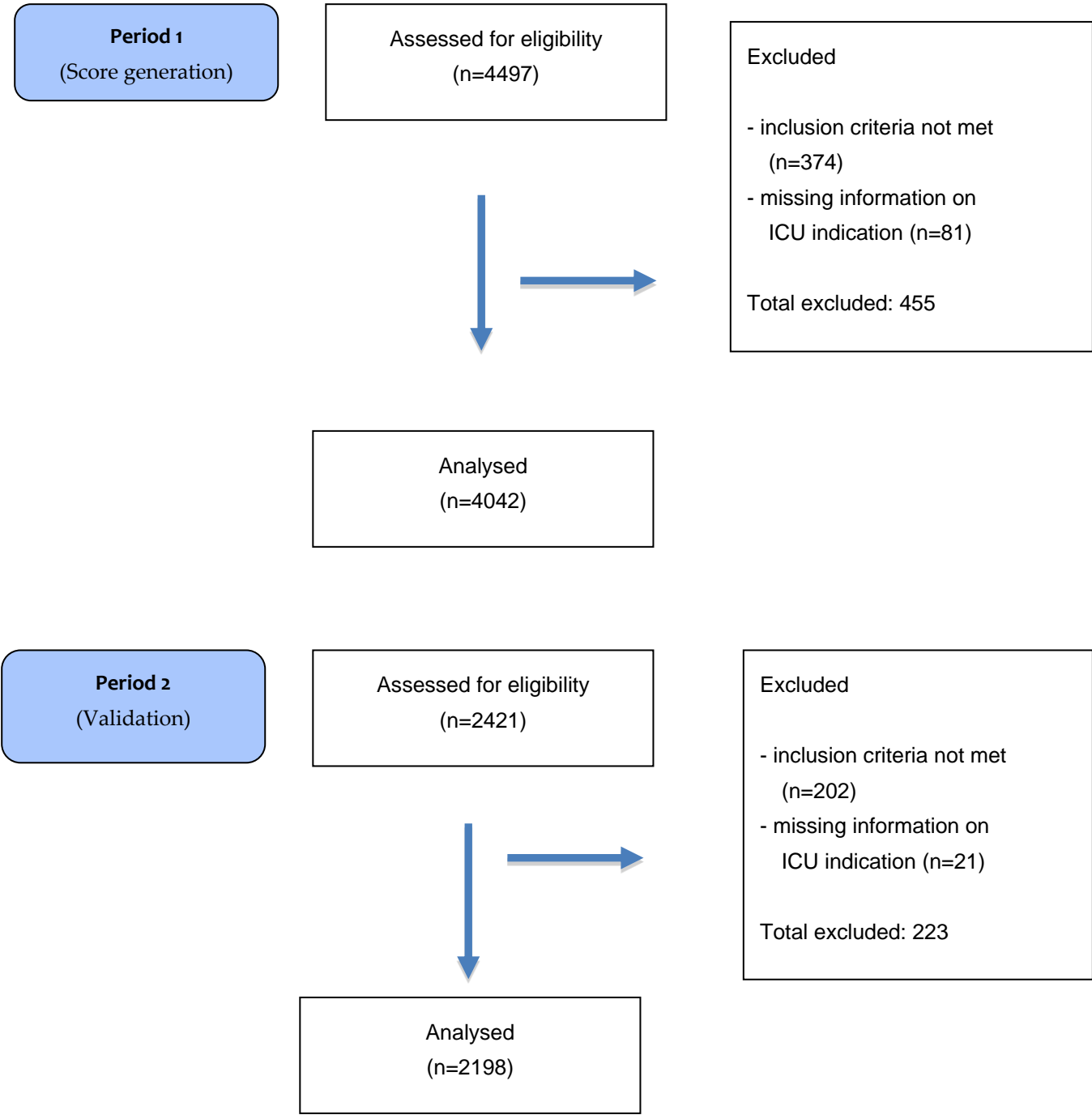
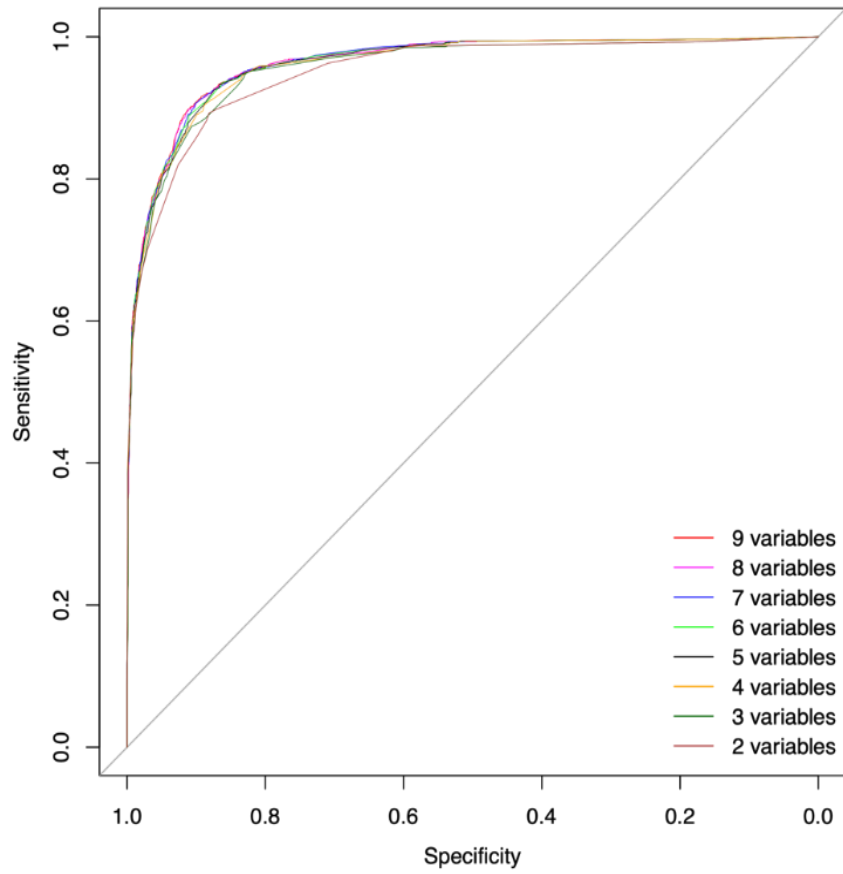


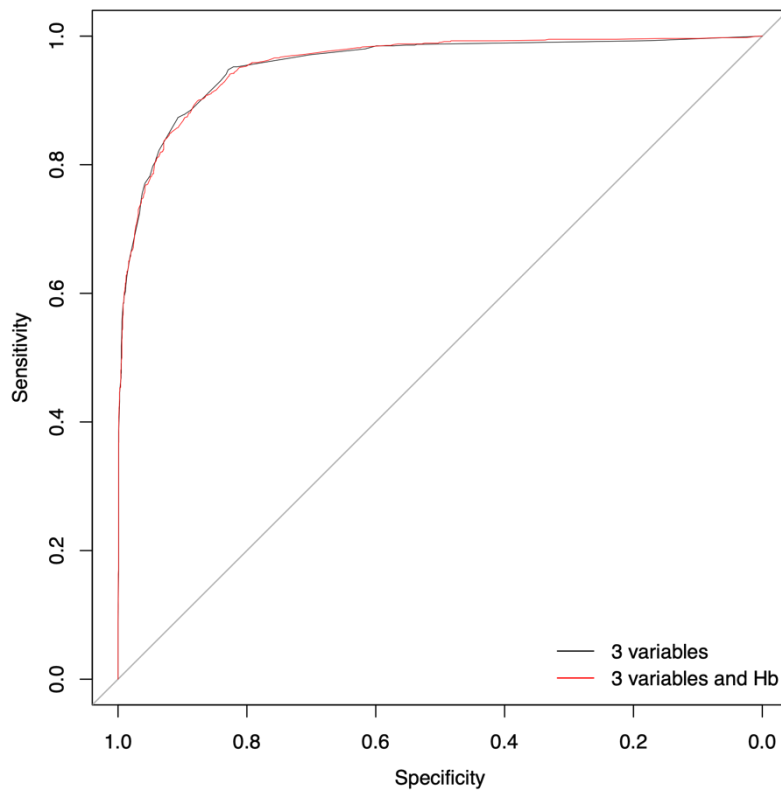
Supplementary Materials: The following are available online at www.mdpi.com/xxx/s1

Supplementary Figure 1: Flow chart for study Period 1 and Period 2.





Supplementary Figure 2: Model comparison of 2-9 variables (ROC curve).



Supplementary Figure 3: Model comparison with and without Hb (ROC curve).

Supplementary Table 1: Results of the fivefold cross validation evaluation in Period 1.

Statistical Measure	Set 1	Set 2	Set 3	Set 4	Set 5	Ø	Total
Threshold	0.24	0.10	0.19	0.18	0.24	0.19	0.21
Specificity	0.92	0.84	0.90	0.90	0.89	0.89	0.91
Sensitivity	0.89	0.96	0.90	0.92	0.91	0.92	0.90
AUC	0.96	0.96	0.96	0.96	0.96	0.96	0.96
(95% CI)	(0.94-0.97)	(0.94-0.97)	(0.94-0.97)	(0.95-0.98)	(0.95-0.98)	0.96	(0.96-0.97)
Accuracy	0.91	0.87	0.90	0.90	0.90	0.90	0.91
Variables in model	Urgency of surgery	Urgency of surgery	Urgency of surgery	Urgency of surgery	Urgency of surgery	Urgency of surgery	Urgency of surgery
	ASA	ASA	ASA	ASA	ASA	ASA	ASA
	Cardiovascular PC	Cardiovascular PC	Cardiovascular PC	Cardiovascular PC	Cardiovascular PC	Cardiovascular PC	Cardiovascular PC
	Neurological PC	Neurological PC	Neurological PC	Neurological PC	Neurological PC	Neurological PC	Neurological PC
	Isolation	Isolation	Isolation	Isolation	Isolation	Isolation	Isolation
	MET	MET	MET	MET	MET	MET	MET
	Kind of surgery	Kind of surgery	Kind of surgery	Kind of surgery	Kind of surgery	Kind of surgery	Kind of surgery
	Infection	Infection	Infection	Infection	Infection	Infection	Infection
	Sex	Sex	Sex	Sex	Sex	Sex	Sex
		Liver insufficiency	Liver insufficiency	Liver insufficiency	Liver insufficiency	Liver insufficiency	Liver insufficiency
	Renal insufficiency	Renal insufficiency	Renal insufficiency	Renal insufficiency	Renal insufficiency	Renal insufficiency	

Set i (for i between 1 and 5): predictive results for cross validation set i as test set for predictive performance; the other sets (train set) were used for model selection. Ø: average over the five sets. Total: results of model selection and predictive performance based on the complete dataset as both test and training set. The variable hemoglobin was not considered as influence variable in this analysis. PC—Precondition; AUC—Area under the curve; CI—Confidence interval; MET Metabolic equivalent

Supplementary Table 2: Calculated EXPO-Scores for all possible combinations of ASA physical status (ASA status I-IV), MET (1: ≥ 4 MET / 2: < 4 MET) and type of surgery (categories 1-12 as mentioned in paragraph 2.3). EXPO-Score shows values between 0 and 1; in order to receive percentages multiply score by 100.

ASA	MET	Surgery	EXPO-Score
1	1	1	0,211339482
2	1	1	0,28613144
3	1	1	0,730884988
4	1	1	0,962503542
1	2	1	0,485403538
2	2	1	0,585215292
3	2	1	0,905302799
4	2	1	0,989053829
1	1	2	0,020539377
2	1	2	0,030411953
3	1	2	0,175278341
4	1	2	0,667633985
1	2	2	0,068741076
2	2	2	0,099430557
3	2	2	0,427954181
4	2	2	0,876096265
1	1	3	0,056128195
2	1	3	0,081680546
3	1	3	0,376046129
4	1	3	0,850662851
1	2	3	0,173089977
2	2	3	0,238438103
3	2	3	0,679636789
4	2	3	0,952496233
1	1	4	0,100361605
2	1	4	0,143000334
3	1	4	0,530655073
4	1	4	0,9144286
1	2	4	0,281962962
2	2	4	0,370021915
3	2	4	0,799190403
4	2	4	0,974103659
1	1	5	0,028428387
2	1	5	0,041930607
3	1	5	0,228722397
4	1	5	0,737038919

1	2	5	0,093378913
2	2	5	0,133491234
3	2	5	0,510730458
4	2	5	0,907970475
1	1	6	0,019029493
2	1	6	0,028197213
3	1	6	0,16430148
4	1	6	0,65012964
1	2	6	0,063919045
2	2	6	0,092669954
3	2	6	0,409000902
4	2	6	0,867390075
1	1	7	0,163054782
2	1	7	0,225648092
3	1	7	0,663809016
4	1	7	0,94914046
1	2	7	0,406801283
2	2	7	0,506354158
3	2	7	0,874218364
4	2	7	0,985005398
1	1	8	0,838964226
2	1	8	0,886266949
3	1	8	0,981412964
4	1	8	0,998000193
1	2	8	0,948290006
2	2	8	0,964825705
3	2	8	0,994648416
4	2	8	0,999431062
1	1	9	0,87744385
2	1	9	0,914594188
3	1	9	0,986405888
4	1	9	0,998544
1	2	9	0,961834537
2	2	9	0,974157034
3	2	9	0,996100108
4	2	9	0,999585935
1	1	10	0,005805453
2	1	10	0,008658542
3	1	10	0,055874668
4	1	10	0,358708548
1	2	10	0,020140677

2	2	10	0,029827448
3	2	10	0,172404642
4	2	10	0,663179141
1	1	11	0,033593073
2	1	11	0,049423507
3	1	11	0,260518066
4	1	11	0,769039628
1	2	11	0,109019347
2	2	11	0,154703807
3	2	11	0,553590887
4	2	11	0,921388525
1	1	12	0,315395388
2	1	12	0,407963209
3	1	12	0,823606134
4	1	12	0,977841947
1	2	12	0,618563
2	2	12	0,708079729
3	2	12	0,942645599
4	2	12	0,993603675

Categories:

- 1) large ear-nose-throat/maxillofacial tumor surgery
- 2) hip/knee arthroplasty
- 3) thoracic surgery with one-lung ventilation
- 4) upper abdominal surgery
- 5) urogenital surgery
- 6) vascular surgery
- 7) endovascular aortic repair
- 8) non-cardiac surgery with planned ICU admission
- 9) cardiac surgery
- 10) miscellaneous minor
- 11) miscellaneous intermediate
- 12) miscellaneous major