| 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, Lines 3-4                   | Title                        |
| Abstract                             | 2    | Provide a summary of objectives, study design, setting, participants, sample size, predictors, outcome, statistical analysis, results, and conclusions. | Pages 6-8, Lines 78-111             | 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. | Pages 9-10, Lines 125-152           | Paragraph 1 and 2            |
| 3b                                   |      | Specify the objectives, including whether the study describes the development or validation of the model or both. | Pages 10-11, Lines 153-160          | 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, if applicable. | Page 11, Line 164                   | Paragraph 1                  |
| 4b                                   |      | Specify the key study dates, including start of accrual; end of accrual; and, if applicable, end of follow-up. | Page 11, Line 165-166               | Paragraph 1                  |
| Participants                         | 5a   | Specify key elements of the study setting (e.g., primary care, secondary care, general population) including number and location of centres. | Page 11, Line 165; Page 14, Lines 205-206 | Paragraph 3                  |
| 5b                                   |      | Describe eligibility criteria for participants.                                        | Page 12-13, Lines 2                  | Paragraph 2                  |
| 5c                                   |      | Give details of treatments received, if relevant.                                      | Pages 14-15, Lines 2                 | Paragraph 4                  |
| Outcome                              | 6a   | Clearly define the outcome that is predicted by the prediction model, including how and when assessed. | Page 13, Lines 194-196              | Paragraph 2                  |
| 6b                                   |      | Report any actions to blind assessment of the outcome to be predicted.                   | Page 13, Lines 261-262              | Paragraph 7                  |
| Predictors                           | 7a   | Clearly define all predictors used in developing or validating the multivariable prediction model, including how and when they were measured. | Page 16, Lines 238-251              | Paragraph 5                  |
| 7b                                   |      | Report any actions to blind assessment of predictors for the outcome and other predictors. | Page 13, Lines 261-262              | Paragraph 7                  |
| Sample size                          | 8    | Explain how the study size was arrived at.                                              | Pages 11-12, Lines 2                 | Paragraph 1                  |
| Section                          | Page Range | Paragraphs |
|---------------------------------|------------|------------|
| Missing data                    | Pages 11-12, Lines 163-173 | Paragraph 1 |
| Statistical analysis methods    | Pages 19-20, Lines Paragraph 10 | Paragraph 10 |
| 10a Describe how predictors were handled in the analyses. | Pages 17-19, Lines Paragraphs 7-8 | Paragraphs 7-8 |
| 10b Specify type of model, all model-building procedures (including any predictor selection), and method for internal validation. | Pages 17-19, Lines Paragraphs 7-9 | Paragraphs 7-9 |
| 10d Specify all measures used to assess model performance and, if relevant, to compare multiple models. | Pages 18-19, Lines Paragraphs 8 | Paragraphs 8 |
| Risk groups                     | Pages 23, Lines 359-64, Paragraph 4 | Paragraph 4 |
| 11 Provide details on how risk groups were created, if done. | Page 25, Lines 368-391 Paragraph 6 | Paragraph 6 |
| Results                          | Page 25, Lines 386-396 Paragraph 6 | Paragraph 6 |
| 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. | Page 26, Lines 399-402; Paragraph 7 | Paragraph 7 |
| Participants                     | Page 26-29, Lines Paragraphs 7-9 | Paragraphs 7-9 |
| 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. | | |
| Model development                | | |
| 14a Specify the number of participants and outcome events in each analysis. | | |
| 14b If done, report the unadjusted association between each candidate predictor and outcome. | | |
| 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). | | |
| 15b Explain how to the use the prediction model. | | |
| Model performance                | | |
| 16 Report performance measures (with CIs) for the prediction model. | | |
| Discussion                       | | |
| Limitations                      | Page 38, Lines 592-601 Paragraph 7 | Paragraph 7 |
| Interpretation                   | Pages 31-37, Lines Paragraphs 1-6 | Paragraphs 1-6 |
| Implications                     | Pages 36-37, Lines Paragraph 5 | Paragraph 5 |
| Other information                | | |
| Supplementary information        | | |
| 21 Provide information about the availability of supplementary resources, such as study protocol, Web calculator, and data sets. | | |
| Funding                          | Page 39, Lines 604-613 Acknowledgement | Acknowledgement |
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*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.