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Tables

Table A1. One-way analysis of the numerical predictors' variance. All significant predictors are marked with an asterisk (*)

Predictor	ANOVA test	
	statistics	p-value
Age*	42.2	10^{-15}
Body temperature*	60.8	10^{-24}
Breath rate*	22.5	10^{-10}
Heart rate*	13.8	10^{-6}
Systolic blood pressure*	8.6	0.0002
Diastolic blood pressure*	8.0	0.0004
Blood hemoglobin	0.2	0.8401
Blood leukocytes	2.7	0.0697
Blood lymphocytes*	13.1	10^{-5}
Plasma total protein	1.4	0.2421
Alanine aminotransferase*	36.0	10^{-13}
Aspartate aminotransferase*	38.1	10^{-13}
Urea*	31.2	10^{-12}
Creatinine*	20.8	10^{-8}
Total bilirubin*	7.3	0.0009
Total diuresis	1.9	0.1641

Table A1. The results of the different Gaussian mixture models with the exclusion of one predictor on combined validation and the baseline model's false positives from the development set.

Excluded predictor	F1	C Index
Baseline	*0.766*	*0.881*
Complications	**0.818**	**0.897**
Auscultation	**0.791**	**0.890**
X-ray	0.756	0.855
Sex	0.766	0.870
Systolic Pressure	0.750	0.873
Diastolic Pressure	0.750	0.877
Heart rate	0.723	0.854
Body temperature	0.773	0.876
SpO_2	0.633	0.854
Comorbidities	0.766	0.883
Age	0.655	0.876
Breath rate	0.694	0.848

Table A3. Statistics of the optimal Gaussian mixture model on the test set

Metrics	Value
True positive rate	0.914
False negative rate	0.086
False positive rate	0.033
True negative rate	0.967
Negative predictive value	0.951
Positive predictive value	0.941
False omission rate	0.049
Positive likelihood ratio	27.43
Negative likelihood ratio	0.089
Diagnostic odds ratio	309.33
F1 score	0.928
C Index	0.965
Cohen's Kappa	0.886

Table A4. The change in numerical predictors that altered the risk level predicted by the optimal model for 50% of the patients observed

Predictor	Change in value
Systolic Blood Pressure	22
Diastolic Blood Pressure	15
Heart rate	13
Body Temperature	0.7°C
SpO_2	9.7
Age	52
Breath rate	4

Table A5. The percentage of patients changed their risk level predicted by the optimal model depending on the flip of categorical predictor

Categorical data	% of patients changed their risk level
X-ray examination	88.9 %
Sex	12.8 %
Comorbidities	61.1 %

Table A6. Statistical data on patients' *heart rate*

Parameters	neg	pos	lethal
Mean	81.3	86.1	91.7
Standard deviation	8.2	14.5	20.3
95% CI	81-82	81-91	80-103
Interquartile range	76-83	78-91	76-109
Range	68-144	60-140	60-130
n	592	40	15

Table A7. Statistical data on patients' *systolic blood pressure*

Parameters	neg	pos	lethal
Mean	112.6	121	115.7
Standard deviation	11.4	17.8	30.6
95% CI	111.6-113	115-127	98-133
Interquartile range	110-120	110-126	95-140
Range	60-170	90-200	30-150
N	592	40	15

Table A8. Statistical data on patients' *diastolic blood pressure*

Parameters	neg	pos	lethal
Mean	74	78.5	73.7
Standard deviation	7.7	8.3	13.4
95% CI	73-74.6	75.8-81	65.7-81.7
Interquartile range	70-80	70-81	60-83.8
Range	50-100	60-100	50-90
N	591	40	14

Table A9. Statistical data on patients' *SpO$_2$*

Parameters	neg	pos	lethal
Mean	97.3	91.1	80
Standard deviation	1.8	11.6	16.2
95% CI	97-97.4	87-95	69.9-90
Interquartile range	97-98	91-96	80-91
Range	91-100	34-99	38-96
N	461	35	13

Table A10. Statistical data on patients' *breath rate*

Parameters	neg	pos	lethal
Mean	20	22.3	25.3
Standard deviation	3.4	2.3	8.0
95% CI	19.7-20.3	21.5-23	20.7-30.0
Interquartile range	18-22	21.5-24	20-26
Range	14-28	17-30	18-48
N	566	39	15

Table A11. Statistical data on patients' *body temperature*

Parameters	neg	pos	lethal
Mean	36.6	36.9	37.5
Standard deviation	0.3	0.56	1.1
95% CI	36.55-36.6	36.7-37.1	36.87-38.1
Interquartile range	36.5-36.6	36.6-36.9	36.6-38.3
Range	36-38.8	36.1-38.5	36.4-39.4
N	592	40	15

Table A12. Statistical data on patients' *age*

Parameters	neg	pos	lethal
Mean	35.7	54.5	55.7
Standard deviation	14.8	13.3	16.1
95% CI	34.5-36.9	50.2-58.8	46.5-65
Interquartile range	25-46	45-62	39.5-71
Range	0.2-85	33-83	29-76
N	592	40	15

Table A13. Categorical data statistics of the patients

Predictor	Category	neg	pos	lethal
Sex	Female	56.1%	37.5%	33.3%
	Male	43.9%	62.5%	66.7%
X-ray	No pathology	97.8%	60%	13.3%
	Cardiac ischemia	0.8%	10%	46.7%
	Hypertonic disease	0.7%	2.5%	33.3%
Comorbidities	Diabetes	0.3%	10%	20%
	COPD	1.9%	5%	6.7%
	Others	2.5%	10%	66.7%
	Pneumonia	1.4%	32.5%	40%
Complications	Acute cardiovascular failure	0%	0%	46.7%
	Others	0%	5%	66.7%

Table A14. Treatment prescribed to the patients

Medicine	neg	pos	lethal
Azithromycin	58.8%	67.5%	80%
Paracetamol	54%	50%	100%
Cephalosporins	13.2%	30%	93.3%
Fluoroquinolones	2.4%	17.5%	73.3%
Carbapenems	0%	7.5%	40%
Other types of antibiotics	0.3%	2.5%	33.3%
Antifungal medication	8.1%	7.5%	33.3%
Anticoagulants	0.5%	17.5%	80%
Dexamethasone	1.7%	20%	73.3%

Table A15. Data on all the false negative patients from the validation and the test sets

	P1	P2	P3	P4	P5
Age	37	45	**50**	48	46
Sex	M	M	M	F	M
Systolic blood pressure	100	120	100	**135**	110
Diastolic blood pressure	70	80	70	**85**	70
Heart rate	76	80	78	76	82
Breath rate	**22**	20	20	**22**	18
SpO2	96	98	96	**91**	**90**
Body temperature	36.6	36.7	36.6	36.5	36.6
Comorbidities	no	no	no	no	no
X-ray signs of pneumonia	no	no	no	no	no

The pdf threshold for the optimal model is -4.8695