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.	Page1/line1-3	Title/Para1
Abstract	2	Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	Page3-4/line30-59	Abstract/Para1-4
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.	Page5-6/line63-99	Background/Para1-3
	3b	Specify the objectives, including whether the study describes the development or validation of the model or both.	Page5/line99-102	Background/Para3
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.	Page7/line105-112	Methods/Para1
	4b	Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	Page7/line121	Methods/Para2
Participants	5a	Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	Page7/line119-122	Methods/Para2
	5b	Describe eligibility criteria for participants.	Page8/line123-125	Methods/Para2
	5c	Give details of treatments received, if relevant.	Page8/line129-130	Methods/Para2
Outcome	6a	Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	Page8/line130-132	Methods/Para2
	6b	Report any actions to blind assessment of the outcome to be predicted.	Page8/line132-133	Methods/Para2
Predictors	7a	Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured.	Page8-9/line133-145	Methods/Para2
	7b	Report any actions to blind assessment of predictors for the outcome and other predictors.	Page9/line149-151	Methods/Para3
Sample size	8	Explain how the study size was arrived at.	Page7-8/line119-127	Methods/Para2

Missing data	9	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	Page9/line153-154	Methods/Paral3
Statistical analysis methods	10a	Describe how predictors were handled in the analyses.	Page9/line149-157	Methods/Paral3
	10b	Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	Page9/line157-159	Methods/Paral3
	10d	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	Page9/line149-159	Methods/Paral3
Risk groups	11	Provide details on how risk groups were created, if done.	Page9-10/line159-168	Methods/Paral3
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.	Pag10/line176-181	Results/Paral1
	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.	Page10-11/line182-194	Results/Paral2
Model development	14a	Specify the number of participants and outcome events in each analysis.	Page11/line195-204	Results/Paral3-4
	14b	If done, report the unadjusted association between each candidate predictor and outcome.	Page11-12/line206-210	Results/Paral5
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).	Page12/line210-214	Results/Paral5
	15b	Explain how to the use the prediction model.	Page12-13/line224-228	Results/Paral7
Model performance	16	Report performance measures (with CIs) for the prediction model.	Page13/line229-246	Results/Paral8-11
Discussion				
Limitations	18	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	Page16-17/line313-323	Discussion/Paral5
Interpretation	19b	Give an overall interpretation of the results, considering objectives, limitations, and results from similar studies, and other relevant evidence.	Page13-16/line248-312	Discussion/Paral1-4
Implications	20	Discuss the potential clinical use of the model and implications for future research.	Page14/line261-262	Discussion/Paral2
Other information				
Supplementary information	21	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	Page18/line346-352	Footnote/Paral3
Funding	22	Give the source of funding and the role of the funders for the present study.	Page1/line17	Title/Paral3

Article information: http://dx.doi.org/10.21037/tcr-20-2588
*As the checklist was provided upon initial submission, the page number/line number reported may be changed due to copyediting and may not be referable in the published version. In this case, the section/paragraph may be used as an alternative reference.