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.	Line 2-4, Page 1	Title page
Abstract	2	Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions.	Line 30-52, Page 2	Abstract
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.	Line 59-78, Page 3	Introduction
	3b	Specify the objectives, including whether the study describes the development or validation of the model or both.	Line 36-40, Page 2	Abstract
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.	Line 84-88, Page 3-4	Methods
	4b	Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up.	Line 85-86, Page 3	Methods
Participants	5a	Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres.	Line 92-97, Page 4	Methods
	5b	Describe eligibility criteria for participants.	Line 85-88, Page 3-4;	Methods
	5c	Give details of treatments received, if relevant.	Line 86-87, Page	Methods;Supplementa
Outcome	6a	Clearly define the outcome that is predicted by the prediction model, including how and when assessed.	Line 100-105, Page 4	Methods
	6b	Report any actions to blind assessment of the outcome to be predicted.	Line 106-110, Page 4	Methods
Predictors	7a	Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured.	Line 106-110, Page 4	Methods
	7b	Report any actions to blind assessment of predictors for the outcome and other predictors.	Line 106-110, Page 4	Methods
Sample size	8	Explain how the study size was arrived at.	Line 85-88, Page 3-4	Methods

Missing data	9	Describe how missing data were handled (e.g., complete-case analysis, single imputation, multiple imputation) with details of any imputation method.	Line 88, Page 4; Figure 1	Methods
Statistical analysis methods	10a	Describe how predictors were handled in the analyses.	Line 125-133, Page 5	Results
	10b	Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation.	Line 101-103, Page 4	Statistical analysis
	10d	Specify all measures used to assess model performance and, if relevant, to compare multiple models.	Line 106-108, Page 4	Statistical analysis
Risk groups	11	Provide details on how risk groups were created, if done.	Line 106-108, Page 4	Statistical analysis
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.	Figure 1	Methods
	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.	Table 1;Line 118-123, Page 5	Results
Model development	14a	Specify the number of participants and outcome events in each analysis.	Line 125-133, Page 5	Results
	14b	If done, report the unadjusted association between each candidate predictor and outcome.	Line 125-133, Page 5	Results
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).	Line 135-150, Page 5-6	Results
	15b	Explain how to the use the prediction model.	Line 152-157, Page 6	Results
Model performance	16	Report performance measures (with CIs) for the prediction model.	Line 158-167, Page 6	Results
Discussion				
Limitations	18	Discuss any limitations of the study (such as nonrepresentative sample, few events per predictor, missing data).	Line 222-224, Page 8	Discussion
Interpretation	19b	Give an overall interpretation of the results, considering objectives, limitations, and results from similar studies, and other relevant evidence.	Line 175-221, Page 7-8	Discussion
Implications	20	Discuss the potential clinical use of the model and implications for future research.	Line 184-186, Page 7	Discussion
Other information				
Supplementary information	21	Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets.	Line 121, Page 5 Supplemental Table 1	Results
Funding	22	Give the source of funding and the role of the funders for the present study.	Line 233-238, Page 9	Other information

Article Information: http://dx.doi.org/10.21037/tlcr-20-997
*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.