	Number	1	2	3	4	5	6	7		9	10	11	12	13	14	15
Author, Year 1.1. Were appropriate data	Criterion	Ying P. Tabak, 2009	Ying P. Tabak, 2013	Peter K. Lindensuer, 2013	Cassandra M. Batzlaff, 2014	Matthew Bonomo, 2022	Shi Chen, 2023	M.J. WILDMAN, 2009	Alex C. Asimwe, 2011	John Steer, 2012	C Echevarria, 2017	Tom Hartley, 2021	Prachys Mekanimitdee, 2021	SUSANA GARCIA-GUTIERREZ, 2014	José M Quintana, 2014	3. M. Quintana, 2014 (1)
1.1. Were appropriate data sources used, e.g., cohort, RCT, or nested case— control study data?	No/probably no: If a nonnested case-control design has been used.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.2. Were all inclusions and exclusions of participants appropriate?	No/probably no: If participants are included who would already have been identified as having the outcome and so are no longer participants at suspicion of disease (diagnosts studies) or at risk of developing outcome (propositis studies), or if attend the participants of the studies of the production model for the intended target population.	Probably Yes	Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably No	Probably No
	High risk of bias: If the answer to any of the															
Participants-Risk of bias	there is a potential for bias, except if defined at low risk of bias above	Low Roß	Low Roß	Low RoB	Low RoB	Low RoB	Low RoB	Low Roß	High RoB	Low RoB	Low RoB	Low Ro8	High RoB	Low RoB	High RoB	High Roß
Participents-Applicability	High concern for applicability: Included participants and clinical setting were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
2.1. Were predictors defined and assessed in a similar way for all participants?	below bubby no. If different definitions were used for the same produce of indirectors regime subjective interpretation were assessed by addressly experienced assesson. No information if there is no information on how predictions were determed but of being a single-centre but of desired, programmed or assessed. (If the study is single-centre but of desired, procedy the season of the season o	No Information	No Information	Probably No	Protebly Yes	Probably Yes	No Information	No Information	Probably Yes	Yes	Yes	Probably Yes	Probably Yes	No Information	No Information	No Information
2.2. Were predictor assessments made without knowledge of outcome data?	No/probably no: If it is clear that outcome information was used when assessing predictors.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.3. Are all predictors available at the time the model is intended to be used?	No/probably no: Predictors would not be available at the time the model is intended to be used for prediction.	Yes	Yes	Yes	Yes	Probably Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probably Yes	Yes
Predictors-Risk of bias	Unclear risk of bias: If relevant information is missing for some of the signaling questions and none of the signaling questions is judged to put the domain at high risk of bias.	High RoB	High RoB	High RoB	Low Ro8	Low RoB	High RoB	High Roll	Low Roll	Low RoB	Low Roll	Low RoB	Low Roll	High RoB	High RoB	High Roß
Predictors-Applicability	High concern for applicability: Definition, assessment, or timing of predictors were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
3.1. Was the outcome determined appropriately?	No/probably no: If a dearly suboptimal method has been used that causes unacceptable error in determining outcome status in participants.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probably No	Yes	Yes
3.2. Was a prespecified or standard outcome	No/probably no: If the outcome definition was not standard and not prespecified	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	No Information	Probably Yes	Probably No
3.3. Were predictors excluded from the outcome definition	No/probably no: If >1 of the predictors forms part of the outcome definition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Protably No	Yes	Yes
defined and determined in a similar way for all participants?	No/probably no: If outcomes were clearly defined and determined in a different way for some participants.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probably No	Yes	Yes
3.5. Was the outcome determined without knowledge of predictor information?	No/probably no: If it is clear that predictor information was used when determining the outcome status.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Probably No	Yes	Yes
3.6. Was the time interval between predictor assessment and outcome determination appropriate?	No/probably no: If the time interval between predictor assessment and outcome determination is too short or too long to enable the correct type and representative number of relevant outcomes to be recorded.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Protebly Yes	Yes	Probably Yes	Probably Yes
Outcome-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	Low Roß	Low Roß	Low RoB	Low RoB	Low RoB	Low Ro8	Low RoB	Low RoB	Low RoB	Low Roll	Low Ro8	Low RoB	High RoB	Low RoB	High Roß
Outcome-Applicability	High concern for applicability: Choice of outcome definition, timing, and method of outcome determination defines another outcome as intended by the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
4.1. Were there a reasonable number of participants with the outcome?	No/probably no: For model development studies, if the number of participants with the outcome relative to the number of candidate predictor parameters is <10 (EPV <10).	Yes	Yes	Probably No	Yes	No	No	Yes	Yes	No	Yes	No	No	No	No	No
4.2. Were continuous and categorical predictors handled appropriately?	No/probably no: If categorical predictor group definitions do not use a prespecified method.	Probably No	No	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably No
4.3. Were all enrolled participants included in the analysis?	No/probably no: If some or a subgroup of participants are inappropriately excluded from the analysis.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Yes	Probably Yes	Probably No	Probably No	Probably Yes	Probably Yes
4.4. Were participants with missing data handled appropriately?	No/probably no: If participants with missing data are omitted from the analysis, or if the method of handling missing data is clearly flawed, e.g., missing indicator method or inappropriate use of last value carried forward, or if the study had no explicit mention of methods to handle missing data.	No Information	Probably Yes	No Information	No Information	Probably Yes	Probably No	Probably Yes	No Information	Yes	Yes	Yes	Probably Yes	No Information	No Information	Yes
4.5. Was selection of predictors based on univariable analysis avoided?	No/probably no: If the predictors are selected on the basis of univariable analysis prior to multivariable modeling.	Yes	No	Yes	No	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No
4.6. Were complexities in the data accounted for appropriately?	No/probably no: If complexities in the data that could affect model performance are ignored	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.7. Were relevant model performance measures evaluated appropriately?	No/probably no: If both calibration and discrimination are not evaluated	Probably No	Probably Yes	Probably No	Yes	Yes	Yes	Yes	Probably Yes	Probably Yes	Yes	Yes	Yes	Probably Yes	Probably Yes	Probably Yes
4.8. Were model overfitting, underfitting, and optimism in model performance accounted for?	No/probably no: If no internal validation has been performed, or if internal validation consists only of a single random split-sample of participant data, or if the boostrapping or cross- validation did not include all model development procedures including any variable selection.	Yes	Probably No	Probably No	Yes	Yes	Probably No	Yes	Probably No	Probably Yes	Probably Yes	Probably No	Yes	Probably Yes	Probably No	Probably No
4.9. Do predictors and their assigned weights in the final model correspond to the results from the reported multivariable analysis?	No/probably no: If the predictive factors and regression coefficients in the final model do not match or are incomplete with the results reported in the factor analysis.	Probably Yes	Yes	Probably No	Yes	No Information	Probably Yes	Yes	Yes	Yes	Yes	Probably Yes	Probably Yes	Yes	Yes	Yes
Analysis-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	Low Roß	High RoB	High RoB	Low Roll	High RoB	High Roll	High RoB	High RoB	High Roß
Overall Risk of bias	High risk of bias: If ≥1 domain is judged to be at high risk of bias. Unclear risk of bias: If an unclear risk of bias was noted in ≥1 domain and it was low risk for	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	Low Roll	High RoB	High RoB	High RoB	High RoB	High RoB
Overall Applicability	all otherdomains. High concerns for applicability: If high concerns for applicability for £1 domain, the prediction model evaluation is judged to have high concerns for applicability. Undear concerns for applicability. Undear concerns for applicability was noted in £1 concern for applicability was noted in £2 domain and it was judged to have low concerns for applicability for all other concerns for applicability for all other	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern

Author, Year	Number	16 J. M. Quintana, 2014 (2)	17 J. M. Quintana, 2014 (3)	18 J. M. Quintana, 2014 (4)	19 1 M Ovintana 2014 (6)	20 J. M. Quintana, 2014 (6)	21 Pedro Almagro , MD, 201	22 Cristóbal Esteban, 201	23 Juan Luis García-Rivero, 201	24 Carry Alemanda, 202	25 Vine Wage 2014	26 Yukiyo Sakamoto, 2017	27 Alabim Shinashin 2011	28 Jiang*Chen Peng, 2022	29 A Mahan 2001	30 A. Mohan, 2007
1.1. Were appropriate data sources used, e.g., cohort, RCT, or nested case-control study data?	No/probably no: If a nonnested case-control design has been used.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes Yes	Yes	Yes	Yes	Yes Yes	Yes Yes
1.2. Were all inclusions and exclusions of participants appropriate?	No/probably no: If participants are included who would already have been identified as having the workers and so are no longer participants at suspicion of disease (diagnostic studies) or at risk of developing quote (prognostic studies), or if apecific subgroups are excluded that may have altered the performance of the prediction model for the sterefied target proposition.	Probably No	Probably No	Probably No	Probably No	Probably No	Probably No	Probably No	Probebly No	Probably Yes	Probably Yes	Probably No	Probably No	Probably Yes	Probably Yes	Probably Yes
Participants-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias, except if defined at low risk of bias above	High RoB	High RoB	High RoB	High Ro8	High RoB	High RoB	High RoB	High RoB	Low Ro8	Low RoB	High RoB	High Ro8	Low RoB	Low RoB	Low RoB
Participants-Applicability	High concern for applicability: Included participants and clinical setting were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
2.1. Were predictors defined and assessed in a similar way for all participants?	abjorpubly no. If different definitions were losed for this semi-ender or if productions rought for this semi-ender or if productions rought for the semi-ender or increditions reasonably to ifferently experienced assessors. No information: If there is no information on how predictors were defined or assessed, (if the study is single-center but does not specify the enalystom embed of predictor, laid probably an information but does not specify the the eviduation method, it choose no information, because it is officult to unify and compare in this case).	No Information	No Information	No Information	No Information	No Information	No Information	Probably Yes	No Information	No Information	Probably Yes	No Information	No Information	No Information	Probably Yes	Probably Yes
2.2. Were predictor assessments made without knowledge of outcome data?	No/probably no: If it is clear that outcome information was used when assessing predictors.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.3. Are all predictors available at the time the model is intended to be used?	No/probably no: Predictors would not be available at the time the model is intended to be used for prediction.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Predictors-Risk of bias	Unclear risk of bias: If relevant information is missing for some of the signaling questions and none of the signaling questions is judged to put the domain at high risk of bias.	High RoB	High RoB	High RoB	High Ro8	High RoB	High Ro8	Low Ros	High RoB	High Ro8	Low RoB	High RoB	High RoB	High RoB	Low RoB	Low Ros
Predictors-Applicability	High concern for applicability: Definition, assessment, or timing of predictors were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
3.1. Was the outcome determined appropriately?	No/probably no: If a clearly suboptimal method has been used that causes unacceptable error in determining outcome status in participants.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.2. Was a prespecified or standard outcome definition used?	No/probably no: If the outcome definition was not standard and not prespecified	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	No
3.3. Were predictors excluded from the outcome definition	No/probably no: If ≥1 of the predictors forms part of the outcome definition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.4. Was the outcome defined and determined in a similar way for all participants?	No/probably no: If outcomes were clearly defined and determined in a different way for some participants.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.5. Was the outcome determined without knowledge of predictor information?	No/probably no: If it is clear that predictor information was used when determining the outcome status.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3.6. Was the time interval between predictor assessment and outcome determination appropriate?	No/probably no: If the time interval between predictor assessment and outcome determination is too short or too long to enable the correct type and representative number of relevant outcomes to be recorded.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
Outcome-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	High RoB
Outcome-Applicability	High concern for applicability: Choice of outcome definition, timing, and method of outcome determination defines another outcome as intended by the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
4.1. Were there a reasonable number of participants with the outcome?	No/probably no: For model development studies, if the number of participants with the outcome relative to the number of candidate predictor parameters is <10 (EPV <10).	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No
4.2. Were continuous and categorical predictors handled appropriately?	No/probably no: If categorical predictor group definitions do not use a prespecified method.	Probably No	Probably No	Probably No	Probably No	Probably No	Probably Yes	Probably No	No	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.3. Were all enrolled participants included in the analysis?	No/probably no: If some or a subgroup of participants are inappropriately excluded from the analysis.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.4. Were participants with missing data handled appropriately?	incorporate was in participants who missing data are omitted from the analysis, or if the method of handling missing data is clearly a flaved, e.g., missing indicator method or inappropriate use of last value carried forward, or if the study had no explicit mention of	Yes	Yes	Yes	Yes	Yes	No Information	Probably Yes	No Information	Probably Yes	Probably No	Probably No	Probably Yes	Yes	No Information	No Information
4.5. Was selection of predictors based on univariable analysis avoided?	No/probably no: If the predictors are selected on the basis of univariable analysis prior to multivariable modeling.	No	No	No	No	No	Yes	No	No	No	No	Yes	Probably Yes	No	No	No
4.6. Were complexities in the data accounted for appropriately?	No/probably no: If complexities in the data that could affect model performance are ignored	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.7. Were relevant model performance measures evaluated appropriately?	No/probably no: If both calibration and discrimination are not evaluated	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably No	Probably Yes	Yes	Probably No	Probably Yes	Probably No	Yes	Probably No	Probably No
4.8. Were model overfitting, underfitting, and optimism in model performance accounted for?	No/probably no: If no internal validation has been performed, or if internal validation consists only of a single readom spite-sample of participant data, or if the bootstrapping or cross-validation did not include all model development procedures including any variable valention.	Probably No	Probably No	Probably No	Probably No	Probably No	No	Probably Yes	No	Yes	No	Yes	Probably Yes	Yes	No	No
4.9. Do predictors and their assigned weights in the final model correspond to the results from the reported multivariable analysis?	No/probably no: If the predictive factors and regression coefficients in the final model do not match or are incomplete with the results reported in the factor analysis.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Probably No	Yes	Yes	Yes	Yes	Yes
Analysis-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	High RoB	High RoB	High RoB	High RoB	High RoB	High Ro8	High RoB	High Ro8	High Ro8	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB
Overall Risk of bias	High risk of bias: If ≥1 domain is judged to be at high risk of bias. Unclear risk of bias: If an unclear risk of bias was noted in ≥1 domain and it was low risk for all other low main.	High RoB	High RoB	High RoB	High Ro8	High RoB	High RoS	High RoB	High Ro8	High Ro8	High Ro8	High RoB	High RoB	High RoB	High RoB	High Ro8
Overall Applicability	High concerns for applicability: If high concerns for applicability for 21 domain, the prediction model evaluation is judged to have high concerns for applicability. Unclear concerns for applicability: If an unclear concern for applicability was noted in 21 domain and it was judged to have low concerns for applicability for all other domains.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern

Author. Year	Number	21 Karthikevan Remaraju, 2016	32 Euritikaan Damarah 2016	33 Filis Diamantes MD, 2014	34 N. Roche, 2008	35 Nicolas Roche, 2014	36 Yi Chen, 2020	27 Liping Fan, 2014	38 Dono Iliu 2015	39 Qi-tang Shi, 2018	40 Wei-ping Hu, 2019	41 Mi 7hou 2019	42 Xing Yu, 2020	43 Junfeng Peng, 2020	44 Wei Bi, 2020	45 Sen Doon 2021
1.1 Mars assessment	No (rephably nor If a populated rase_control		Karumeyan Kamanapa, 2019	Pilla Dialitatica MD, 2014					DOING DO. 2013							Peli Dung 2021
data sources used, e.g., cohort, RCT, or nested case-control study data?	No/probably no: If a nonnested case–control design has been used.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.2. Were all inclusions and exclusions of participants appropriate?	No(probably no: If participants are included who would already have been identified as having the outcome and so are no longer participants at included and the participants at the participant of the participants at the participant of developing outcome (prognostic studies), or if specific subgroups are excluded that may have already the performance of the prediction model for the internded target population.	Probably Yes	Probably Yes	Probably No	Probably No	Probably Yes	Probably No	Probably Yes	Probably No	Protebly No	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably No	Probably No
Participants-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias, except if defined at low risk of bias above	Low RoB	Low RoB	High Roll	High RoB	Low RoB	High RoB	Low Roll	High Roll	High Roll	Low RoB	Low Roll	High Roll	Low RoB	High Roll	High RoB
Participants-Applicability	High concern for applicability: Included participants and clinical setting were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
2.1. Were predictors defined and assessed in a similar way for all participants?	No/probably on II different definitions were used for the same predictor or if prediction requires designed on the same predictor or if prediction requires designed without sever assessor. No information. We defined or assessor in the study is significant to the same defined or assessor in the study is significant to take defined or assessor in the setup in significant less if prediction, I leaf prediction is the setup of the evaluation method of the setup of the reduction method of the setup of the reduction method of the setup of information, because it is distingly to uniformation because it is distingly to uniformation. Decoming it is distingly to uniformation because it is distingly to uniformation because it is distingly to uniformation.	Probably Yes	Probably Yes	Probably Yes	No information	No Information	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.2. Were predictor assessments made without knowledge of outcome data?	No/probably no: If it is clear that outcome information was used when assessing predictors.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.3. Are all predictors available at the time the model is intended to be used?	No/probably no: Predictors would not be available at the time the model is intended to be used for prediction.	Yes	Yes	Yes	Yes	Yes	Probably Yes	Yes	Yes	Probably Yes	Yes	Yes	Yes	Probably Yes	Yes	No
Predictors-Risk of bias	Unclear risk of bias: If relevant information is missing for some of the signaling questions and none of the signaling questions is judged to put the domain at high risk of bias.	Low RoB	Low RoB	Low RoB	High RoB	Unclear	Low Ros	Low RoB	Low Roll	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	High RoB
Predictors-Applicability	High concern for applicability: Definition, assessment, or timing of predictors were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
3.1. Was the outcome determined appropriately?	No/probably no: If a dearly suboptimal method has been used that causes unacceptable error in determining outcome status in perbolipants.	Yes	Yes	Yes	Yes	Yes	Probably Yes	Yes	Probably Yes	Yes	Probably Yes	Probably Yes	Yes	Probably Yes	Yes	Yes
3.2. Was a prespecified or standard outcome definition used?	No/probably no: If the outcome definition was not standard and not prespecified	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably Yes	Probably Yes	Probably Yes	No	Probably Yes	Probably Yes	Probably No	Probably Yes
3.3. Were predictors excluded from the outcome definition	No/probably no: If ≥1 of the predictors forms part of the outcome definition	Yes	Yes	Yes	Yes	Yes	Probably No	Probably No	Probably Yes	Yes	Yes	Probably Yes	Yes	Probably Yes	Yes	Yes
3.4. Was the outcome defined and determined in a similar way for all participants?	No/probably no: If outcomes were clearly defined and determined in a different way for some participants.	Yes	Yes	Yes	Yes	Probably Yes	Probably Yes	Yes	Probably Yes	Yes	Yes	Probably Yes	Yes	Probably Yes	Yes	Yes
3.5. Was the outcome determined without knowledge of predictor information?	No/probably no: If it is clear that predictor information was used when determining the outcome status.	Yes	Yes	Yes	Yes	Yes	Probably No	Probably No	Probably Yes	Yes	Probably Yes	Probably Yes	Yes	Probably Yes	Yes	Yes
3.6. Was the time interval between predictor assessment and outcome determination appropriate?	No/probably no: If the time internal between predictor assessment and outcome determination is too short or too long to enable the correct type and representative number of relevant outcomes to be recorded.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
Outcome-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	Low RoB	Low Roll	Low RoB	Low RoB	Low RoB	High Roll	High RoB	Low RoB	Low RoB	Low RoB	High RoB	Low RoB	Low RoB	High RoB	Low RoB
Outcome-Applicability	High concern for applicability: Choice of outcome definition, timing, and method of outcome determination defines another outcome as intended by the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
4.1. Were there a reasonable number of participants with the outcome?	No/probably no: For model development studies, if the number of participants with the outcome relative to the number of candidate predictor parameters is <10 (EPV <10).	No	No	No	No	No	No	No	No	No	No	Yes	No	No	Yes	No
4.2. Were continuous and categorical predictors handled appropriately?	No/probably no: If categorical predictor group definitions do not use a prespecified method.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.3. Were all enrolled participants included in the analysis?	No/probably no: If some or a subgroup of participants are inappropriately excluded from the analysis.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.4. Were participants with missing data handled appropriately?	No/probably no: If participants with missing data are omitted from the analysis, or if the method of handling missing data is clearly flawed, e.g., missing indicator method or inappropriate use of leat value carried forward, or if the study had no explicit mention of methods to handle missing data.	No Information	No Information	No Information	Probably Yes	No information	Probably Yes	No Information	Probably No	No information	No Information	Probably Yes	No Information	Probably No	No Information	No information
4.5. Was selection of predictors based on univariable analysis avoided?	No/probably no: If the predictors are selected on the basis of universable analysis prior to multivariable modeling.	No	No	No	No	No	No	No	No	Protebly No	Yes	Yes	No	Yes	No	No
4.6. Were complexities in the data accounted for appropriately?	No/probably no: If complexities in the data that could affect model performance are ignored	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.7. Were relevant model performance measures evaluated appropriately?	No/probably no: If both calibration and discrimination are not evaluated	Probably Yes	Probably Yes	Probably No	Yes	No	Probably No	Probably No	Probably No	Protebly No	Probably Yes	Probably No	Probably No	Probably No	Probably No	Yes
4.8. Were model overfitting, underfitting, and optimism in model performance accounted for?	No/probably no: If no internal validation has been performed, or if internal validation consists only of a single random spit-sample of participant did a single random spit-sample of participant did not include all model development procedures including any variable selection.	No	No	No	Probably No	Probably Yes	No	No	Probably No	No	Yes	Probably Yes	Probably Yes	Probably Yes	No	Yes
4.9. Do predictors and their assigned weights in the final model correspond to the results from the reported multivariable analysis?	No(probably no: If the predictive factors and regression coefficients in the final model do not match or are incomplete with the results reported in the factor analysis.	Yes	Yes	Yes	Yes	Probably Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Analysis-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	Hgh RoB	High RoB	High RoB	High RoB	High RoB	High Roll	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB
Overall Risk of bias	High risk of bias: If ≥1 domain is judged to be at high risk of bias. Unclear risk of bias. Unclear risk of bias: If an unclear risk of bias was noted in ≥1 domain and it was low risk for all otherdomains.	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High Roll	High RoB	High RoB	High RoB	High RoB	High RoB
Overall Applicability	High concerns for applicability. If high concerns for applicability for 2.1 domain, the prediction model evaluation is judged to have high concerns for applicability. Underect concerns for applicability. If an undere concern for applicability and 2.1 domain and it was judged to have low concerns for applicability for all other domains.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern

	Number		1 47	40		50	61	57	50
Author, Year 1.1. Were appropriate data	Criterion	Lan Chen, 2021	Lili Chen and Shiping Chen, 2021	Lifen Yang, 2022	Dawei Chen, 2023	Lin Yu. 2023	Shiyi He, 2023	Li-Na Yan, 2024	Reza Fakhraei, 2023
sources used, e.g., cohort, RCT, or nested case-control study data?	No/probably no: If a nonnested case-control design has been used.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
1.2. Were all inclusions and exclusions of participants appropriate?	No/probably no. If participants are included who would already have been identified as having the outcome and so are no longer participants at suspicion of disease (dispinosis tubles) or at risk of develoring outcome prognosios studes), or a specific subgroups are escluded that may have alread the performance of the prediction mobil for the intended tanget population.	Probably No	Probably Yes	Probably No	Probably Yes	Probably No	Probably No	Probably No	Probably Yes
Participants-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias, except if defined at low risk of bias above		Low RoB	High RoB	Low RoB	High RoB	High Ro8	High RoB	Low RoB
Participants-Applicability	High concern for applicability: Included participants and clinical setting were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
2.1. Were predictors defined and assessed in a similar way for all participants?	No/probably no II different differions were used for the same predictor or if prediction requiring subjective experiences are repeated by differently operational representation was estated by differently operational representations were defined or assessed (If the study is represented to the representation method of the representation of the represen	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.2. Were predictor assessments made without knowledge of outcome data?	No/probably no: If it is clear that outcome information was used when assessing predictors.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
2.3. Are all predictors available at the time the model is intended to be used?	No/probably no: Predictors would not be available at the time the model is intended to be used for prediction.	Yes	Yes	No	Yes	Yes	Probably Yes	Yes	Yes
Predictors-Risk of bias	Unclear risk of bias: If relevant information is missing for some of the signaling questions and none of the signaling questions is judged to put the domain at high risk of bias.	Low RoB	Low RoB	High RoB	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB
Predictors-Applicability	High concern for applicability: Definition, assessment, or timing of predictors were different from the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
3.1. Was the outcome determined appropriately?	No/probably no: If a dearly suboptimal method has been used that causes unacceptable error in determining outcome status in participants.	Yes	Probably Yes	Yes	Probably Yes	Yes	Probably Yes	Probably Yes	Yes
3.2. Was a prespecified or standard outcome definition used?	No/probably no: If the outcome definition was not standard and not prespecified	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably No	Probably Yes	Probably Yes
3.3. Were predictors excluded from the outcome definition	No/probably no: If >1 of the predictors forms part of the outcome definition	Yes	Probably Yes	Yes	Yes	Yes	Probably Yes	No	Yes
3.4. Was the outcome defined and determined in a similar way for all participants?	No/probably no: If outcomes were clearly defined and determined in a different way for some participants.	Yes	Probably Yes	Yes	Probably Yes	Yes	Probably Yes	Probably Yes	Yes
3.5. Was the outcome determined without knowledge of predictor information?	No/probably no: If it is clear that predictor information was used when determining the outcome status.	Yes	Probably Yes	Yes	Yes	Yes	Probably No	No	Yes
3.6. Was the time interval betweer predictor assessment and outcome determination appropriate?	No/probably no: If the time interval between predictor assessment and outcome determination is too short or too long to enable the correct type and representative number of relevant outcomes to be recorded.	Probably Yes	Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
Outcome-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	Low RoB	Low RoB	Low RoB	Low RoB	Low RoB	High RoB	High RoB	Low RoB
Outcome-Applicability	High concern for applicability: Choice of outcome definition, timing, and method of outcome determination defines another outcome as intended by the review question.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern
4.1. Were there a reasonable number of participants with the outcome?	No/probably no: For model development studies, if the number of participants with the outcome relative to the number of candidate predictor parameters is <10 (EPV <10).	No	No	No	No	No	No	No	No
4.2. Were continuous and categorical predictors handled appropriately?	No/probably no: If categorical predictor group definitions do not use a prespecified method.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.3. Were all enrolled participants included in the analysis?	No/probably no: If some or a subgroup of participants are inappropriately excluded from the analysis.	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.4. Were participants with missing data handled appropriately?	No/probably not if participants with missing data are omated from the analysis, or if the method of handling missing data is clearly flawed, e.g., missing indicator method or inappropriate use of last value carried forward, or if the study had no explicit mention of methods to handle missing data.	No Information	Probably Yes	No Information	No Information	Probably Yes	No Information	No Information	Probably Yes
4.5. Was selection of predictors based on univariable analysis avoided?	No/probably no: If the predictors are selected on the basis of univariable analysis prior to multivariable modeling.	No	No	No	No	Yes	No	No	Yes
4.6. Were complexities in the data accounted for appropriately?	No/probably no: If complexities in the data that could affect model performance are ignored	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes	Probably Yes
4.7. Were relevant model performance measures evaluated appropriately?	No/probably no: If both calibration and discrimination are not evaluated	Probably No	Probably No	Yes	Probably Yes	Probably No	Probably Yes	Probably Yes	Probably No
4.8. Were model overfitting, underfitting, and optimism in model performance accounted for?	No/probably no: If no internal validation has been performed, or if internal validation consists only of a single-random solt-sample of participant data, or if the tootstrapping or cross-validation did not include all model development procedures including any variable selection.	Probably Yes	Probably No	No	Probably Yes	Probably Yes	Yes	Probably No	Probably Yes
4.9. Do predictors and their assigned weights in the final model correspond to the results from the reported multivariable analysis?	No/probably no: If the predictive factors and regression coefficients in the final model do not match or are incomplete with the results reported in the factor analysis.	No	Yes	No	Probably Yes	Yes	Yes	Probably Yes	Probably No
Analysis-Risk of bias	High risk of bias: If the answer to any of the signaling questions is "No" or "Probably no," there is a potential for bias.	High Ro8	High RoB	High Ro8	High Ro8	High RoB	High RoB	High RoB	High Ro8
Overall Risk of bias	High risk of bias: If ≥1 domain is judged to be at high risk of bias. Unclear risk of bias: If an unclear risk of bias was noted in ≥1 domain and it was low risk for all otherdomains.	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB	High RoB
Overall Applicability	high concerns for applicability. If high concerns for applicability for 2.1 domain, the prediction model evaluation is judged to have high concerns for applicability. Unclear concerns for applicability. If an unclear concern for applicability was noted in 2.1 domain and it was judged to have low concerns for applicability for all other domains.	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern	Low concern