General information

Overview all articles											
General information			Study type			Domain		Outcome		Prognostic model	
Author	Year	Title	Development	External validation	Incremental value	Country	Income-type (mix)	Type of pregnancy complication	Label		

Development articles

General information								Methods						
Overall information			Paper information		Study population			Outcome		Model development	Validation			
Author	Year	Title	number of models developed	Model/label number	Source of data/design	Inclusion criteria used/ participants	Country	Outcome under investigation	Prediction horizon/ candidate predictors	Modelling method	Internal validation performend	Method of internal validation	external validation performed	incremental value paper

Results																
Sample size		Internal validation		Predictors			Model performance			Extended/adjusted model performance					Final	
N= participants	N= participants with outcome	N=of participant in validation sample	N= participants with outcome in validation sample	Number of predictors used in the final model	Predictors were used	Predictors in final model including interactions	overall performance measure	calibration	Discrimination measures	Number of predictors used in the extended/ adjusted model	Which predictors were added/ adjusted	Overall performance measure	calibration	Discrimination measures	Presentation of the final prediction models to allow application of the model to the patient	Additional comments

External validation

Overall										Method		
General information			Information validated score/model					Study information		Study population		Method
Author	Year	Title	First author	Journal	Year	Score/model	predictors implemented	Number of models validated	Model number	Inclusion criteria	Country	Type of external validation (more options possible)

Results												
Sample size		Model performance after validation of non-adjusted/-updated model, so model applied to validation population without adjustment or update of model				Model performance after adjustment or update of original model						Additional comments
Number of participants	Number of participants with outcome	Overall performance	Calibration	discriminatio n measures	(Re-)classification measures and for which cut-off points (specify each classification measure of each cut-off presented)	in case of reclassificatio n, indicate comparator	Overall performance measure	Calibratio n	discriminatio n measures	(Re-)classification measures and for which cut-off points (specify each classification measure of each cut-off presented)	in case of reclassificatio n, indicate comparator	

Incremental value

General information																
1 overall information				2 information incremented score					3 paper information				4 Predictors		5 additional comments	
Authors	Year	Title	Model/ score	First author	Journal	Year	Model/ score	Country	Number of models extended	Model number	Participants included (outcome)	Validation performed?	Newly added predictors including interactions	Model performance		Final model

Criteria	Yes/Probably yes	No/Probably no	Unclear
1. Were appropriate data sources used, e.g. cohort, RCT of nested case-control data?	Cohort design, nested case-control or case-cohort design	Non-nested case-control design	unclear method
2. Were all inclusions and exclusions of participants appropriate?	Starting point for inclusion was all participants in which the model will be used in practice; aka population of interest	Participants included who already had the outcome in prognostic studies or if specific subgroups are excluded that may have altered the performance of the model.	Unclear whether appropriate in- or exclusions took place
*3. Were participant selection criteria similar to the model development study?**	In- and exclusion criteria in the validation study are similar to the model development study	Difference in in- and exclusion criteria	No information
1.Were predictors defined and assessed in a similar way for all patients?	If definitions of predictors and their assessment were similar for all participants	If different definitions were used for the same predictor, especially those subjectively assessed. Also if predictors requiring subjective interpretation are assessed by differently experienced assessors.	No information
*2.Were predictors defined and assessed in a similar way to predictors in the development model?**	If predictors in the validation study were defined and assessed in a similar way to predictors in the model development study	The assessment or definition of predictors was different from the model development study	No information available
3. Were predictor assessments made without knowledge of outcome data?	If outcome information was not available when assessing predictors	if it is clear that outcome information was available when assessing predictors	No information available
4. Are all predictors available at the time the model is intended to be used?	All included predictors were available at the time the model is used for prediction	Predictors were assessed after the time the model is used for prediction	No information available
1. Was the outcome determined appropriately?	If a method of outcome determination has been used which is considered optimal or acceptable for the target condition by experts	If a clearly suboptimal method has been used that causes unacceptable levels of error in determining patient outcomes.	No information
2. Was a pre-specified or standard outcome definition used?	Outcome is objective (dead vs. alive) or standard definition is used (BMI>25 = overweight) or pre-specified categories are used to group outcomes.	Outcome definition not standard and ws not pre-specified.	No information
3. Were predictors excluded from the outcome definition?	If none of the predictors are included in the outcome definition	If one or more of the predictors forms part of the outcome definition	No information
4. Was the outcome defined and determined in a similar way for all participants?	Determined in similar way for all participants	If outcomes were clearly determined in a different way for some participants	No information
*5. Was the outcome defined and determined in a similar way to the outcomes in the model development study?**	Outcome was defined and determined in a similar way to the outcome in the model development study	Outcome was defined an determined in a different way to the outcome in the model development study	No information

6. Was the outcome determined without knowledge of predictor information?	If predictor information was not known when determining the outcome status, or outcome determination is reported as determined without knowledge of predictor information	If it is clear that predictor information was available when determining the outcome status	No information
7. Was the time interval between predictor assessment and outcome determination appropriate?	If the time interval between predictor assessment and outcome determination was appropriate to enable a representative number of relevant outcomes to be recorded	If the time interval is too short or too long to enable a representative number of relevant outcomes to be recorded.	No information
1. Were there a reasonable number of participants with the outcome?	For model development studies, if the number of outcome events relative to the number of candidate predictors is 10 or more (EPV ≥ 10). For model validation studies, if the number of outcome events is 100 or more.	For model development studies, the number of outcome events relative to the number of candidate predictors is less than 10 (EPV < 10). For model validation studies, if the number of outcome events is less than 100	No information
2. Were continuous and categorical predictors handled appropriately?	If continuous predictors are not converted into two or more categories when included in the model (i.e. dichotomised or categorised), and if continuous predictors are examined for nonlinearity using, for example, fractional polynomials or restricted cubic splines	If categorical predictor groups definitions do not use a pre-specified or standard method. For model development studies, if continuous predictors are converted into two or more categories when included in the model. For model validation studies, if continuous predictors or categorical variables are categorised using different cut-points compared to the development study.	No information
3. Were all enrolled participants included in the analysis?	If all participants enrolled in the study are included in the data analysis.	If some or a subgroup of participants are inappropriately excluded from the analysis	No information
4. Were participants with missing data handled appropriately?	If there are no missing values of predictors or outcomes and the study explicitly reports that participants are not excluded on the basis of missing data, or if missing values are replaced using multiple imputation	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.	No information
5. Was selection of predictors based on univariate analysis avoided? **	If the predictors are not selected based on univariate analysis prior to multivariable modelling	If the predictors are selected based on univariate analysis prior to multivariable modelling.	No information
6. Were complexities in the data (e.g. censoring, competing risks, sampling of controls) accounted for appropriately?	If any complexities in the data are accounted for appropriately, or if it is clear that potential data complexities have been identified appropriately as unimportant.	If complexities in the data that could affect model performance are ignored	No information

7. Were relevant model performance measures evaluated appropriately?	If both calibration and discrimination are evaluated appropriately (including relevant measures tailored for models predicting survival outcomes)	If both calibration and discrimination are not evaluated, or if only goodness-of-fit tests, such as the Hosmer-Lemeshow test are used to evaluate calibration, or if for models predicting survival outcomes performance measures accounting for censoring are not used, or if measures like sensitivity, specificity or predictive values, were presented using thresholds derived from the dataset at hand.	No information
8. Was model overfitting and optimism in model performance accounted for?**	If internal validation techniques, such as bootstrapping and cross-validation have been used to account for any optimism in model fitting.	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 bootstrapping or cross-validation did not include all model development procedures including any variable selection	No information
9. Do predictors and their assigned weights in the final model correspond to the results from multivariable analysis? **	If the predictors and regression coefficients in the final model correspond to results from a multivariable analysis restricted to exactly the same predictors.	If the predictors and regression coefficients in the final model do not correspond to results from a multivariable analysis restricted to exactly the same predictors.	No information

Study	Model	Patient selection	Predictors	Outcomes	Analysis
Kayode, G.A.; 2016	Still1	1. Yes	Yes	Yes	Yes
		2. No	-	Yes	Yes
		3. -	Yes	Yes	Yes
			Yes	Yes	Yes
				-	Yes
				No	Yes
				Unclear	Yes
					Yes
					Yes
Romero-Gutiérrez, G; 2005	Still2	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	No	Yes	Yes
			Unclear	Yes	Yes
				-	No
				Unclear	Unclear
				No	Unclear
					Unclear
					Yes
Ukah, U. V. ; 2017	fullPIERS	Yes	Yes	Yes	Yes
		Yes	Yes	Yes	-
		Yes	Unclear	Yes	-
			Yes	Yes	Yes
				Yes	-
				Unclear	-
				Yes	Yes
					Yes
					Yes
Payne, B. A. ; 2015	Still3	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	Yes	Yes	No
			Yes	Yes	Yes
				-	Yes
				Unclear	Yes
				Yes	Yes
					Yes
					Yes
Payne, B. A.; 2014	miniPIERS	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes

		-	Yes	Yes	No
			Yes	Yes	Yes
				-	Yes
				Unclear	Yes
				Yes	Yes
					Yes
					Yes
Payne, B.A.; 2015	miniPIERS(SpO2)	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	Yes	Yes	Yes
			Yes	Yes	Yes
				-	-
				Yes	Yes
				Yes	Yes
					-
					Yes
Kumar, M; 2016	Hyper	Yes	Unclear	Yes	Yes
		Yes	-	Yes	Yes
		-	No	Yes	No
			Unclear	Yes	Unclear
				-	Yes
				Unclear	Unclear
				Unclear	Yes
					No
					Yes
Geelhoed, D; 2006	Anem1	Yes	Yes	Yes	Yes
		Yes	-	Yes	Unclear
		-	No	No	Yes
			No	Yes	Unclear
				-	Unclear
				No	Unclear
				No	Unclear
					Unclear
					Yes
Harutyunyan, A; 2013	Eclamps1	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	Unclear	Yes	No
			Yes	Yes	Yes
				-	Yes
				No	Unclear
				No	Yes

					Yes
					Unclear
Nascimento, L. F. C.	ND1	No	Unclear	Yes	Yes
		Unclear	Yes	Yes	Yes
		Yes	Unclear	Yes	Unclear
			Yes	Yes	Unclear
				Yes	Unclear
				Unclear	Unclear
				Unclear	Unclear
					Yes
					Unclear
Tsu, V; 1994	pph1	No	Yes	Yes	Yes
		Yes	-	No	Yes
		-	No	Yes	Unclear
			Yes	Yes	Unclear
				-	Yes
				Unclear	Unclear
				Yes	Unclear
					No
					Yes
Nelissen, E; 2013	mnmc	No	Yes	Yes	No
		Yes	No	Yes	Yes
		No	No	No	-
			Yes	Yes	Yes
				No	Unclear
				No	Unclear
				Unclear	Unclear
					No
					Yes
Tilahun, S; 2008	PM1				
Zhou, J; 2012	Pe1 and gdm1	Unclear (sounds like cohort but not reported)	Yes	Yes	No for pre-eclampsia Yes for GBM
		Yes	-	Yes	Yes
		-	Yes	Yes	Unclear
			Yes	Yes	Unclear
				-	Yes
				Yes	Unclear
				Yes	Unclear
					Unclear

					Yes
Hoirisch-Clapauch, S; 2011	Pe2	Yes	Unclear	Yes	Yes
		Yes	-	Yes	Yes
		-	Unclear	Yes	Yes
			Yes	Yes	Unclear
				-	Yes
				No	Unclear
				Yes	Yes
					Yes
					Yes
Phaloprakarn, C; 2009	gdm2	Yes	Yes	Yes	Yes
		Unclear	-	Yes	Unclear
		-	No	No	Yes
			Yes	Yes	Unclear
				-	Yes
				No	Unclear
				Unclear	Yes
					Yes
					Yes
Sekizawa, A; 2010	pe3	Yes	Yes	Yes	No
		Yes	-	Yes	Unclear
		-	Yes	Yes	No
			Unclear	Yes	Unclear
				-	Yes
				Yes	Unclear
				Unclear	Yes
					No
					Unclear
De Oliveira, R; 2012	spl1	Yes	Yes	Yes	No
		Yes	-	Yes	Yes
		-	Yes	Yes	No
			Yes	Yes	Yes
				-	Yes
				Unclear	Unclear
				Yes	Yes
					Yes
					Unclear
Benjamin, S; 2012	cpd1	Yes	Unclear	Unclear	No
		Yes	-	Unclear	Unclear
		-	Unclear	Unclear	No

			Unclear	Yes	Unclear
				-	Unclear
				Unclear	Unclear
				Unclear	Yes
					Unclear
					No
Prata, N; 2011	pph2	Yes	Yes	Yes	No
		Yes	-	Yes	Yes
		-	Yes	Yes	Yes
			Yes	Yes	Yes
				-	Yes
				Unclear	Unclear
				Yes	Yes
					Unclear
					Unclear
Antwi, E- 2018	GH2	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	Yes	Yes	No
			Yes	Yes	Yes
				-	Yes
				Unclear	Yes
				Yes	Yes
					Unclear
					Unclear
Antwi, E - 2017	GH1	Yes	Yes	Yes	Yes
		Yes	-	Yes	Yes
		-	Unclear	No	Yes
			Yes	Yes	Unclear
				-	Yes
				Unclear	Yes
				Yes	Yes
					Yes
					Yes