

# Reporting checklist for prediction model development/validation.

Based on the TRIPOD guidelines.

## Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

Upload your completed checklist as an extra file when you submit to a journal.

In your methods section, say that you used the TRIPOD reporting guidelines, and cite them as:

Collins GS, Reitsma JB, Altman DG, Moons KG. Transparent reporting of a multivariable prediction model for individual prognosis or diagnosis (TRIPOD): The TRIPOD statement.

	Reporting Item	Page Number
<b>Title</b>		
	#1 Identify the study as developing and / or validating a multivariable prediction model, the target population, and the outcome to be predicted.	2
<b>Abstract</b>		
	#2 Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	4
<b>Introduction</b>		
	#3a Explain the medical context (including whether diagnostic or prognostic) and rationale for developing or validating the multivariable prediction model, including references to existing	5

	models.	
#3b	Specify the objectives, including whether the study describes the development or validation of the model or both.	5
<b>Methods</b>		
Source of data	#4a Describe the study design or source of data (e.g., randomized trial, cohort, or registry data), separately for the development and validation data sets, if applicable.	6
Source of data	#4b Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	6, 7
Participants	#5a Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	6
Participants	#5b Describe eligibility criteria for participants.	6
Participants	#5c Give details of treatments received, if relevant	n/a, not treatment was of interest
Outcome	#6a Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	6 and supplementary material
Outcome	#6b Report any actions to blind assessment of the outcome to be predicted.	n/a, outcome is prognostic and evident: kidney failure and death
Predictors	#7a Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured	6 and supplementary material
Predictors	#7b Report any actions to blind assessment of predictors for the outcome and other predictors.	n/a, outcome is prognostic
Sample size	#8 Explain how the study size was arrived at.	7 and supplementary material

Missing data	<a href="#">#9</a>	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	7 and supplementary material
Statistical analysis methods	<a href="#">#10a</a>	If you are developing a prediction model describe how predictors were handled in the analyses.	n/a, it is a external validation
Statistical analysis methods	<a href="#">#10b</a>	If you are developing a prediction model, specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	n/a, it is a external validation
Statistical analysis methods	<a href="#">#10c</a>	If you are validating a prediction model, describe how the predictions were calculated.	6, and supplementary material
Statistical analysis methods	<a href="#">#10d</a>	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	7, 8 and supplementary material
Statistical analysis methods	<a href="#">#10e</a>	If you are validating a prediction model, describe any model updating (e.g., recalibration) arising from the validation, if done	7, 8 and supplementary material
Risk groups	<a href="#">#11</a>	Provide details on how risk groups were created, if done.	n/a, we used risk predicted, not stratified by groups
Development vs. validation	<a href="#">#12</a>	For validation, identify any differences from the development data in setting, eligibility criteria, outcome, and predictors.	6

## Results

Participants	<a href="#">#13a</a>	Describe the flow of participants through the study, including the number of participants with and without the outcome and, if applicable, a summary of the follow-up time. A diagram may be helpful.	8
Participants	<a href="#">#13b</a>	Describe the characteristics of the participants (basic demographics, clinical features, available	9

		predictors), including the number of participants with missing data for predictors and outcome.	
Participants	<a href="#"><b>#13c</b></a>	For validation, show a comparison with the development data of the distribution of important variables (demographics, predictors and outcome).	Supplementary table S8
Model development	<a href="#"><b>#14a</b></a>	If developing a model, specify the number of participants and outcome events in each analysis.	n/a, it is an external validation
Model development	<a href="#"><b>#14b</b></a>	If developing a model, report the unadjusted association, if calculated between each candidate predictor and outcome.	n/a, it is an external validation
Model specification	<a href="#"><b>#15a</b></a>	If developing a model, present the full prediction model to allow predictions for individuals (i.e., all regression coefficients, and model intercept or baseline survival at a given time point).	n/a, it is an external validation
Model specification	<a href="#"><b>#15b</b></a>	If developing a prediction model, explain how to use it.	n/a, it is an external validation
Model performance	<a href="#"><b>#16</b></a>	Report performance measures (with CIs) for the prediction model.	9-10
Model-updating	<a href="#"><b>#17</b></a>	If validating a model, report the results from any model updating, if done (i.e., model specification, model performance).	10-11

## Discussion

Limitations	<a href="#"><b>#18</b></a>	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	13
Interpretation	<a href="#"><b>#19a</b></a>	For validation, discuss the results with reference to performance in the development data, and any other validation data	12-13
Interpretation	<a href="#"><b>#19b</b></a>	Give an overall interpretation of the results, considering objectives, limitations, results from similar studies, and other relevant evidence.	14-15

Implications	<a href="#"><u>#20</u></a>	Discuss the potential clinical use of the model and implications for future research	14-15
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## Other information

Supplementary information	<a href="#"><u>#21</u></a>	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	8 and Supplementary Material
Funding	<a href="#"><u>#22</u></a>	Give the source of funding and the role of the funders for the present study.	3

### Notes:

- 5c: n/a, not treatment was of interest
- 6a: 6 and supplementary material
- 6b: n/a, outcome is prognostic and evident: kidney failure and death
- 7a: 6 and supplementary material
- 7b: n/a, outcome is prognostic
- 8: 7 and supplementary material
- 9: 7 and supplementary material
- 10a: n/a, it is a external validation
- 10b: n/a, it is a external validation
- 10c: 6, and supplementary material
- 10d: 7, 8 and supplementary material
- 10e: 7, 8 and supplementary material
- 11: n/a, we used risk predicted, not stratified by groups
- 13c: Supplementary table S8
- 14a: n/a, it is an external validation
- 14b: n/a, it is an external validation
- 15a: n/a, it is an external validation

- 15b: n/a, it is an external validation
- 21: 8 and Supplementary Material The TRIPOD checklist is distributed under the terms of the Creative Commons Attribution License CC-BY. This checklist was completed on 17. September 2024 using <https://www.goodreports.org/>, a tool made by the [EQUATOR Network](#) in collaboration with [Penelope.ai](#)