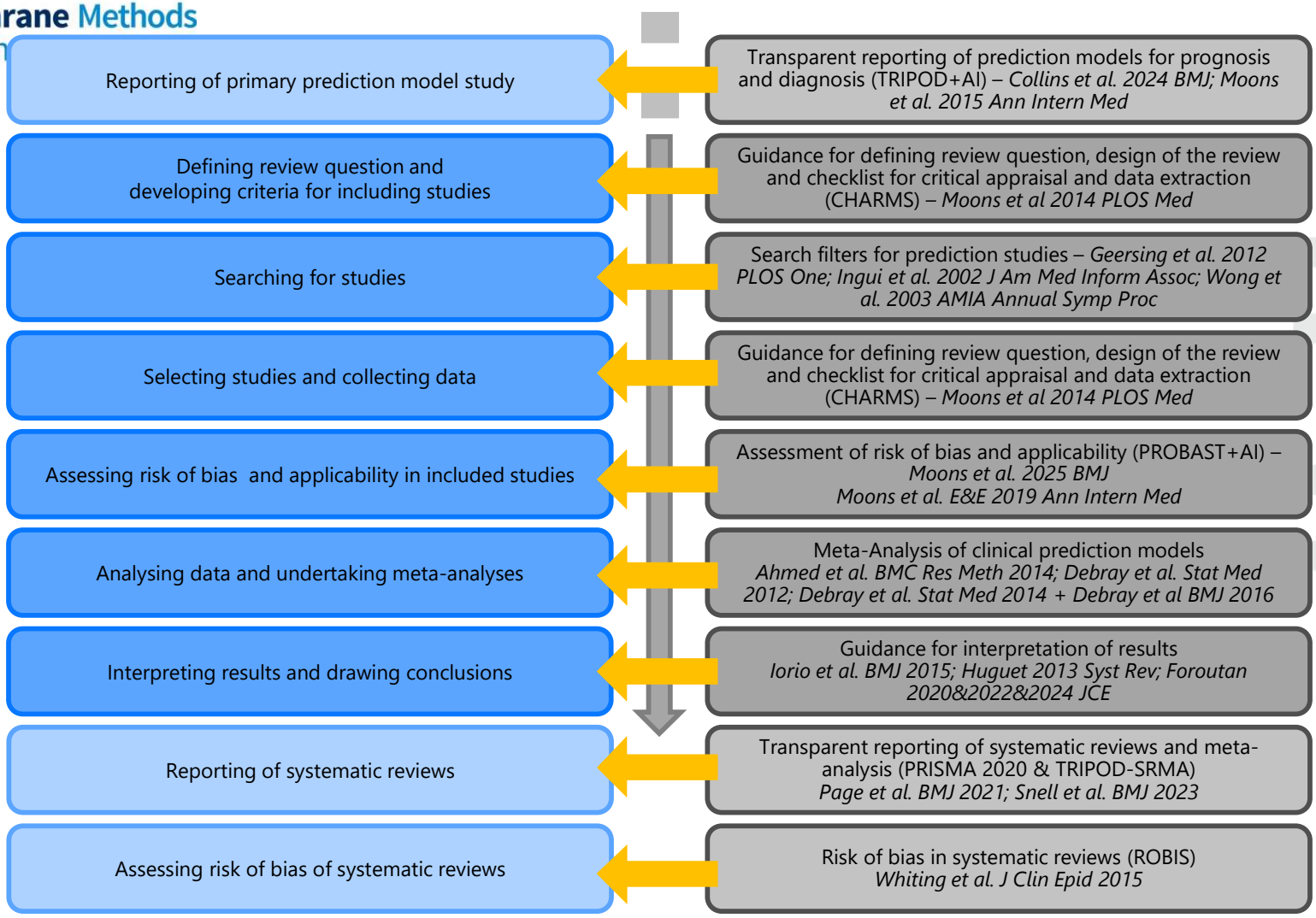

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