

Supporting Material 1: Description of variables considered and their missing rate.

The table below describes the variables used for feature selection. It shows for each variable:

- Period is ADM, PRE, PER or POST whether the variable was considered before, during or after the hypotensive episode;
- Stat refers to the statistic used to represent samples present within the considered time window. It can be MINV, MEDV, MAXV or STDV standing for minimum, median, maximum value, and standard deviation respectively.
- Overall (survivors and non-survivors) quartiles;
- P-value from Mann-Whitney U test between survivors and non-survivors groups;
- Quartiles for survivors;
- Quartiles for non-survivors;
- Number of observation present in surviving group (maximum is 1526);
- Number of observation present in non-surviving group (maximum is 616);
- Overall rate of missing data;

Variables are sorted by decreasing p-value and those included in the final model are printed in bold.

Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
Glasgow Coma Scale (GCS)	POST		11.00 (8.00-15.00)	2.31E-46	13.50 (9.00-15.00)	9.00 (6.00-13.00)	1514	607	1.0
Sequential Organ Failure Assessment (SOFA)	POST		7.00 (4.00-10.00)	3.62E-45	6.00 (3.00-9.00)	10.00 (6.00-12.00)	1526	616	0.0
Simplified Acute Physiology Score (SAPS) I	POST		16.00 (13.00-20.00)	7.98E-44	15.00 (12.00-19.00)	19.00 (16.00-23.00)	1374	511	12.0
Urine Output (mL)	POST		1188.00 (624.75-1970.00)	9.00E-42	1368.00 (820.00-2130.00)	666.00 (175.00-1426.25)	1398	533	9.9
Blood Urea Nitrogen (mg/dL)	POST		30.00 (17.00-50.00)	1.92E-36	25.00 (15.00-43.00)	42.00 (26.00-65.25)	1427	581	6.3
Acute Physiology Score (APS)	ADM		50.00 (36.00-63.00)	1.34E-32	47.00 (33.00-59.00)	58.00 (44.00-74.00)	1526	616	0.0
Blood Urea Nitrogen (mg/dL)	PRE		29.00 (17.00-50.00)	9.24E-32	25.00 (15.00-43.00)	43.00 (24.00-67.25)	1230	513	18.6
International Normalized Ratio	POST		1.40 (1.20-1.90)	2.21E-29	1.30 (1.20-1.70)	1.70 (1.40-2.50)	995	487	30.8
Simplified Acute Physiology Score (SAPS) I	ADM		17.00 (13.00-20.00)	3.18E-29	16.00 (12.00-19.25)	19.00 (15.00-23.00)	1453	569	5.6
Lactate (mg/dL)	POST	MAX	2.10 (1.40-3.70)	5.20E-22	1.90 (1.30-2.80)	2.90 (1.70-6.40)	620	365	54.0

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Creatinine Clearance (ml/min)	POST		41.56 (26.54-66.05)	1.53E-21	48.23 (30.38-72.87)	31.07 (20.22-52.33)	971	451	33.6
Number of pressor used	PRE-PER		1.00 (0.00-1.00)	1.01E-20	0.00 (0.00-1.00)	1.00 (0.00-2.00)	1526	616	0.0
Creatinine (mg/dL)	POST		1.30 (0.80-2.30)	1.27E-20	1.10 (0.80-1.90)	1.80 (1.00-2.90)	1426	581	6.3
Van Walraven Score	ADM		10.00 (5.00-15.00)	2.78E-20	8.00 (3.00-14.00)	12.00 (7.00-17.00)	1526	616	0.0
Glasgow Coma Scale (GCS)	DELTA		0.00 (-0.50-1.00)	8.15E-20	0.00 (0.00-1.00)	0.00 (-2.00-0.00)	1434	577	6.1
Urine Output (mL)	PER		107.00 (45.00-240.00)	2.57E-19	120.00 (60.00-270.00)	66.00 (25.00-160.00)	1315	486	15.9
Creatinine Clearance (ml/min)	PRE		43.96 (26.40-69.70)	1.34E-17	49.55 (30.75-76.78)	32.99 (20.43-53.62)	851	396	41.8
International Normalized Ratio	PRE		1.50 (1.20-1.80)	4.40E-17	1.40 (1.20-1.70)	1.60 (1.30-2.40)	987	418	34.4
Sequential Organ Failure Assessment (SOFA)	PRE		0.00 (0.00-5.00)	5.01E-17	0.00 (0.00-4.00)	0.00 (0.00-8.00)	1526	616	0.0
Creatinine (mg/dL)	PRE		1.20 (0.80-2.20)	8.94E-17	1.10 (0.80-1.80)	1.70 (1.00-2.90)	1229	512	18.7
Phosphorus (mg/dL)	POST		3.60 (2.80-4.80)	2.47E-15	3.50 (2.70-4.40)	4.20 (3.10-5.70)	995	430	33.5
Renal Replacement Therapy	ADM		0.00 (0.00-0.00)	3.47E-15	0.00 (0.00-0.00)	0.00 (0.00-0.00)	1526	616	0.0
Breathing Rate (resp/min)	PRE	MIN	17.00 (14.00-22.00)	5.23E-15	17.00 (14.00-21.00)	19.00 (15.00-24.00)	1507	611	1.1
Temperature (°C)	POST		36.33 (35.83-36.89)	8.29E-15	36.44 (36.00-36.94)	36.11 (35.61-36.67)	1515	609	0.8
Arterial pH	POST		7.34 (7.27-7.39)	2.43E-14	7.35 (7.30-7.40)	7.30 (7.21-7.38)	944	474	33.8
Bilirubin (mg/dL)	PRE		1.10 (0.50-3.80)	3.39E-14	0.90 (0.40-2.09)	2.40 (0.75-9.70)	411	254	69.0
Platelets (10 ³ /µL)	POST		170.00 (102.00-249.00)	5.33E-13	178.00 (114.00-252.00)	137.50 (64.50-234.00)	1414	580	6.9
Bilirubin (mg/dL)	POST		1.40 (0.60-4.12)	6.16E-13	1.00 (0.50-2.77)	2.50 (0.70-8.70)	459	310	64.1
Urine Output (mL)	DELTA		255.00 (-226.75-970.00)	7.07E-12	1083.50	16.00 (-276.50-496.25)	1336	493	14.6
Glasgow Coma Scale (GCS)	PRE		14.00 (10.00-15.00)	1.10E-11	14.00 (10.00-15.00)	11.00 (8.00-15.00)	1445	586	5.2
Phosphorus (mg/dL)	PRE		3.70 (2.90-4.80)	1.31E-11	3.50 (2.80-4.40)	4.30 (3.10-5.50)	819	386	43.7
Oxygen Gradient (mmHg)	POST		173.75 (131.50-241.50)	2.25E-11	165.75 (124.75-228.50)	206.75 (144.50-272.12)	794	440	42.4
Breathing Rate (resp/min)	POST	MIN	18.00 (14.00-22.00)	4.00E-11	17.00 (14.00-21.00)	19.00 (16.00-24.00)	1504	611	1.3

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Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
Urine Output (mL)	PRE		717.00 (244.00-1570.00)	4.77E-11	820.00 (302.50-1685.00)	515.50 (150.00-1300.00)	1352	506	13.3
Partial Oxygen Arterial Pressure (mmHg)	DELTA		-24.00 (-142.25-18.00)	5.75E-11	-35.00 (-173.75-10.00)	-4.00 (-60.00-31.00)	775	366	46.7
Blood Urea Nitrogen (mg/dL)CreatR	POST		21.67 (15.38-29.09)	5.92E-11	20.37 (15.00-27.50)	24.00 (17.20-35.05)	1425	581	6.3
Saturation of Peripheral Oxygen (%)	PER	MIN	97.00 (94.00-98.00)	7.33E-11	97.00 (95.00-99.00)	96.00 (93.00-98.00)	1518	600	1.1
Breathing Rate (resp/min)	PER	MED	19.50 (16.00-24.00)	8.10E-11	19.00 (16.00-23.00)	20.50 (17.00-25.00)	1496	606	1.9
Saturation of Peripheral Oxygen (%)	PRE	MED	98.00 (96.00-100.00)	8.14E-11	98.00 (96.50-100.00)	97.50 (95.50-99.00)	1513	604	1.2
Platelets (10 ³ /µL)	PRE		176.00 (111.00-265.00)	9.41E-11	185.00 (126.00-270.00)	146.50 (70.00-252.00)	1231	506	18.9
Mechanical Ventilation	N.A.		1.00 (0.00-1.00)	1.21E-10	1.00 (0.00-1.00)	1.00 (1.00-1.00)	1526	616	0.0
Partial Oxygen Arterial Pressure (mmHg)	PRE		93.00 (74.00-129.00)	1.96E-10	97.50 (75.00-140.00)	84.00 (68.00-109.00)	930	406	37.6
Partial Arterial Oxygen Pressure to Fraction of Inspired Oxygen (PaO ₂ /FiO ₂)	POST		195.00 (142.00-265.00)	4.60E-10	205.00 (150.00-275.00)	174.64 (126.00-249.00)	794	440	42.4
Heart Rate to Systolic Blood Pressure Ratio (1/min/mmHg)	PER	MED	0.93 (0.77-1.10)	6.82E-10	0.91 (0.76-1.07)	0.99 (0.81-1.18)	1526	615	0.0
Lactate (mg/dL)	PRE		2.30 (1.50-3.80)	7.29E-10	2.10 (1.40-3.30)	2.80 (1.70-5.40)	624	310	56.4
Blood Urea Nitrogen (mg/dL)CreatR	PRE		22.00 (16.00-30.00)	2.09E-09	20.91 (15.69-28.75)	25.00 (17.26-35.44)	1229	512	18.7
Heart Rate to Systolic Blood Pressure Ratio (1/min/mmHg)	PRE	MIN	0.95 (0.79-1.14)	2.11E-09	0.93 (0.78-1.11)	1.02 (0.82-1.22)	1517	615	0.5
Saturation of Peripheral Oxygen (%)	PER	STD	0.98 (0.50-1.87)	3.14E-09	0.86 (0.45-1.70)	1.22 (0.58-2.16)	1518	600	1.1
Partial Arterial Oxygen Pressure to Fraction of Inspired Oxygen (PaO ₂ /FiO ₂)	PRE		196.00 (141.43-287.50)	4.06E-09	208.50 (150.50-303.88)	170.00 (122.00-246.00)	792	354	46.5
Simplified Acute Physiology Score (SAPS) I	PRE		15.00 (12.00-18.00)	8.02E-09	15.00 (12.00-18.00)	17.00 (14.00-20.00)	471	247	66.5

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Lactate (mg/dL)	DELTA	MAX	-0.20 (-1.10-0.50)	9.90E-09	-0.30 (-1.30-0.30)	0.10 (-0.50-1.20)	389	224	71.4
Heart Rate (beats/min)	PER	MAX	93.00 (80.00-107.00)	2.09E-08	91.00 (79.00-105.00)	97.00 (83.00-113.00)	1526	616	0.0
Heart Rate to Systolic Blood Pressure Ratio (1/min/mmHg)	POST	MAX	0.80 (0.66-0.96)	2.84E-08	0.78 (0.66-0.93)	0.85 (0.68-1.02)	1526	614	0.1
Partial Oxygen Arterial Pressure (mmHg)	POST		87.00 (70.00-109.00)	5.85E-08	90.00 (73.00-114.00)	80.00 (65.00-102.00)	924	474	34.7
Central Venous Pressure (mmHg)	PRE	MIN	8.00 (5.00-12.00)	7.03E-08	8.00 (5.00-11.00)	10.00 (7.00-14.00)	713	274	53.9
White Blood Cells count (x10 ⁹ /L)	POST		12.40 (8.90-17.80)	8.45E-08	11.95 (8.90-16.60)	14.35 (9.05-20.80)	1414	580	6.9
International Normalized Ratio	DELTA		0.00 (-0.20-0.10)	9.48E-08	0.00 (-0.20-0.10)	0.00 (-0.10-0.30)	706	348	50.8
Chloride (mEq/L)	PRE		106.00 (101.00-110.00)	1.85E-07	107.00 (102.00-111.00)	104.00 (99.00-110.00)	1003	401	34.5
Partial Carbon Dioxide Arterial Pressure (mmHg)	POST		35.00 (30.00-40.00)	3.35E-07	36.00 (31.00-40.00)	34.00 (28.00-39.00)	924	474	34.7
Heart Rate (beats/min)	PRE	MIN	83.00 (71.00-97.00)	4.16E-07	82.00 (70.00-95.00)	88.00 (74.00-100.50)	1526	616	0.0
Temperature (°C)	PRE		36.33 (35.72-36.94)	1.61E-06	36.39 (35.80-37.00)	36.11 (35.56-36.83)	1489	595	2.7
Heart Rate (beats/min)	POST	MAX	94.00 (80.00-107.00)	3.84E-06	92.00 (80.00-105.00)	97.00 (83.00-112.00)	1526	615	0.0
Glucose (mg/dL)	POST		140.00 (114.00-177.00)	3.89E-06	137.00 (112.50-171.00)	148.00 (119.00-190.00)	1448	584	5.1
Mean Arterial Blood Pressure (mmHg)	PER	MED	58.50 (56.00-61.00)	5.07E-06	59.00 (56.00-61.33)	58.00 (55.00-60.00)	1526	615	0.0
Time from admission to hypotensive episode onset (hours)	N.A.		14.67 (5.42-52.58)	5.73E-06	12.95 (5.30-40.75)	23.27 (5.91-83.13)	1526	616	0.0
Age (yrs)	ADM		71.55 (59.60-80.80)	8.25E-06	70.90 (58.85-79.40)	73.80 (62.00-83.10)	1447	587	5.0
Oxygen Gradient (mmHg)	PRE		183.75 (132.31-259.50)	9.41E-06	175.38 (123.25-247.88)	214.25 (149.06-291.50)	792	353	46.5
Systolic Arterial Blood Pressure (mmHg)	PER	MED	93.00 (87.00-101.00)	1.14E-05	93.50 (87.50-101.50)	91.50 (85.00-99.00)	1526	615	0.0

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Chloride (mEq/L)	POST		107.00 (103.00-110.00)	1.58E-05	107.00 (104.00-111.00)	106.00 (100.00-110.00)	1118	446	27.0
Mean Arterial Blood Pressure (mmHg)	POST	MED	66.00 (62.17-71.00)	1.93E-05	66.50 (62.50-71.50)	65.50 (61.50-70.00)	1526	615	0.0
Saturation of Peripheral Oxygen (%)	POST	MIN	96.00 (94.00-98.00)	2.40E-05	97.00 (95.00-98.00)	96.00 (93.00-98.00)	1514	599	1.4
White Blood Cells count (x10 ⁹ /L)	DELTA		-0.30 (-3.10-2.20)	2.72E-05	-0.70 (-3.38-1.80)	0.20 (-2.50-3.20)	1103	474	26.4
Arterial pH	DELTA		0.01 (-0.04-0.06)	2.78E-05	0.01 (-0.03-0.06)	-0.01 (-0.07-0.06)	792	366	45.9
Central Venous Pressure (mmHg)	POST	MIN	9.00 (6.00-13.00)	5.75E-05	9.00 (6.00-12.00)	10.00 (7.00-14.50)	807	336	46.6
Simplified Acute Physiology Score (SAPS) I	DELTA		0.00 (-3.00-3.00)	6.05E-05	0.00 (-3.00-2.00)	1.00 (-2.00-4.00)	454	229	68.1
Magnesium (mg/dL)	PRE		1.90 (1.70-2.20)	7.25E-05	1.90 (1.70-2.20)	2.00 (1.70-2.30)	890	397	39.9
Systolic Arterial Blood Pressure (mmHg)	POST	MED	104.00 (95.50-113.00)	8.89E-05	105.00 (96.50-114.00)	102.00 (94.00-111.00)	1526	615	0.0
Glucose (mg/dL)	DELTA		-5.00 (-33.00-28.00)	1.15E-04	-6.00 (-34.00-23.00)	3.00 (-30.00-44.00)	1236	497	19.1
Potassium (mg/dL)	POST		4.30 (3.90-4.70)	3.01E-04	4.20 (3.90-4.70)	4.30 (4.00-4.90)	1447	585	5.1
Central Venous Pressure (mmHg)	PRE	STD	1.59 (0.82-2.63)	3.02E-04	1.71 (0.96-2.65)	1.41 (0.58-2.16)	713	274	53.9
Arterial pH	PRE		7.34 (7.27-7.39)	3.34E-04	7.34 (7.28-7.39)	7.32 (7.23-7.39)	935	408	37.3
Bilirubin (mg/dL)	DELTA		0.00 (-0.40-0.60)	3.51E-04	0.00 (-0.40-0.40)	0.10 (-0.22-1.50)	226	169	81.6
Systolic Arterial Blood Pressure (mmHg)	PRE	MIN	88.00 (81.00-95.00)	4.01E-04	88.00 (81.00-95.00)	86.00 (78.00-94.00)	1517	615	0.5
Mean Arterial Blood Pressure (mmHg)	PRE	STD	8.18 (5.12-12.31)	7.46E-04	8.50 (5.52-12.73)	7.41 (4.54-11.19)	838	357	44.2
Saturation of Peripheral Oxygen (%)	PRE	STD	1.00 (0.52-1.99)	8.69E-04	1.00 (0.50-1.89)	1.17 (0.58-2.11)	1513	604	1.2
Magnesium (mg/dL)	POST		2.10 (1.90-2.40)	8.70E-04	2.10 (1.90-2.30)	2.20 (2.00-2.40)	1087	441	28.7
Central Venous Pressure (mmHg)	PER	MAX	13.00 (9.00-17.00)	8.74E-04	12.00 (9.00-16.00)	13.00 (9.00-19.00)	759	318	49.7
Saturation of Peripheral Oxygen (%)	POST	STD	1.00 (0.50-1.76)	9.43E-04	0.96 (0.50-1.73)	1.15 (0.55-2.06)	1514	599	1.4
Blood Urea Nitrogen (mg/dL)	DELTA		0.00 (-4.00-4.00)	1.32E-03	0.00 (-4.00-3.13)	1.00 (-3.50-5.88)	1153	487	23.4

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Heart Rate - Diastolic Blood Pressure product (1/min/mmHg)	PER	MAX	9900.00 (8306.00-11640.00)	1.38E-03	9767.50 (8190.00-11556.00)	10283.00 (8490.50-11927.25)	1526	615	0.0
Potassium (mg/dL)	PRE		3.80 (3.50-4.20)	1.47E-03	3.80 (3.50-4.20)	3.90 (3.50-4.40)	1301	524	14.8
Hypotensive Episode Length (hrs)	N.A.		1.75 (1.00-3.00)	1.53E-03	1.50 (1.00-3.00)	2.00 (1.00-3.75)	1526	616	0.0
Hemoglobin (g/dL)	POST		9.60 (8.80-10.50)	1.76E-03	9.70 (8.90-10.50)	9.50 (8.60-10.50)	1414	577	7.0
Pulse Pressure (mmHg)	PER	MED	52.00 (43.50-62.00)	3.17E-03	52.50 (44.00-62.50)	50.25 (42.00-60.50)	1521	614	0.3
Hematocrit (%)	DELTA		-0.90 (-3.30-1.70)	3.31E-03	-0.80 (-3.10-1.90)	-1.20 (-3.73-1.00)	1231	493	19.5
Partial Carbon Dioxide Arterial Pressure (mmHg)	PRE		40.00 (35.00-45.00)	4.42E-03	40.00 (36.00-45.00)	39.00 (33.00-45.00)	930	406	37.6
White Blood Cells count (x10 ⁹ /L)	PRE		12.60 (8.79-17.80)	4.69E-03	12.35 (8.70-17.04)	13.60 (8.90-19.70)	1179	502	21.5
Creatinine (mg/dL)	DELTA		0.00 (-0.10-0.20)	4.84E-03	0.00 (-0.10-0.15)	0.00 (-0.10-0.30)	1151	486	23.6
Creatinine Clearance (ml/min)	DELTA		0.00 (-5.81-4.02)	5.32E-03	0.00 (-6.14-5.57)	-0.35 (-5.64-1.91)	763	365	47.3
Mean Arterial Blood Pressure (mmHg)	PRE	MIN	56.00 (52.00-58.33)	5.93E-03	56.00 (52.00-58.67)	55.00 (51.00-58.00)	1520	615	0.3
Saturation of Peripheral Oxygen (%)	DELTA	MAX	0.00 (-1.00-1.00)	6.14E-03	0.00 (-1.00-0.00)	0.00 (-1.00-1.00)	1504	593	2.1
Systolic Arterial Blood Pressure (mmHg)	PRE	STD	12.31 (7.77-18.67)	7.59E-03	12.80 (7.93-19.06)	10.98 (7.05-16.95)	844	358	43.9
Oxygen Gradient (mmHg)	DELTA		-42.00 (-155.75-28.56)	9.55E-03	-50.25 (-176.25-20.00)	-24.25 (-134.56-40.19)	656	329	54.0
Heart Rate - Diastolic Blood Pressure product (1/min/mmHg)	PRE	MED	9024.00 (7656.00-10640.00)	1.07E-02	8957.25 (7638.00-10530.00)	9310.00 (7763.00-10937.50)	1526	616	0.0
Sequential Organ Failure Assessment (SOFA)	DELTA		4.00 (1.00-8.00)	1.13E-02	4.00 (1.00-8.00)	4.00 (0.00-10.00)	1526	616	0.0
Pulse Pressure (mmHg)	PRE	MED	54.50 (45.00-66.00)	1.16E-02	55.00 (45.75-66.00)	52.88 (43.75-65.00)	1526	616	0.0
Cardiac Index (L/min/m ²)	PER	MAX	2.38 (1.91-2.99)	1.31E-02	2.32 (1.89-2.93)	2.50 (1.96-3.23)	839	333	45.3
Estimated Cardiac Output (-)	POST	MIN	30.05 (24.27-36.38)	1.44E-02	29.78 (24.12-36.00)	31.26 (24.58-37.29)	1521	604	0.8
Difference with Ideal weight	ADM		15.39 (4.12-28.45)	1.57E-02	15.77 (5.29-29.16)	14.13 (2.13-25.26)	839	334	45.2
Cardiac Index (L/min/m ²)	POST	MIN	2.09 (1.69-2.65)	1.64E-02	2.06 (1.66-2.62)	2.16 (1.76-2.80)	837	325	45.8

Dynamic data during hypotensive episode improves mortality predictions among patients with sepsis and hypotension

Supporting Material 1: Description of variables considered and their missing rate.

Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
Estimated Cardiac Output (-)	PRE	MIN	31.40 (25.37-38.83)	1.95E-02	31.01 (25.02-38.23)	32.24 (25.90-40.44)	1509	615	0.8
Mean Arterial Blood Pressure (mmHg)	DELTA	STD	-1.70 (-5.62-1.45)	2.11E-02	-2.08 (-5.79-1.20)	-1.22 (-5.07-2.36)	825	353	45.0
Cardiac Index (L/min/m^2)	PRE	MED	2.26 (1.83-2.83)	2.17E-02	2.23 (1.80-2.80)	2.35 (1.85-2.92)	839	334	45.2
Partial Carbon Dioxyde Arterial Pressure (mmHg)	DELTA		-1.00 (-7.00-4.00)	2.30E-02	-2.00 (-7.00-3.00)	-1.00 (-6.00-6.00)	775	366	46.7
Phosphorus (mg/dL)	DELTA		-0.10 (-0.70-0.55)	2.35E-02	-0.10 (-0.70-0.45)	0.10 (-0.70-0.70)	740	357	48.8
Weight (kg)	ADM		77.00 (64.25-91.27)	2.48E-02	77.40 (65.00-92.00)	75.00 (63.00-89.58)	1420	595	5.9
Pulse Pressure (mmHg)	POST	MED	55.50 (46.50-67.50)	2.73E-02	56.25 (47.00-67.50)	55.00 (45.00-66.75)	1525	614	0.1
Central Venous Pressure (mmHg)	POST	STD	1.52 (0.71-2.52)	2.75E-02	1.60 (0.82-2.62)	1.34 (0.58-2.43)	807	336	46.6
Diastolic Arterial Blood Pressure (mmHg)	POST	MED	47.50 (42.00-53.00)	2.78E-02	47.75 (42.50-53.25)	47.00 (41.50-52.50)	1526	615	0.0
Heart Rate (beats/min)	PER	STD	3.58 (2.06-6.29)	2.79E-02	3.54 (2.00-6.12)	3.91 (2.12-6.77)	1526	616	0.0
Breathing Rate (resp/min)	PRE	STD	2.59 (1.41-4.15)	2.80E-02	2.65 (1.50-4.15)	2.50 (1.15-4.19)	1507	611	1.1
Estimated Cardiac Output (-)	PER	MAX	33.80 (27.31-41.45)	3.11E-02	33.46 (27.10-40.51)	34.68 (27.94-42.74)	1525	613	0.2
Systolic Arterial Blood Pressure (mmHg)	POST	STD	9.57 (6.06-14.80)	3.25E-02	9.76 (6.36-15.30)	9.10 (5.64-13.67)	916	407	38.2
Body Surface (m^2)	ADM		14.18 (13.01-15.44)	3.25E-02	14.30 (13.08-15.52)	13.95 (12.91-15.33)	839	334	45.2
Chloride (mEq/L)	DELTA		1.00 (-2.00-3.00)	3.41E-02	1.00 (-2.00-3.00)	1.00 (-1.00-3.00)	942	378	38.4
Potatium (mg/dL)	DELTA		0.00 (-0.40-0.40)	4.04E-02	-0.10 (-0.50-0.30)	0.00 (-0.40-0.40)	1238	501	18.8
Breathing Rate (resp/min)	DELTA	STD	-0.17 (-1.74-1.25)	4.14E-02	-0.27 (-1.79-1.20)	0.00 (-1.52-1.43)	1498	607	1.7
Temperature (°C)	DELTA	MED	0.11 (-0.39-0.64)	4.44E-02	0.11 (-0.36-0.67)	0.06 (-0.44-0.58)	1479	588	3.5
Partial Arterial Oxygen Pressure to Fraction of Inspired Oxygen (PaO2/FiO2)	DELTA		-2.00 (-80.63-62.69)	4.80E-02	-3.67 (-93.00-60.50)	2.00 (-58.75-70.00)	656	329	54.0
Diastolic Arterial Blood Pressure (mmHg)	DELTA	MED	1.00 (-4.25-6.75)	5.47E-02	1.50 (-4.00-6.75)	0.50 (-5.00-6.44)	1526	615	0.0
Mean Arterial Blood Pressure (mmHg)	DELTA	MED	1.50 (-3.83-7.00)	6.93E-02	1.83 (-3.50-7.33)	1.16 (-4.17-6.17)	1526	615	0.0
Cardiac Output (L/min)	POST	MED	5.93 (4.90-7.36)	7.28E-02	5.97 (5.00-7.40)	5.80 (4.58-7.33)	391	149	74.8
Heart Rate (beats/min)	DELTA	MIN	-1.00 (-7.00-4.00)	7.67E-02	-1.00 (-6.00-4.00)	-1.00 (-7.75-3.00)	1526	615	0.0

Dynamic data during hypotensive episode improves mortality predictions among patients with sepsis and hypotension

Supporting Material 1: Description of variables considered and their missing rate.

Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
Peak Expiratory Flow (L/min)	ADM		487.94 (411.70-559.82)	7.81E-02	490.33 (414.41-564.23)	482.24 (406.12-549.98)	800	320	47.7
Heart Rate - Diastolic Blood Pressure product (1/min/mmHg)	POST	MAX	10751.00 (9016.00-12738.50)	8.39E-02	10687.00 (8970.00-12720.00)	10970.00 (9216.00-12862.00)	1526	614	0.1
Hematocrit (%)	POST		30.60 (28.30-33.10)	9.24E-02	30.50 (28.30-33.00)	30.80 (28.20-33.60)	1442	585	5.4
Diastolic Arterial Blood Pressure (mmHg)	PER	MIN	37.50 (32.00-42.00)	9.64E-02	37.50 (32.50-42.00)	37.00 (31.00-41.50)	1517	613	0.6
Hemoglobin (g/dL)	DELTA		-0.30 (-1.10-0.40)	1.15E-01	-0.40 (-1.10-0.40)	-0.20 (-1.00-0.50)	1114	472	26.0
Hematocrit (%)	PRE		28.80 (25.80-32.00)	1.17E-01	28.70 (25.80-32.00)	29.10 (25.90-32.10)	1294	519	15.4
Systolic Ejection Volume (L)	PRE	MED	0.37 (0.31-0.43)	1.19E-01	0.37 (0.31-0.43)	0.36 (0.30-0.43)	1526	616	0.0
Calcium (mg/dL)	POST		7.90 (7.40-8.40)	1.20E-01	7.90 (7.40-8.40)	7.80 (7.40-8.30)	974	426	34.6
Sodium (mg/dL)	DELTA		0.00 (-1.00-2.00)	1.23E-01	0.00 (-1.00-2.00)	0.00 (-2.00-2.00)	1198	491	21.1
Diastolic Arterial Blood Pressure (mmHg)	PRE	MIN	39.00 (34.00-43.00)	1.30E-01	39.00 (34.00-43.00)	38.50 (33.00-43.00)	1515	615	0.6
Heart Rate - Diastolic Blood Pressure product (1/min/mmHg)	DELTA	MED	53.75 (-1011.38-1034.75)	1.34E-01	70.75 (-949.50-1060.50)	13.00 (-1185.00-977.75)	1526	614	0.1
Platelets (10 ³ /µL)	DELTA		-9.00 (-36.00-14.00)	1.41E-01	-9.00 (-36.00-16.50)	-8.00 (-38.00-10.00)	1148	478	24.1
Systolic Ejection Volume (L)	PER	MED	0.39 (0.33-0.46)	1.83E-01	0.39 (0.33-0.46)	0.38 (0.32-0.45)	1521	614	0.3
Breathing Rate (resp/min)	DELTA	MED	0.00 (-2.50-2.50)	1.93E-01	0.00 (-2.00-2.50)	0.00 (-2.50-2.00)	1498	607	1.7
Systolic Arterial Blood Pressure (mmHg)	DELTA	MAX	1.00 (-10.00-13.00)	1.93E-01	2.00 (-10.00-14.00)	0.00 (-11.00-12.00)	1526	615	0.0
Sodium (mg/dL)	POST		138.00 (135.00-142.00)	2.02E-01	138.00 (135.00-141.00)	138.00 (134.00-142.00)	1429	581	6.2
Breathing Rate (resp/min)	PER	STD	2.12 (1.04-3.69)	2.09E-01	2.12 (1.03-3.59)	2.29 (1.12-3.89)	1496	606	1.9
Cardiac Output (L/min)	PRE		4.90 (3.86-6.55)	2.23E-01	5.00 (3.94-6.57)	4.81 (3.30-6.26)	348	106	78.8
Heart Rate (beats/min)	PRE	STD	4.08 (2.22-6.95)	2.25E-01	4.25 (2.31-6.95)	3.77 (2.16-6.86)	1526	616	0.0
Calcium (mg/dL)	PRE		8.10 (7.60-8.70)	2.39E-01	8.10 (7.60-8.60)	8.20 (7.60-8.80)	810	381	44.4
Mean Arterial Blood Pressure (mmHg)	POST	STD	5.87 (3.87-9.35)	2.40E-01	5.98 (4.03-9.56)	5.71 (3.61-8.90)	911	405	38.6
Calcium (mg/dL)	DELTA		-0.10 (-0.50-0.30)	2.45E-01	0.00 (-0.50-0.30)	-0.10 (-0.55-0.30)	728	352	49.6
Systolic Arterial Blood Pressure (mmHg)	DELTA	STD	-2.14 (-7.99-2.80)	3.36E-01	-2.24 (-8.25-2.72)	-1.99 (-7.33-3.02)	830	354	44.7
Magnesium (mg/dL)	DELTA		0.00 (-0.20-0.20)	3.40E-01	0.00 (-0.20-0.30)	0.00 (-0.20-0.20)	825	370	44.2

Dynamic data during hypotensive episode improves mortality predictions among patients with sepsis and hypotension

Supporting Material 1: Description of variables considered and their missing rate.

Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
GENDER (Male==1)	ADM		1.00 (1.00-2.00)	3.89E-01	1.00 (1.00-2.00)	1.00 (1.00-2.00)	1525	616	0.0
Pulse Pressure (mmHg)	DELTA	MAX	1.50 (-10.50-12.00)	3.95E-01	1.50 (-10.50-12.00)	1.25 (-10.50-11.00)	1513	610	0.9
Invasive Mean Arterial Blood Pressure (mmHg)	PRE	STD	7.61 (4.37-11.70)	4.05E-01	7.42 (4.48-11.64)	8.14 (4.04-12.31)	990	393	35.4
Heart Rate (beats/min)	DELTA	STD	-0.27 (-2.71-1.96)	4.09E-01	-0.31 (-2.74-1.89)	-0.17 (-2.63-2.02)	1526	615	0.0
Systolic Arterial Blood Pressure (mmHg)	PER	STD	10.48 (6.34-16.40)	4.09E-01	10.61 (6.36-16.99)	10.26 (6.32-15.14)	877	372	41.7
Sodium (mg/dL)	PRE		139.00 (136.00-142.00)	4.30E-01	139.00 (136.00-142.00)	139.00 (135.00-143.00)	1275	517	16.3
Hemoglobin (g/dL)	PRE		9.90 (8.90-10.90)	4.55E-01	9.90 (9.00-11.00)	9.80 (8.80-10.80)	1190	502	21.0
Central Venous Pressure (mmHg)	DELTA	STD	0.00 (-1.07-1.10)	4.71E-01	0.00 (-1.10-1.10)	0.03 (-0.96-1.10)	683	259	56.0
Invasive Systolic Arterial Blood Pressure (mmHg)	POST	STD	7.07 (3.79-10.88)	4.77E-01	7.04 (3.78-10.72)	7.27 (3.81-11.59)	983	378	36.5
Cardiac Output (L/min)	DELTA	MAX	0.55 (-0.62-1.70)	4.97E-01	0.60 (-0.52-1.77)	0.38 (-0.91-1.59)	308	94	81.2
Fluid administred (mL)	PER		1750.00 (750.00-3500.00)	4.99E-01	1650.00 (750.00-3500.00)	2000.00 (525.00-3750.00)	1526	616	0.0
Systolic Ejection Volume (L)	POST	MED	0.37 (0.31-0.43)	5.25E-01	0.37 (0.31-0.43)	0.37 (0.31-0.43)	1525	613	0.2
Glucose (mg/dL)	PRE		112.00 (91.00-139.00)	5.42E-01	112.00 (92.00-139.00)	113.00 (89.00-138.00)	1299	521	15.0
Invasive Mean Arterial Blood Pressure (mmHg)	PER	STD	6.12 (3.77-9.43)	5.87E-01	6.15 (3.80-9.49)	6.05 (3.76-9.19)	1007	398	34.4
Blood Urea Nitrogen (mg/dL)CreatR	DELTA		-0.25 (-3.07-2.00)	6.34E-01	-0.12 (-3.23-2.18)	-0.43 (-2.63-1.45)	1150	486	23.6
Cardiac Index (L/min/m ²)	DELTA	MED	-0.04 (-0.34-0.27)	6.93E-01	-0.03 (-0.34-0.27)	-0.04 (-0.36-0.29)	839	332	45.3
Mean Arterial Blood Pressure (mmHg)	PER	STD	6.50 (3.95-10.61)	6.98E-01	6.50 (3.87-10.96)	6.51 (4.04-10.21)	868	370	42.2
Invasive Systolic Arterial Blood Pressure (mmHg)	PRE	STD	9.18 (4.90-15.26)	7.01E-01	9.25 (4.94-15.12)	8.97 (4.48-15.57)	991	393	35.4
Systolic Ejection Volume (L)	DELTA	MIN	-0.01 (-0.07-0.04)	7.02E-01	-0.01 (-0.07-0.04)	-0.01 (-0.07-0.04)	1503	602	1.7
Invasive Mean Arterial Blood Pressure (mmHg)	POST	STD	5.11 (2.87-8.46)	7.17E-01	5.16 (2.82-8.21)	5.03 (2.98-8.82)	981	377	36.6
Heart Rate to Systolic Blood Pressure Ratio (1/min/mmHg)	DELTA	MAX	-0.03 (-0.13-0.07)	7.46E-01	-0.03 (-0.12-0.06)	-0.03 (-0.15-0.09)	1526	614	0.1

Dynamic data during hypotensive episode improves mortality predictions among patients with sepsis and hypotension

Supporting Material 1: Description of variables considered and their missing rate.

Variable	Time Window	Operator	Median (IQ 25-75)	P-value	Median Alive (IQ 25-75)	Median Dead (IQ 25-75)	Survivors Size	Non-survivors Size	Percentage of missing data
Saturation of Peripheral Oxygen (%)	DELTA	STD	0.00 (-0.72-0.70)	7.76E-01	0.00 (-0.71-0.68)	0.00 (-0.76-0.75)	1504	593	2.1
Invasive Mean Arterial Blood Pressure (mmHg)	DELTA	STD	-2.29 (-6.95-1.49)	7.87E-01	-2.31 (-6.92-1.52)	-2.13 (-7.11-1.29)	905	347	41.5
Central Venous Pressure (mmHg)	PER	STD	1.53 (0.71-2.81)	8.17E-01	1.53 (0.71-2.72)	1.48 (0.58-2.88)	759	318	49.7
Breathing Rate (resp/min)	POST	STD	2.35 (1.26-3.87)	8.27E-01	2.30 (1.26-3.79)	2.38 (1.26-3.91)	1504	611	1.3
Estimated Cardiac Output (-)	DELTA	MED	-0.64 (-5.11-3.60)	8.61E-01	-0.59 (-5.27-3.53)	-0.85 (-4.98-3.78)	1525	613	0.2
Central Venous Pressure (mmHg)	DELTA	MIN	1.00 (-1.00-3.00)	9.24E-01	1.00 (-1.00-3.00)	1.00 (-1.00-3.00)	683	259	56.0
Invasive Systolic Arterial Blood Pressure (mmHg)	PER	STD	7.88 (4.58-12.40)	9.26E-01	7.86 (4.53-12.44)	7.96 (4.72-12.40)	1011	398	34.2
Height (cm)	ADM		167.64 (160.02-177.80)	9.33E-01	170.18 (160.02-177.80)	167.64 (160.02-177.80)	843	337	44.9
Invasive Systolic Arterial Blood Pressure (mmHg)	DELTA	STD	-2.33 (-8.16-2.64)	9.92E-01	-2.45 (-7.93-2.68)	-1.97 (-9.13-2.50)	907	348	41.4
Heart Rate (beats/min)	POST	STD	3.74 (2.17-6.15)	9.97E-01	3.79 (2.22-6.06)	3.60 (2.08-6.34)	1526	615	0.0

Dynamic data during hypotensive episode improves mortality predictions among patients with sepsis and hypotension