TRIPOD Checklist: Prediction Model Development

Section	Item	Checklist description	Reported on Page Number/Line Number	Reported on Section/Paragraph
Title and abstract				
Title	1	Identify the study as developing and/or validating a multivariable prediction model, the target population, and the outcome to be predicted.	Page 1/Line 3	Title/Paragraph1
Abstract	2	Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	Page 2/Line 35-62	Abstract/Paragraph2
Introduction				
Background and objectives	3a	Explain the medical context (including whether diagnostic or prognostic) and rationale for developing or validating the multivariable prediction model, including references to existing models.	Page 3/Line 70-85	Introduction/Paragraph1-2
	3b	Specify the objectives, including whether the study describes the development or validation of the model or both.	Page 3/Line 81-95	Introduction/Paragraph 2
Methods				
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, ifapplicable.	Page 2-3/Line 99-102	Methods/Paragraph1
	4b	Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	No	No
Participants	5a	Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	Page 4/Line 100-106	Methods/Paragraph1
	5b	Describe eligibility criteria for participants.	Page 4/Line 110-116	Methods/Paragraph2
	5c	Give details of treatments received, if relevant.	No	No

Outcome	6a	Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	Page 4-5/Line 129-142	Methods/Paragraph4
	6b	Report any actions to blind assessment of the outcome to be predicted.	Page 5/Line 140-147	Methods/Paragraph4
Predictors	7a	Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured.	Page 4/Line 110-116	Methods/Paragraph2
	7b	Report any actions to blind assessment of predictors for the outcome and other predictors.	Page 5/Line 140-147	Methods/Paragraph4
Sample size	8	Explain how the study size was arrived at.	Page 4-5/Line 130-147	Methods/Paragraph4

Missing data	9	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	No	No
Statistical analysis methods	10a	Describe how predictors were handled in the analyses.	Page 4-5/Line 130-142	Methods/Paragraph4
	10b	Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	Page 5/Line 142-147	Methods/Paragraph4
	10d	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	Page 5/Line 159-165	Methods/Paragraph6
Risk groups	11	Provide details on how risk groups were created, if done.	Page 4/Line 130-132	Methods/Paragraph4
Results				

Participants	13a	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.	No	No
	13b	Describe the characteristics of the participants (basic demographics, clinical features, available predictors), including the number of participants with missing data for predictors and outcome.	Page 6/Line171-174	Results/Paragraph1
Model development	14a	Specify the number of participants and outcome events in each analysis.	Page 6/Line171-174	Results/Paragraph1
	14b	If done, report the unadjusted association between each candidate predictor and outcome.	Page 7/Line204-210	Results/Paragraph4
Model specification	15a	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).	Page 7/Line211-226	Results/Paragraph4
	15b	Explain how to the use the prediction model.	Page 7/Line208-226	Results/Paragraph4
Model performance	16	Report performance measures (with CIs) for the prediction model.	Page 7-8/ Line228-244	Results/Paragraph5-6
Discussion				
Limitations	18	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	Page 11-12/ Line371-378	Discussion/Paragraph7
Interpretation	19b	Give an overall interpretation of the results, considering objectives, limitations, and results from similar studies, and other relevant evidence.	Page 11-12/ Line371-375	Discussion/Paragraph7
Implications	20	Discuss the potential clinical use of the model and implications for future research.	Page 11/ Line357-370	Discussion/Paragraph6

Other information					
Supplementary information	21	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	No	No
Funding	22	Give the source of funding and the role of the funders for the present study.	Page 12/ Line392-396	Funding/Paragraph1

Updated on June 1, 2020