Takuro Endo; Prehospital NEWS in Japan

Supplementary Table 1. Scoring system of NEWS.

Physiological parameters	+3	+2	+1	0	+1	+2	+3
Respiration Rate	≦8		9～11	12～20		21～24	25≦
Oxygen Saturations	≦91	92～93	94～95	≧96			
Any Supplemental Oxygen		Yes		No			
Temperature	≦35.0		35.1～36.0	36.1～38.0	38.1～39.0	39.1≦	
Systolic Blood Pressure	≦90	91～100	101～110	111～219			220≦
Heart rate	≦40		41～50	51～90	91～110	111～130	131≦
Level of Consciousness				Alert			V.P.U

NEWS: National Early Warning Score

V: voice responsive

P: pain responsive

U: unconscious

Takuro Endo; Prehospital NEWS in Japan

Supplementary Table 2. Coordinate points of the ROC curves in Figure 2 (main text) with corresponding sensitivity and specificity.

Score	Admitted to a ward or admitted to the ICU or died in ED (C = 0.733)		Admitted to the ICU or died in ED (C = 0.807)		Died in ED (C = 0.900)	
	Sensitivity	1 - Specificity	Sensitivity	1 - Specificity	Sensitivity	1 - Specificity
-1.00	1.000	1.000	1.000	1.000	1.000	1.000
0.50	0.958	0.853	0.992	0.901	1.000	0.908
1.50	0.917	0.725	0.984	0.812	1.000	0.826
2.50	0.865	0.614	0.972	0.726	1.000	0.746
3.50	0.768	0.465	0.949	0.595	1.000	0.623
4.50	0.688	0.359	0.909	0.497	1.000	0.530
5.50	0.586	0.247	0.835	0.388	1.000	0.423
6.50	0.502	0.163	0.764	0.303	1.000	0.339
7.50	0.417	0.111	0.685	0.234	1.000	0.268
8.50	0.328	0.066	0.598	0.167	0.909	0.200
9.50	0.243	0.038	0.476	0.115	0.636	0.143
10.50	0.188	0.025	0.402	0.083	0.545	0.108
11.50	0.132	0.014	0.335	0.051	0.500	0.073
12.50	0.096	0.010	0.268	0.035	0.409	0.053
13.50	0.068	0.008	0.185	0.025	0.273	0.038
14.50	0.042	0.004	0.098	0.017	0.227	0.023
15.50	0.026	0.000	0.075	0.008	0.136	0.013

Takuro Endo; Prehospital NEWS in Japan

16.50	0.013	0.000	0.043	0.003	0.045	0.006
17.50	0.004	0.000	0.012	0.001	0.000	0.002
18.50	0.003	0.000	0.004	0.001	0.000	0.001
19.50	0.002	0.000	0.004	0.001	0.000	0.001

ROC: receiver operating characteristics

ED: emergency department

ICU: intensive care unit

Because there is no principled statistical criterion for selecting an optimal cutoff point without information on "cost", we carefully chose the cut points (4.5 and 6.5) from the combinations of three sets of sensitivity and 1 - specificity presented in Supplement Table 4 from a clinical practice viewpoint. As a starting point, we calculated Youden's index, which is defined as a difference between sensitivity and 1 - specificity, or "sensitivity + specificity - 1"; we found the following values to be considered as candidate cut points for NEWS:

	Youden's index		
Cut point	Ward/ICU/Death	ICU/Death	Death
3.5	0.303	0.354	0.377
4.5	0.329	0.412	0.47
5.5	0.339	0.447	0.577
6.5	0.339	0.461	0.661
7.5	0.306	0.451	0.732
8.5	0.262	0.431	0.709

3

Takuro Endo; Prehospital NEWS in Japan

For a "high/middle-risk" cut point, sensitivity for death and ICU admission is crucial. Among the values lower than 7.5 (sensitivity of 1 for death), we chose a value 6.5 because relatively higher sensitivity of ICU admission or death (about 3/4, or 75%).

Next, we considered that a "middle/low-risk" cut point should have had high sensitivity for a ward admission and minimal degree of specificity, e.g., over 50%-60%. Such points may be 3.5 or 4.5; we chose 4.5 because it has a better balance of sensitivity and specificity for ICU admission, too.

4

Takuro Endo; Prehospital NEWS in Japan

Supplementary Table 3. Breakdown of number of presentations by AMPDS category.

All patients			Discharged from ED			Admitted to a ward			Admitted to the ICU			Died in ED		
Category	%	Cases	Category	%	Cases	Category	%	Cases	Category	%	Cases	Category	%	Cases
Sick Person	19.8	564	Sick Person	24	319	Breathing Difficulty	17.5	221	Subject Unconscious	28	65	Subject Unconscious	50	11
Subject Unconscious	13.8	392	Traumatic Injuries	11.1	148	Sick Person	17.4	220	Breathing Difficulty	18.1	42	Sick Person	22.7	5
Breathing Difficulty	13.3	379	Breathing Difficulty	8.6	114	Subject Unconscious	16	202	Chest Pain	8.6	20	Chest Pain	13.6	3
Traumatic Injuries	8.3	236	Subject Unconscious	8.6	114	Stroke	10.6	134	Sick Person	8.6	20	Breathing Difficulty	9.1	2
Stroke	7.4	212	Abdominal Pain	7.5	100	Traumatic Injuries	6.4	81	Abdominal Pain	6	14	Psychiatric Problem	4.5	1
Abdominal Pain	6.6	187	Hemorrhage	7.2	96	Abdominal Pain	5.8	73	Traffic Collision	6	14	-	-	-
Hemorrhage	5.9	169	Chest Pain	6.3	84	Hemorrhage	5.4	68	Overdose	4.7	11	-	-	-
Chest Pain	5.9	167	Headache	6	80	Chest Pain	4.8	60	Stroke	4.3	10	-	-	-
Headache	4.1	117	Stroke	5.1	68	Overdose	4	51	Back Pain	3	7	-	-	-
Back Pain	3.3	93	Back Pain	4.1	54	Headache	2.9	36	Seizures	3	7	-	-	-
Overdose	3.1	89	Heart Problem	3.1	41	Back Pain	2.5	32	Traumatic Injuries	3	7	-	-	-
Seizures	2.4	68	Seizures	2.8	37	Seizures	1.9	24	Hemorrhage	2.2	5	-	-	-

5

Takuro Endo; Prehospital NEWS in Japan

Heart Problem	1.7	48	Overdose	2	27	Traffic Collision	1.7	22	Choking	1.7	4	-	-	-
Traffic Collision	1.7	48	Traffic Collision	0.9	12	Choking	0.6	8	Falls	0.9	2	-	-	-
Choking	0.5	15	Eye Problem	0.7	9	Heart Problem	0.5	6	Burn Subject	0.4	1	-	-	-
Burn Subject	0.4	12	Stab Gunshot Penetrating	0.5	7	Psychiatric Problem	0.5	6	Drowning	0.4	1	-	-	-
Eye Problem	0.4	11	Burn Subject	0.5	6	Burn Subject	0.4	5	Headache	0.4	1	-	-	-
Psychiatric Problem	0.4	10	Assault	0.2	3	Falls	0.3	4	Heart Problem	0.4	1	-	-	-
Stab Gunshot Penetrating	0.4	10	Choking	0.2	3	Drowning	0.2	3	-	-	-	-	-	-
Falls	0.2	7	Psychiatric Problem	0.2	3	Stab Gunshot Penetrating	0.2	3	-	-	-	-	-	-
Drowning	0.2	5	Allergic Reaction	0.2	2	Eye Problem	0.2	2	-	-	-	-	-	-
Assault	0.1	3	Diabetic Problems	0.1	1	Diabetic Problems	0.1	1	-	-	-	-	-	-
Allergic Reaction	0.1	2	Drowning	0.1	1	Environmental Exposure	0.1	1	-	-	-	-	-	-
Diabetic	0.1	2	Falls	0.1	1	-	-	-	-	-	-	-	-	-

6

Supplemental material

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Problems															
Environmental Exposure	0	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	100	2847	Total	100	1330	Total	100	1263	Total	100	232	Total	100	22

7

Takuro Endo; Prehospital NEWS in Japan

Supplementary Table 4. Summary statistics of prehospital NEWS by patient dispositions.

		Patient disposition			
	All (n=2,847)	Discharged from ED (*n* = 1330)	Admitted to a ward (*n* = 1263)	Admitted to the ICU (*n* = 232)	Died in ED (*n* = 22)
Median	5	3	6	9	11.5
Range	0-20	0-15	0-20	0-20	8-17
Mean±SD	5.4±3.9	3.7±2.9	6.3±3.8	9.4±4.0	11.7±2.9

NEWS: National Early Warning Score

ED: emergency department

ICU: intensive care unit

SD: standard deviation

8