GiViTI

Gruppo Italiano per la Valutazione degli Interventi In Terapia Intensiva

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Report
CREACTIVE project

Year 2018

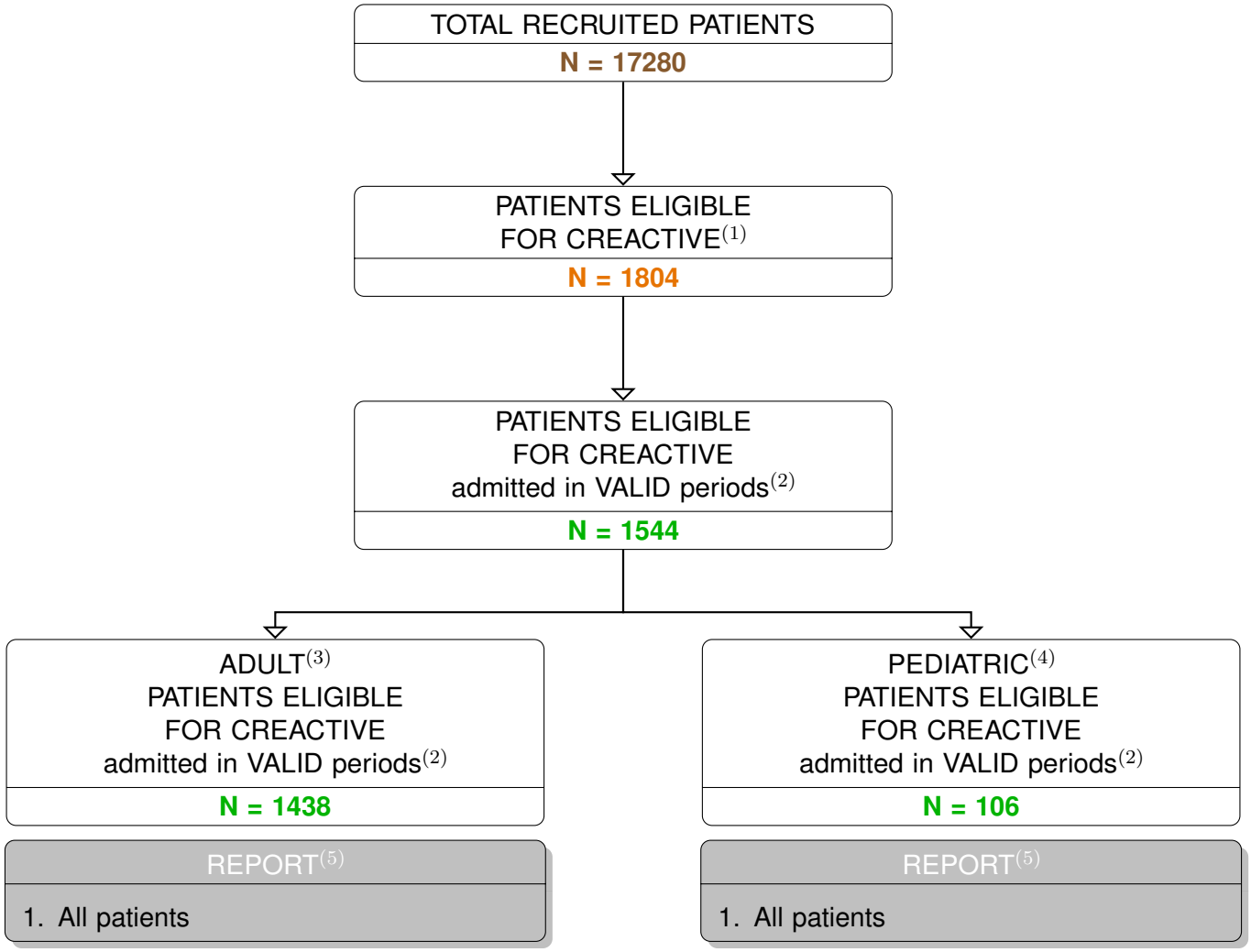
Overall population (47 ICUs)

Project participation*

Nation	ICUs	Adult Patients	Pediatric Patients	TBI Adult Patients	TBI Pediatric Patients	VALID TBI Adult Patients	VALID TBI Pediatric Patients
Cyprus	1	870	5	49	0	49	0
Greece	4	705	139	97	5	89	5
Hungary	4	689	15	177	8	160	8
Israel	2	45	1267	1	31	1	31
Italy	26	10216	840	1045	64	830	48
Poland	7	726	371	144	14	144	14
Slovenia	3	1386	6	169	0	165	0
Total	47	14637	2643	1682	122	1438	106
		17280		1804		1544	

*Only the ICUs providing valid data are included in the analysis.

Overall population with valid data (47 ICUs) - **Year 2018**
Study flow-chart



(1) Patients with traumatic brain injury are eligible to participate in CREACTIVE (the petal is not activated for patients with maxillofacial fractures only).
(2) Periods are considered VALID when the % of complete data for core and petal are over the thresholds.
(3) Patients older than 17 years are considered ADULT patients.
(4) Patients under 17 years of age are considered PEDIATRIC patients.
(5) Statistics are only provided for categories of patients composed of at least 5 subjects.

General report - **Year 2018**
Characteristics on admission - Adult patients

Patients (N): 1438

Sex	N	%
Male	1074	74.7
Female	364	25.3
Missing	0	

Age (years)	N	%
17-45	474	33.0
46-65	407	28.3
66-75	225	15.6
>75	332	23.1
Missing	0	
Mean	56.0	
SD	21.0	
Median	59	
Q1−Q3	38−75	
Min−Max	17−92	

Race	N	%
White European	1375	95.9
White African	6	0.4
Black Afro-american	9	0.6
Asian	17	1.2
Arab	16	1.1
Nomad	3	0.2
Unknown	8	0.6
Missing	4	

Marital status:	N	%
Married	515	35.9
Unmarried / Single	308	21.5
Separated / Divorced	45	3.1
Cohabiting	47	3.3
Widowed	107	7.5
Unknown	412	28.7
Missing	4	

Education level	N	%
No schooling	27	1.9
Primary school/ Elementary school	324	22.6
High school diploma	241	16.8
University degree	65	4.5
Unknown	777	54.2
Missing	4	

Occupational status:	N	%
Worker	406	28.3
Student	419	29.2
Homemaker	19	1.3
Retired	54	3.8
Unemployed / Looking for work	57	4.0
Disabled / Not applicable / Sheltered employment	25	1.7
Unknown	454	31.7
Missing	4	

Body mass Index (BMI)	N	%
Underweight	42	2.9
Normal	752	52.8
Overweight	486	34.1
Obese	144	10.1
Missing	14	

Comorbidities	N	%
No	614	42.7
Yes	824	57.3
Missing	0	

Comorbidities (top 10)	N	%
Hypertension	484	33.7
Arrhythmia	160	11.1
Alcohol addiction	133	9.2
Diabetes Type II without insulin tr.	122	8.5
Antiplatelet therapy	107	7.4
Cerebrovascular disease	87	6.1
Drug-induced coagulopathy	83	5.8
Myocardial infarction	82	5.7
NYHA class II-III	75	5.2
Any tumour without metastasis	57	4.0
Missing	0	

Multiple trauma	N	%
No	780	54.2
Yes	658	45.8
Missing	0	

Trauma (anatomical districts)	N	%
Spine	310	21.6
Vertebral fracture, without deficit	274	19.1
Cervical injury, incomplete deficit	13	0.9
Tetraplegia	8	0.6
Chest	452	31.4
Other injuries of the chest	246	17.1
Traum. haemothorax/pneumothorax	179	12.4
Severe lung contusion/laceration	149	10.4
Abdomen	140	9.7
Minor injuries of the abdomen	45	3.1
Spleen: Moderate-Severe laceration	40	2.8
Liver: Moderate-Severe laceration	35	2.4
Pelvis/bone/joint & muscle	312	21.7
Long bone fracture	226	15.7
Multiple fracture of the pelvis	123	8.6
Very severe or open fracture of the pelvis	15	1.0
Major vessels injury	47	3.3
Neck vessels: dissection/transection	20	1.4
Proximal limbs vessels: transection	10	0.7
Major abdominal vessels: transection	9	0.6
Miscellaneous	6	0.4
Inhalation injury	6	0.4
-	0	0.0
Missing	0	

General report - **Year 2018**
Timing of admission in ICU - Adult patients

Stay before ICU (days)	
Mean	0.8
SD	5.6
Median	0
Q1−Q3	0−1
Missing	1

Source of admission	N	%
Same hospital	1144	79.6
Other hospital	292	20.3
Long-term chronic care hospital	1	0.1
Directly from the community	1	0.1
Missing	0	

Ward of admission **Same hospital** (N=1144)	N	%
Medical ward	19	1.7
Surgical ward	170	14.9
Emergency room	901	78.8
Other ICU	35	3.1
High dependency care unit	19	1.7
Missing	0	

Ward of admission **Other hospital** (N=292)	N	%
Medical ward	9	3.1
Surgical ward	21	7.2
Emergency room	217	74.3
Other ICU	43	14.7
High dependency care unit	2	0.7
Missing	0	

Reason for transfer from **Other ICU** (N=78)	N	%
Specialist expertise	47	60.3
Step-up care	18	23.1
Logistical/organizational reasons	13	16.7
Step-down care	0	0.0
Missing	0	

Access type	N	%
Primary	1146	79.7
Secondary	292	20.3
Within 24 hours	205	85.4
Over 24 hours	35	14.6
Missing	52	
Missing	0	

Time of trauma available	N	%
No	99	6.9
Yes	1339	93.1
Missing	0	

Hours between trauma and admission in ICU *Time of trauma available* (N=1339)	
Mean	12.4
SD	21.0
Median	5
Q1−Q3	3−10
Min−Max	0−160
Missing	26

Hours between trauma and admission in ICU *Time of trauma available - Same hospital (N=1077)*	
Mean	11.1
SD	19.1
Median	5
Q1−Q3	3−9
Min−Max	0−160
Missing	18

Hours between trauma and admission in ICU *Time of trauma available - Other hospital (N=260)*	
Mean	18.2
SD	26.8
Median	8
Q1−Q3	5−18
Min−Max	1−151
Missing	8

Hours between trauma and admission in ICU *Time of trauma available - Same hospital - Emergency room (N=864)*	
Mean	7.5
SD	12.3
Median	4
Q1−Q3	2−7
Min−Max	0−100
Missing	9

Hours between trauma and admission in ICU *Time of trauma available - Other hospital - Emergency room (N=198)*	
Mean	11.8
SD	16.0
Median	7
Q1−Q3	4−11
Min−Max	1−123
Missing	5

General report - **Year 2018**
Characteristics of the trauma - Adult patients

Type of traumatic brain injury	N	%
Penetrating	43	3.0
Closed	1368	95.7
Unknown	19	1.3
Missing	8	

Workplace accident	N	%
No	1290	90.2
Yes	94	6.6
Unknown	46	3.2
Missing	8	

Home/domestic accident	N	%
No	882	61.7
Yes	498	34.8
Unknown	50	3.5
Missing	8	

Road traffic incident	N	%
No	813	56.9
Yes	617	43.1
Missing	8	

Means of transport **Road traffic incident** (N=617)	N	%
Truck/bus	8	1.3
Car/van	177	28.7
Motorcycle	180	29.2
Bicycle	91	14.7
Pedestrian	145	23.5
Other	16	2.6
Missing	0	

Sport/recreational accident	N	%
No	1319	92.3
Yes	69	4.8
Unknown	41	2.9
Missing	9	

Intention	N	%
Accidental	1265	88.5
Self-inflicted injury	54	3.8
Violence	34	2.4
Other	3	0.2
Unknown	74	5.2
Missing	8	

Trauma Dynamics	N	%
High energy impact with helmet	159	11.1
High energy impact without helmet	544	38.0
Low energy impact with helmet	22	1.5
Low energy impact without helmet	509	35.6
Blunt object	37	2.6
Crush	14	1.0
Blast	2	0.1
Gunshot	17	1.2
Acceleration/deceleration	94	6.6
Unknown	73	5.1
Missing	8	

General report - **Year 2018**
Type of trauma - Adult patients

Type of lesion°	**Present [N (%)]**	**Main [N (%)]**
Diffuse Injury *	258 (17.9%)	156 (10.9%)
Focal Damage **	1219 (84.8%)	1021 (71.3%)
G: Traumatic subarachnoid haemorrhage	684 (47.6%)	221 (15.4%)
H: Skull fracture	548 (38.1%)	34 (2.4%)

Marshall Classification	N	%
Diffuse Injury I (no visible pathology)	153	10.8
(D-II) Diffuse injury II	472	33.2
Diffuse Injury III (edema)	151	10.6
Diffuse Injury IV (shift>5mm)	34	2.4
(5-EML) Evacuated mass lesion	471	33.1
Traumatic intraparenchymal hemorrhage	42	9.4
Contusion and/ or brain laceration	46	10.3
Extradural or epidural hematoma	80	17.9
Traumatic subdural hematoma	278	62.3
(6-NEML) Not Evacuated mass lesion	141	9.9
Traumatic intraparenchymal hemorrhage	36	28.8
Contusion and/ or brain laceration	37	29.6
Extradural or epidural hematoma	6	4.8
Traumatic subdural hematoma	46	36.8
Missing	16	

Main lesion: DIFFUSE INJURY (N): 156

Diffuse Injury	N main	With focal	With **G**	With focal+**G**
A: Traumatic diffuse injury without oedema	60	8	10	6
B: Traumatic diffuse injury with oedema	96	25	7	40

Petechiae	N	%
No	62	39.7
Yes	94	60.3
Missing	0	

Midline shift>5 mm	N	%
No	108	69.2
<=5mm	26	16.7
>5mm	22	14.1
Missing	0	

Cistern conditions	N	%
Normal	74	47.4
Compressed or distorted	54	34.6
Absent	28	17.9
Missing	0	

Presence of focal damage	N	%
No	77	49.4
Yes	79	50.6
Missing	0	

Focal lesion

Presence of focal damage (N=79)	N	%
Cerebral contusion/laceration	54	68.4
Traumatic Subdural haematoma	39	49.4
Extradural/epidural haematoma	10	12.7
Traumatic intraparenchymal bleeding	6	7.6
Missing	0	

Lesion volume (N=79)	N	%
<=25ml	67	84.8
>25ml	12	15.2
Missing	0	

Evacuated mass (N=79)	N	%
No	64	81.0
Yes	15	19.0
Missing	0	

° Where both are present, the clinician is requested to select and indicate the main injury.
* Traumatic diffuse injury without oedema, Traumatic diffuse injury with oedema.
** Cerebral contusion/laceration, Extradural/epidural haematoma, Traumatic Subdural haematoma, Traumatic intraparenchymal bleeding.

General report - **Year 2018**
Type of trauma - Adult patients

Main lesion: FOCAL DAMAGE (N): 1021

Focal Injury	N main	With diffuse	With **G**	With diffuse+**G**
C: Cerebral contusion/laceration	327	9	130	15
D: Extradural/epidural haematoma	115	3	31	3
E: Traumatic Subdural haematoma	455	24	125	15
F: Traumatic intraparenchymal bleeding	124	6	59	7

Lesion volume	N	%
<=25ml	588	58.4
>25ml	419	41.6
Missing	14	

Evacuated mass	N	%
No	572	56.2
Yes	446	43.8
Missing	3	

Petechiae	N	%
No	669	65.7
Yes	349	34.3
Missing	3	

Midline shift>5 mm	N	%
No	407	40.0
<=5mm	256	25.1
>5mm	355	34.9
Missing	3	

Cistern conditions	N	%
Normal	463	45.5
Compressed or distorted	490	48.1
Absent	65	6.4
Missing	3	

Presence of diffuse injury	N	%
No	939	92.0
Yes	82	8.0
Missing	0	

FOCAL DAMAGE (as main or compresent) (N): 1219

Lesion volume	N	%
<=25ml	755	63.0
>25ml	444	37.0
Missing	20	

Evacuated mass	N	%
No	739	61.1
Yes	471	38.9
Missing	9	

Midline shift>5 mm	N	%
No	533	44.0
<=5mm	297	24.5
>5mm	380	31.4
Missing	9	

Cistern conditions	N	%
Normal	570	47.1
Compressed or distorted	553	45.7
Absent	87	7.2
Missing	9	

FOCAL DAMAGE (as main or compresent) with evacuated mass (N): 471

Lesion volume	N	%
<=25ml	147	31.5
>25ml	320	68.5
Missing	4	

Midline shift>5 mm	N	%
No	60	12.7
<=5mm	113	24.0
>5mm	298	63.3
Missing	0	

Cistern conditions	N	%
Normal	88	18.7
Compressed or distorted	342	72.6
Absent	41	8.7
Missing	0	

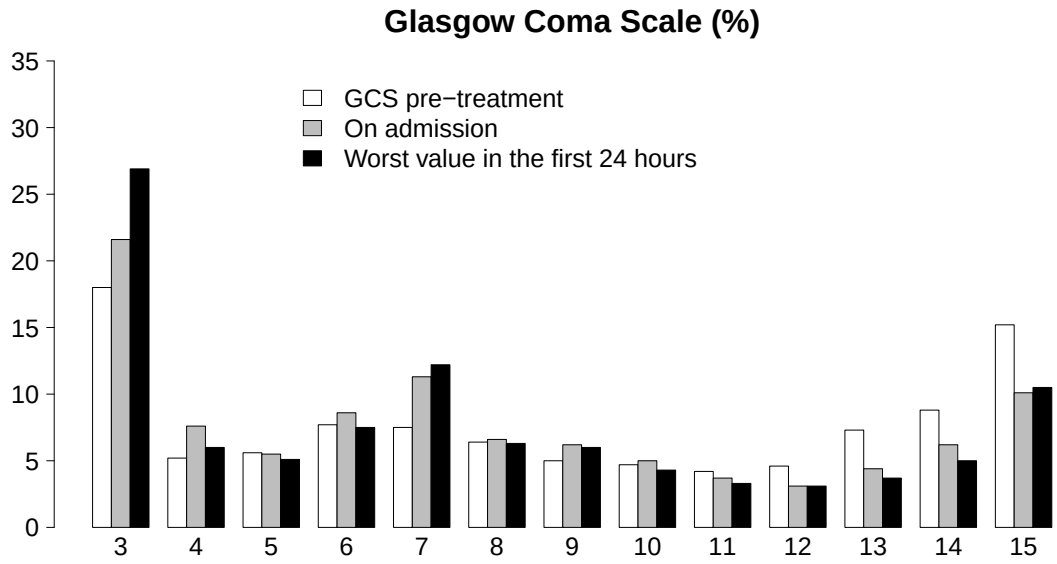
FOCAL DAMAGE (as main or compresent) without evacuated mass (N): 739

Lesion volume	N	%
<=25ml	608	83.1
>25ml	124	16.9
Missing	7	

Midline shift>5 mm	N	%
No	473	64.0
<=5mm	184	24.9
>5mm	82	11.1
Missing	0	

Cistern conditions	N	%
Normal	482	65.2
Compressed or distorted	211	28.6
Absent	46	6.2
Missing	0	

General report - **Year 2018**
Glasgow Coma Scale - Adult patients



GCS pre-treatment	
Median	8
Q1−Q3	5−13
Missing	7

GCS (admission)	
Median	7
Q1−Q3	4−11
Not evaluable	419
Missing	1

Worst GCS (first 24 hours)	
Median	7
Q1−Q3	3−11
Not evaluable	494
Missing	1

GCS	GCSPre(N)	GCSPre(%)	GCSAdm(N)	GCSAdm(%)	GCSWorst24(N)	GCSWorst24(%)
3	257	18	220	21.6	254	26.9
4	74	5.2	77	7.6	57	6
5	80	5.6	56	5.5	48	5.1
6	110	7.7	88	8.6	71	7.5
7	107	7.5	115	11.3	115	12.2
8	92	6.4	67	6.6	59	6.3
9	71	5	63	6.2	57	6
10	67	4.7	51	5	41	4.3
11	60	4.2	38	3.7	31	3.3
12	66	4.6	32	3.1	29	3.1
13	104	7.3	45	4.4	35	3.7
14	126	8.8	63	6.2	47	5
15	217	15.2	103	10.1	99	10.5
Tot	**1431**	100	**1018**	100	**943**	100
3-8					604	64.1
9-13					193	20.5
14-15					146	15.5

Worst GCS during first 24h: best motor response	N	%
Obeys commands (6)	238	16.6
Localizes pain (5)	256	17.8
Withdraws to pain (4)	121	8.4
Flexion (abnormal) to pain (3)	73	5.1
Extension to pain (2)	62	4.3
None(1)	287	20.0
Not available	400	27.8
Missing	1	

GCS trend in 48h **Available information** (N=998)	N	%
GCS 3 stable	114	11.4
GCS from 3 to 4-8	40	4.0
GCS from 3 to $>$ 8	17	1.7
GCS from 4-8 to 3	76	7.6
GCS 4-8 stable	153	15.3
GCS from 4-8 to $>$ 8	78	7.8
GCS from $>$ 8 to 3	48	4.8
GCS from $>$ 8 to 4-8	113	11.3
GCS $>$ 8 stable	359	36.0
Missing	0	

Availability of the pre-ICU systolic blood pressure value	N	%
No	438	30.7
Yes	991	69.3
Missing	9	

Clinically relevant hypotension	N	%
No	1080	75.6
Yes	194	13.6
Not available	155	10.8
Missing	9	

(Lowest) systolic blood pressure value	
Mean	120.4
SD	33.9
Median	120
Q1−Q3	100−140
Min−Max	20−250
Missing	0

Availability of pre-ICU hypoxia value	N	%
No	468	32.7
Yes	962	67.3
Missing	8	

Clinically relevant hypoxia	N	%
No	929	65.0
Yes	328	22.9
Not available	173	12.1
Missing	8	

(Lowest) peripheral oxygen saturation value	
Mean	93.7
SD	8.2
Median	96
Q1−Q3	92−98
Min−Max	10−100
Missing	0

Pupils in the emergency room GCS pre < 15 (N=1214)	N	%
Bilaterally reactive and/or miotic	785	64.7
Unilaterally dilated and non-reactive	226	18.6
Bilaterally dilated and non-reactive	138	11.4
Not assessable	20	1.6
Not available	44	3.6
Missing	1	

Hemoglobin ER (gr/dl)	
Mean	12.5
SD	2.2
Median	12.8
Q1−Q3	11.3−14
Min−Max	0.9−17.6
Not available	241
Missing	8

Blood glucose at ER (mg/dl)	
Mean	159.5
SD	64.5
Median	147
Q1−Q3	122−184
Min−Max	0−592
Not available	287
Missing	8

General report - **Year 2018**
Complications in the ICU - Adult patients

Neurological complications during the stay	N	%
No	742	51.9
Yes	687	48.1
A: Intracranial hypertension	407	28.5
B: Intracranial hypertension refractory or intractable	227	15.9
C: At least one episode of dilated pupils unreactive to light	279	19.5
D: Reduction of serum sodium	95	6.7
E: Post-surgical intracranial bleeding	20	1.4
F: Non-surgical intracranial bleeding	27	1.9
G: Seizures	58	4.1
H: Drowsiness/agitation/delirium	143	10.0
Missing	9	

Neurological complications during the stay (top 10)	N	%
ABC	121	8.5
H	106	7.4
A	90	6.3
AB	72	5.0
C	58	4.1
AC	40	2.8
D	38	2.7
G	26	1.8
DH	13	0.9
AG	11	0.8
Missing	9	

Other complications during the stay	N	%
Respiratory	191	13.3
Atelectasis	74	5.1
Pleural effusion	51	3.5
Aspiration pneumonia	31	2.2
Pneumothorax/Pneumomediastinum	29	2.0
Pulmonary embolism	16	1.1
Cardiovascular	149	10.4
Acute severe arrhythmia: tachycardias	57	4.0
Deep venous thrombosis	39	2.7
Cardiac arrest	26	1.8
Acute severe arrhythmia: bradycardias	10	0.7
Pulmonary edema	7	0.5
Gastrointestinal and hepatic	36	2.5
Paralytic Ileus	11	0.8
Gastrointestinal bleeding: upper tract	7	0.5
Acute pancreatitis	5	0.3
Bowel ischaemia	5	0.3
Liver Dysfunction Syndrome	5	0.3
Other	76	5.3
Metabolic disorder	34	2.4
Other disease	11	0.8
Nephrourologic disease	7	0.5
Other skin and/or soft tissue pathology	6	0.4
Extremity compartment syndrome (severe)	4	0.3
Blunt cerebral vessels trauma	3	0.2
Delayed spleen rupture	2	0.1
Infections	500	34.8
Pneumonia	277	19.3
L.R.T.I. other than pneumonia	129	9.0
NON-surgical urinary tract infection	48	3.3
Primary bacteraemia of unknown origin	41	2.9
Catheter-related bacteremia (CR-BSI)	36	2.5
Upper respiratory tract infection	22	1.5
Clinical sepsis	11	0.8
Post-surgical skin/soft tissue infection	11	0.8
Catheter-related local infection	7	0.5
Post-surgical CNS infection	7	0.5
Missing	1	

General report - **Year 2018**
Process indicators - Adult patients

ICP monitoring in Core	N	%
No	1034	71.9
Yes	404	28.1
Missing	0	

ICP monitoring in Core **Worst value in the first 24 hours <= 8** (N=604)	N	%
No	433	71.7
Yes	171	28.3
Missing	0	

Neurosurgical operation	N	%
No	847	59.1
Yes	587	40.9
Subdural haematoma evcuation	336	23.4
Extradural haematoma evcuation	100	7.0
Lobectomy or contusion removal	50	3.5
Primary decompression	150	10.5
Secondary decompression	30	2.1
Other neurosurgical procedure	123	8.6
Missing	4	

Hypothermia	N	%
No	1426	99.2
Yes	12	0.8
Missing	0	

External ventricular drainage without ICP monitoring	N	%
No	1413	98.3
Yes	25	1.7
Missing	0	

External ventricular drainage with ICP monitoring	N	%
No	1373	95.5
Yes	65	4.5
Missing	0	

Barbiturate infusion for refractory ICP	N	%
No	1359	95.1
Yes	70	4.9
Missing	9	

Hyperventilation paCO2<25 mmHg	N	%
No	1387	97.1
Yes	42	2.9
Missing	9	

Indomethacin	N	%
No	1425	99.7
Yes	4	0.3
Missing	9	

Mannitol (multiple doses)	N	%
No	1114	78.0
Yes	315	22.0
Missing	9	

Hypertonic saline	N	%
No	1276	89.3
Yes	153	10.7
Missing	9	

Osmotic therapy	N	%
No	1058	74.0
Yes	371	26.0
Missing	9	

Sedation/analgesia	N	%
No	978	68.4
Yes	451	31.6
Missing	9	

Propofol infusion for refractory ICP	N	%
No	1301	91.0
Yes	128	9.0
Missing	9	

Vasoconstrictor drugs **Vasoactive drugs in Core** (N=915)	N	%
No	352	38.7
Yes	557	61.3
Missing	6	

Therapy level	N	%
None	670	46.6
Standard	361	25.1
Intermediate	207	14.4
Extreme - medical	170	11.8
Extreme - surgical	30	2.1
Missing	0	

General report - **Year 2018**
Outcome - Adult patients

ICU stay (days)	
Mean	12.0
SD	13.4
Median	7
Q1−Q3	2−17
Min−Max	1−123
Missing	2

Hospital stay (days) (1),(2)	
Mean	22.0
SD	26.3
Median	15
Q1−Q3	5−29
Min−Max	0−373
Missing	9

ICU mortality (3)	N	%
Alive	1080	75.3
Dead	355	24.7
Missing	3	

Hospital mortality (1),(3)	N	%
Alive	983	68.9
Dead	443	31.1
Missing	9	

Cause of death (4) **Dead** (N=350)	N	%
MOF	58	16.7
Comorbidities	13	3.7
Cerebral	257	73.9
Hemorrhagic	15	4.3
Not determined	5	1.4
Missing	2	

Last hospital mortality (1)	N	%
Alive	949	67.0
Dead	467	33.0
Missing	19	

Outcome at discharge from ICU (5) **Alive** (N=1085)	N	%
Cannot follow simple commands	299	27.7
Can follow simple commands	779	72.3
Missing	7	

Does the patient have language problems? **Can follow simple commands** (N=779)	N	%
No	514	66.0
Si	181	23.2
Not assessable	84	10.8
Missing	0	

Does the patient have motor problems? **Alive** (N=1085)	N	%
No	547	50.7
Yes	531	49.3
Missing	7	

Is the patient oriented in at least one of the following dimensions: space, time, person, context? **Can follow simple commands** (N=779)	N	%
No	225	28.9
Yes	514	66.0
Unknown	40	5.1
Missing	0	

(1) Statistics calculated after excluding readmissions (N = 1435).
(2) Days between admission to ICU and discharge from hospital.
(3) Patients discharged in a preterminal condition (N = 5) were calculated among the deceased.
(4) Excluding patients discharged in a preterminal condition.
(5) Including patients discharged in a preterminal condition.

General report - **Year 2018**
Characteristics on admission - Pediatric patients

Patients (N): 106

Sex	N	%
Male	74	69.8
Female	32	30.2
Missing	0	

Age	N	%
Newborn (0-4 weeks)	0	0.0
1-6 months	0	0.0
6-12 months	2	1.9
12-24 months	7	6.6
2-4 years	20	18.9
5-8 years	29	27.4
9-16 years	48	45.3
Missing	0	
Mean	8.1	
SD	4.7	
Median	8	
Q1−Q3	4−12.8	
Min−Max	0−16	

Race	N	%
White European	34	65.4
White African	5	9.6
Black Afro-american	0	0.0
Asian	0	0.0
Arab	13	25.0
Nomad	0	0.0
Unknown	0	0.0
Missing	54	

Weight (kg)
Newborns (N=0)

Mean	
SD	
Median	
Q1−Q3	
Missing	0

Gestational age
Newborns (N=0)

	N	%
At term	0	0.0
Not at term	0	0.0
Missing	0	

Comorbidities	N	%
No	95	90.5
Yes	10	9.5
Missing	1	

Comorbidities (top 10)	N	%
Genetic diseases	3	2.9
Asthma	2	1.9
Brain and skull malformations	2	1.9
Lower airway abnormalities	2	1.9
Any tumour without metastasis	1	1.0
Chromosomic anomalies	1	1.0
Encephalopathy	1	1.0
Endocrine-metabolic diseases	1	1.0
Gastrointestinal malformations	1	1.0
Hydrocephalus	1	1.0
Missing	1	

Multiple trauma	N	%
No	70	66.0
Yes	36	34.0
Missing	0	

Trauma (anatomical districts)	N	%
Spine	12	11.3
Vertebral fracture, without deficit	11	10.4
Cervical injury, incomplete deficit	1	0.9
-	0	0.0
Chest	15	14.2
Severe lung contusion/laceration	6	5.7
Traum. haemothorax/pneumothorax	5	4.7
Tension pneumothorax	3	2.8
Abdomen	6	5.7
Minor injuries of the abdomen	4	3.8
Kidney: Rupture/laceration	3	2.8
Liver: Moderate-Severe laceration	2	1.9
Pelvis/bone/joint & muscle	18	17.0
Long bone fracture	16	15.1
Multiple fracture of the pelvis	2	1.9
Massive crush/amputation	1	0.9
Major vessels injury	1	0.9
Proximal limbs vessels: transection	1	0.9
-	0	0.0
-	0	0.0
Miscellaneous	0	0.0
-	0	0.0
-	0	0.0
Missing	0	

General report - **Year 2018**
Timing of admission in ICU - Pediatric patients

Previous ICU admissions	N	%
None	86	81.1
<=2	7	6.6
>2	1	0.9
Unknown	12	11.3
Missing	0	

Stay before ICU (days)	
Mean	0.3
SD	0.8
Median	0
Q1−Q3	0−0
Missing	0

Source of admission	N	%
Same hospital	77	72.6
Other hospital	22	20.8
Long-term chronic care hospital	0	0.0
Directly from the community	7	6.6
Missing	0	

Ward of admission **Same hospital** (N=77)	N	%
Medical ward	1	1.3
Surgical ward	5	6.6
Emergency room	69	90.8
Other ICU	1	1.3
High dependency care unit	0	0.0
Missing	1	

Ward of admission **Other hospital** (N=22)	N	%
Medical ward	1	4.5
Surgical ward	2	9.1
Emergency room	18	81.8
Other ICU	1	4.5
High dependency care unit	0	0.0
Missing	0	

Reason for transfer from **Other ICU** (N=2)	N	%
Specialist expertise	1	50.0
Step-up care	0	0.0
Logistical/organizational reasons	1	50.0
Step-down care	0	0.0
Missing	0	

Access type	N	%
Primary	84	79.2
Secondary	22	20.8
Within 24 hours	18	90.0
Over 24 hours	2	10.0
Missing	2	
Missing	0	

Time of trauma available	N	%
No	6	5.7
Yes	100	94.3
Missing	0	

Hours between trauma and admission in ICU
Time of trauma available (N=100)

Mean	8.4
SD	19.1
Median	4
Q1−Q3	3−7
Min−Max	0−177
Missing	2

Hours between trauma and admission in ICU
Time of trauma available - Same hospital (N=71)

Mean	6.2
SD	8.7
Median	4
Q1−Q3	2−6
Min−Max	0−57
Missing	2

Hours between trauma and admission in ICU
Time of trauma available - Other hospital (N=22)

Mean	17.3
SD	36.5
Median	8
Q1−Q3	4−10.8
Min−Max	2−177
Missing	0

Hours between trauma and admission in ICU
Time of trauma available - Same hospital - Emergency room (N=65)

Mean	4.7
SD	4.3
Median	4
Q1−Q3	2−5.5
Min−Max	0−25
Missing	2

Hours between trauma and admission in ICU
Time of trauma available - Other hospital - Emergency room (N=18)

Mean	7.9
SD	6.2
Median	6
Q1−Q3	4−9.8
Min−Max	2−26
Missing	0

General report - **Year 2018**
Characteristics of the trauma - Pediatric patients

Type of traumatic brain injury	N	%
Penetrating	5	5.0
Closed	87	86.1
Unknown	9	8.9
Missing	5	

Workplace accident	N	%
No	100	99.0
Yes	1	1.0
Unknown	0	0.0
Missing	5	

Home/domestic accident	N	%
No	73	72.3
Yes	28	27.7
Unknown	0	0.0
Missing	5	

Road traffic incident	N	%
No	44	43.6
Yes	57	56.4
Missing	5	

Means of transport		
Road traffic incident (N=57)	N	%
Truck/bus	1	1.8
Car/van	19	33.3
Motorcycle	9	15.8
Bicycle	7	12.3
Pedestrian	16	28.1
Other	5	8.8
Missing	0	

Sport/recreational accident	N	%
No	78	77.2
Yes	20	19.8
Unknown	3	3.0
Missing	5	

Intention	N	%
Accidental	99	98.0
Self-inflicted injury	0	0.0
Violence	1	1.0
Other	0	0.0
Unknown	1	1.0
Missing	5	

Trauma Dynamics	N	%
High energy impact with helmet	7	6.9
High energy impact without helmet	51	50.5
Low energy impact with helmet	0	0.0
Low energy impact without helmet	35	34.7
Blunt object	3	3.0
Crush	3	3.0
Blast	0	0.0
Gunshot	0	0.0
Acceleration/deceleration	3	3.0
Unknown	2	2.0
Missing	5	

General report - **Year 2018**
Type of trauma - Pediatric patients

Type of lesion°	**Present [N (%)]**	**Main [N (%)]**
Diffuse Injury *	23 (21.7%)	18 (17%)
Focal Damage **	76 (71.7%)	65 (61.3%)
G: Traumatic subarachnoid haemorrhage	19 (17.9%)	8 (7.5%)
H: Skull fracture	52 (49.1%)	15 (14.2%)

Marshall Classification	N	%
Diffuse Injury I (no visible pathology)	20	19.6
(D-II) Diffuse injury II	44	43.1
Diffuse Injury III (edema)	11	10.8
Diffuse Injury IV (shift>5mm)	2	2.0
(5-EML) Evacuated mass lesion	24	23.5
Traumatic intraparenchymal hemorrhage	0	0.0
Contusion and/ or brain laceration	3	12.5
Extradural or epidural hematoma	19	79.2
Traumatic subdural hematoma	2	8.3
(6-NEML) Not Evacuated mass lesion	1	1.0
Traumatic intraparenchymal hemorrhage	0	0.0
Contusion and/ or brain laceration	1	100.0
Extradural or epidural hematoma	0	0.0
Traumatic subdural hematoma	0	0.0
Missing	4	

Main lesion: DIFFUSE INJURY (N): 18

Diffuse Injury	N main	With focal	With **G**	With focal+**G**
A: Traumatic diffuse injury without oedema	11	3	0	1
B: Traumatic diffuse injury with oedema	7	1	0	1

Petechiae	N	%
No	8	44.4
Yes	10	55.6
Missing	0	

Midline shift>5 mm	N	%
No	13	72.2
<=5mm	4	22.2
>5mm	1	5.6
Missing	0	

Cistern conditions	N	%
Normal	12	66.7
Compressed or distorted	3	16.7
Absent	3	16.7
Missing	0	

Presence of focal damage	N	%
No	12	66.7
Yes	6	33.3
Missing	0	

Focal lesion

Presence of focal damage (N=6)	N	%
Cerebral contusion/laceration	2	33.3
Extradural/epidural haematoma	2	33.3
Traumatic intraparenchymal bleeding	2	33.3
Traumatic Subdural haematoma	1	16.7
Missing	0	

Lesion volume § (N=6)	N	%
<=25ml	6	100.0
>25ml	0	0.0
Missing	0	

Evacuated mass (N=6)	N	%
No	6	100.0
Yes	0	0.0
Missing	0	

° Where both are present, the clinician is requested to select and indicate the main injury.
* Traumatic diffuse injury without oedema, Traumatic diffuse injury with oedema.
** Cerebral contusion/laceration, Extradural/epidural haematoma, Traumatic Subdural haematoma, Traumatic intraparenchymal bleeding.
§ Only for > 10 years old.

General report - **Year 2018**
Type of trauma - Pediatric patients

Main lesion: FOCAL DAMAGE (N): 65

Focal Injury	N main	With diffuse	With **G**	With diffuse+**G**
C: Cerebral contusion/laceration	23	1	5	0
D: Extradural/epidural haematoma	26	2	0	0
E: Traumatic Subdural haematoma	8	0	1	0
F: Traumatic intraparenchymal bleeding	8	1	2	0

Lesion volume § (N=22)	N	%
<=25ml	17	89.5
>25ml	2	10.5
Missing	3	

Evacuated mass	N	%
No	37	60.7
Yes	24	39.3
Missing	4	

Petechiae	N	%
No	37	60.7
Yes	24	39.3
Missing	4	

Midline shift>5 mm	N	%
No	38	62.3
<=5mm	14	23.0
>5mm	9	14.8
Missing	4	

Cistern conditions	N	%
Normal	48	78.7
Compressed or distorted	9	14.8
Absent	4	6.6
Missing	4	

Presence of diffuse injury	N	%
No	61	93.8
Yes	4	6.2
Missing	0	

FOCAL DAMAGE (as main or compresent) (N): 76

Lesion volume § (N=28)	N	%
<=25ml	23	92.0
>25ml	2	8.0
Missing	3	

Evacuated mass	N	%
No	48	66.7
Yes	24	33.3
Missing	4	

Midline shift>5 mm	N	%
No	47	65.3
<=5mm	16	22.2
>5mm	9	12.5
Missing	4	

Cistern conditions	N	%
Normal	58	80.6
Compressed or distorted	10	13.9
Absent	4	5.6
Missing	4	

FOCAL DAMAGE (as main or compresent) with evacuated mass (N): 24

Lesion volume § (N=6)	N	%
<=25ml	3	60.0
>25ml	2	40.0
Missing	1	

Midline shift>5 mm	N	%
No	10	41.7
<=5mm	6	25.0
>5mm	8	33.3
Missing	0	

Cistern conditions	N	%
Normal	16	66.7
Compressed or distorted	5	20.8
Absent	3	12.5
Missing	0	

FOCAL DAMAGE (as main or compresent) without evacuated mass (N): 48

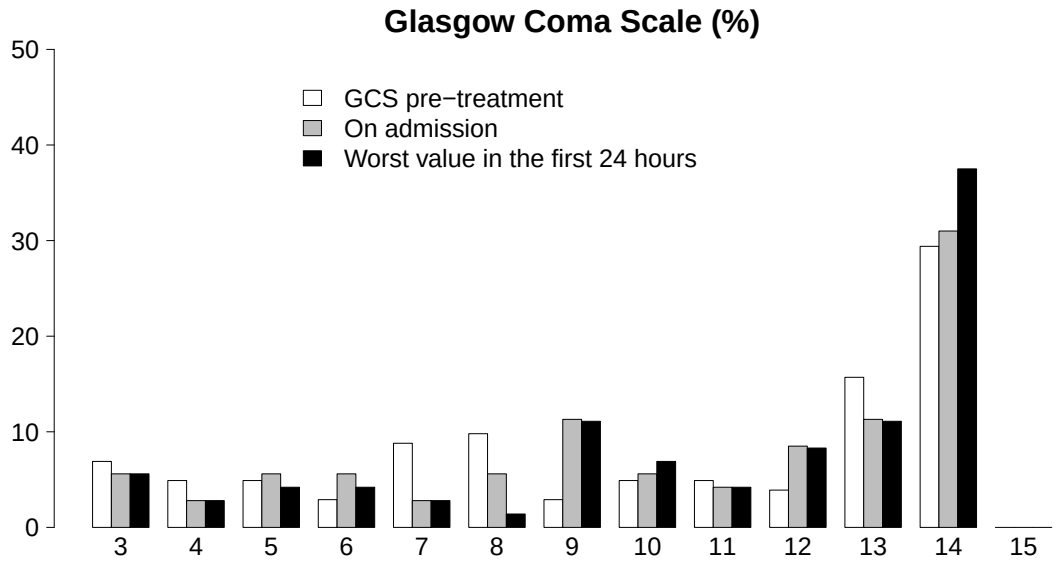
Lesion volume § (N=20)	N	%
<=25ml	20	100.0
>25ml	0	0.0
Missing	0	

Midline shift>5 mm	N	%
No	37	77.1
<=5mm	10	20.8
>5mm	1	2.1
Missing	0	

Cistern conditions	N	%
Normal	42	87.5
Compressed or distorted	5	10.4
Absent	1	2.1
Missing	0	

§ Only for > 10 years old.

General report - **Year 2018**
Glasgow Coma Scale - Pediatric patients



GCS pre-treatment	
Median	11
Q1−Q3	7−14
Missing	4
GCS (admission)	
Median	12
Q1−Q3	8−14
Not evaluable	35
Missing	0
Worst GCS (first 24 hours)	
Median	12
Q1−Q3	9−14
Not evaluable	34
Missing	0

GCS	GCSPre(N)	GCSPre(%)	GCSAdm(N)	GCSAdm(%)	GCSWorst24(N)	GCSWorst24(%)
3	7	6.9	4	5.6	4	5.6
4	5	4.9	2	2.8	2	2.8
5	5	4.9	4	5.6	3	4.2
6	3	2.9	4	5.6	3	4.2
7	9	8.8	2	2.8	2	2.8
8	10	9.8	4	5.6	1	1.4
9	3	2.9	8	11.3	8	11.1
10	5	4.9	4	5.6	5	6.9
11	5	4.9	3	4.2	3	4.2
12	4	3.9	6	8.5	6	8.3
13	16	15.7	8	11.3	8	11.1
14	30	29.4	22	31	27	37.5
15	/	/	/	/	/	/
Tot	**102**	100	**71**	100	**72**	100
3-8					15	20.8
9-13					30	41.7
14					27	37.5

Worst GCS during first 24h: best motor response	N	%
Obeys commands (5)	44	41.5
Localizes pain (4)	18	17.0
Flexion to pain (3)	4	3.8
Extension to pain (2)	2	1.9
None(1)	4	3.8
Not available	34	32.1
Missing	0	

GCS trend in 48h **Available information** (N=74)	N	%
GCS 3 stable	1	1.4
GCS from 3 to 4-8	1	1.4
GCS from 3 to $>$ 8	2	2.7
GCS from 4-8 to 3	1	1.4
GCS 4-8 stable	7	9.5
GCS from 4-8 to $>$ 8	14	18.9
GCS from $>$ 8 to 3	1	1.4
GCS from $>$ 8 to 4-8	2	2.7
GCS $>$ 8 stable	45	60.8
Missing	0	

General report - **Year 2018**
Before admission to ICU - Pediatric patients

Availability of the pre-ICU systolic blood pressure value	N	%
No	31	30.7
Yes	70	69.3
Missing	5	

Clinically relevant hypotension	N	%
No	77	76.2
Yes	6	5.9
Not available	18	17.8
Missing	5	

(Lowest) systolic blood pressure value	
Mean	109.2
SD	16.9
Median	110
Q1−Q3	100−120
Min−Max	60−153
Missing	0

Availability of pre-ICU hypoxia value	N	%
No	29	28.7
Yes	72	71.3
Missing	5	

Clinically relevant hypoxia	N	%
No	60	59.4
Yes	25	24.8
Not available	16	15.8
Missing	5	

(Lowest) peripheral oxygen saturation value	
Mean	96.2
SD	7.8
Median	98
Q1−Q3	96−100
Min−Max	40−100
Missing	0

Pupils in the emergency room GCS pre < 14 (N=72)	N	%
Bilaterally reactive and/or miotic	51	75.0
Unilaterally dilated and non-reactive	9	13.2
Bilaterally dilated and non-reactive	2	2.9
Not assessable	1	1.5
Not available	5	7.4
Missing	4	

Hemoglobin ER (gr/dl)	
Mean	12.0
SD	1.6
Median	12
Q1−Q3	11.3−13
Min−Max	8.5−16
Not available	25
Missing	4

Blood glucose at ER (mg/dl)	
Mean	160.1
SD	58.4
Median	154
Q1−Q3	123−184
Min−Max	69−357
Not available	28
Missing	4

General report - **Year 2018**
Complications in the ICU - Pediatric patients

Neurological complications during the stay	N	%
No	63	62.4
Yes	38	37.6
A: Intracranial hypertension	31	30.7
B: Intracranial hypertension refractory or intractable	7	6.9
C: At least one episode of dilated pupils unreactive to light	9	8.9
D: Reduction of serum sodium	2	2.0
E: Post-surgical intracranial bleeding	0	0.0
F: Non-surgical intracranial bleeding	1	1.0
G: Seizures	2	2.0
H: Drowsiness/agitation/delirium	9	8.9
Missing	5	

Neurological complications during the stay (top 10)	N	%
A	16	15.8
H	5	5.0
AC	3	3.0
AB	2	2.0
ABC	2	2.0
AH	2	2.0
C	2	2.0
ABCD	1	1.0
ABCH	1	1.0
ABG	1	1.0
Missing	5	

Other complications during the stay	N	%
Respiratory	18	17.0
Mild ARDS	10	9.4
Atelectasis	4	3.8
Moderate ARDS	2	1.9
Aspiration pneumonia	2	1.9
Pleural effusion	2	1.9
Cardiovascular	1	0.9
Deep venous thrombosis	1	0.9
-	0	0.0
-	0	0.0
-	0	0.0
-	0	0.0
Gastrointestinal and hepatic	1	0.9
Liver Dysfunction Syndrome	1	0.9
-	0	0.0
-	0	0.0
-	0	0.0
-	0	0.0
Other	6	5.7
Metabolic disorder	4	3.8
Other skin and/or soft tissue pathology	2	1.9
-	0	0.0
-	0	0.0
-	0	0.0
-	0	0.0
-	0	0.0
Infections	14	13.2
L.R.T.I. other than pneumonia	5	4.7
Pneumonia	5	4.7
Catheter-related bacteremia (CR-BSI)	2	1.9
Primary bacteraemia of unknown origin	1	0.9
Catheter-related local infection	1	0.9
F.U.O. fever of unknown origin	1	0.9
Other viral infections	1	0.9
Upper respiratory tract infection	1	0.9
NON-surgical urinary tract infection	1	0.9
-	0	0.0
Missing	0	

General report - **Year 2018**
Process indicators - Pediatric patients

ICP monitoring in Core	N	%
No	77	72.6
Yes	29	27.4
Missing	0	

ICP monitoring in Core **Worst value in the first 24 hours** **<= 8** (N=15)	N	%
No	10	66.7
Yes	5	33.3
Missing	0	

Neurosurgical operation	N	%
No	66	62.3
Yes	40	37.7
Subdural haematoma evcuation	4	3.8
Extradural haematoma evcuation	19	17.9
Lobectomy or contusion removal	1	0.9
Primary decompression	6	5.7
Secondary decompression	2	1.9
Other neurosurgical procedure	19	17.9
Missing	0	

Hypothermia	N	%
No	102	96.2
Yes	4	3.8
Missing	0	

External ventricular drainage without ICP monitoring	N	%
No	105	99.1
Yes	1	0.9
Missing	0	

External ventricular drainage with ICP monitoring	N	%
No	99	93.4
Yes	7	6.6
Missing	0	

Barbiturate infusion for refractory ICP	N	%
No	97	96.0
Yes	4	4.0
Missing	5	

Hyperventilation paCO2<25 mmHg	N	%
No	100	99.0
Yes	1	1.0
Missing	5	

Indomethacin	N	%
No	101	100.0
Yes	0	0.0
Missing	5	

Mannitol (multiple doses)	N	%
No	82	81.2
Yes	19	18.8
Missing	5	

Hypertonic saline	N	%
No	80	79.2
Yes	21	20.8
Missing	5	

Osmotic therapy	N	%
No	75	74.3
Yes	26	25.7
Missing	5	

Sedation/analgesia	N	%
No	74	73.3
Yes	27	26.7
Missing	5	

Propofol infusion for refractory ICP	N	%
No	91	90.1
Yes	10	9.9
Missing	5	

Vasoconstrictor drugs **Vasoactive drugs in Core** (N=18)	N	%
No	2	11.1
Yes	16	88.9
Missing	0	

Therapy level	N	%
None	70	66.0
Standard	5	4.7
Intermediate	14	13.2
Extreme - medical	15	14.2
Extreme - surgical	2	1.9
Missing	0	

ICU stay (days)	
Mean	7.1
SD	11.1
Median	2.5
Q1−Q3	1−7.8
Min−Max	1−60
Missing	0

Hospital stay (days) (1),(2)	
Mean	13.2
SD	13.0
Median	8.5
Q1−Q3	5−16
Min−Max	0−61
Missing	0

ICU mortality (3)	N	%
Alive	100	95.2
Dead	5	4.8
Missing	1	

Hospital mortality (1),(3)	N	%
Alive	101	95.3
Dead	5	4.7
Missing	0	

Cause of death (4)

Dead (N=5)	N	%
MOF	2	40.0
Comorbidities	0	0.0
Cerebral	3	60.0
Hemorrhagic	0	0.0
Not determined	0	0.0
Missing	0	

Last hospital mortality (1)	N	%
Alive	101	95.3
Dead	5	4.7
Missing	0	

Outcome at discharge from ICU (5)

Alive >=4 years (N=81)	N	%
Cannot follow simple commands	6	7.7
Can follow simple commands	72	92.3
Missing	3	

Does the patient have language problems?

Can follow simple commands (>=4 years) (N=72)	N	%
No	57	79.2
Si	13	18.1
Not assessable	2	2.8
Missing	0	

Does the patient have motor problems?

Alive (>=4 years) (N=81)	N	%
No	59	75.6
Yes	19	24.4
Missing	3	

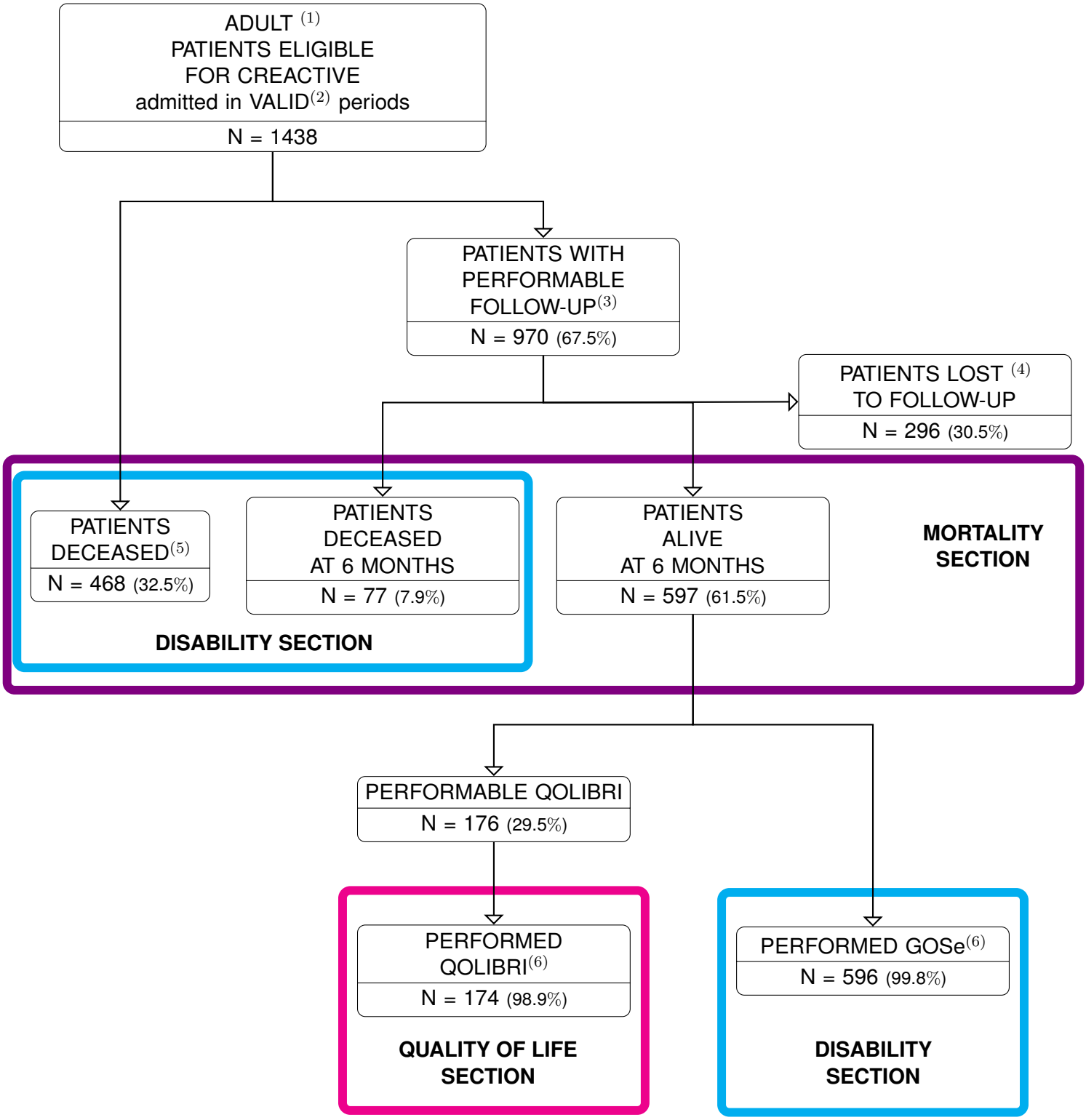
Is the patient oriented in at least one of the following dimensions: space, time, person, context?

Can follow simple commands (>=4 years) (N=72)	N	%
No	24	33.3
Yes	47	65.3
Unknown	1	1.4
Missing	0	

(1) Statistics calculated after excluding readmissions (N = 106).
(2) Days between admission to ICU and discharge from hospital.
(3) Patients discharged in a preterminal condition (N = 0) were calculated among the deceased.
(4) Excluding patients discharged in a preterminal condition.
(5) Including patients discharged in a preterminal condition.

FOLLOW-UP

Overall population with valid data (42 ICUs) - **Year 2018**
Follow-up flow-chart - Adult patients



(1) Patients older than 17 years are considered ADULT patients.
(2) Periods are considered VALID when the % of complete data for core and petal are over the thresholds.
(3) Patients discharged alive > 6 months from the date of admission.
(4) This also includes patients declining to take part in the follow-up study or who are not contactable.
(5) Patients deceased in ICU or in hospital.
(6) Statistics are presented only for categories of patients represented by at least 5 subjects.

N.B. The % refers to the upper node in the flow chart.

Popolazione complessiva (42 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Adult patients

Patients (N): 1142

This section presents the mortality-related statistics.
Each of the tables provided is divided into two parts:

- the **first part** of each table (on the left-hand side, printed in black ink) refers to the ICU and the hospital mortality rates for each patient category.
  For example, 15.9% of the 474 patients aged between 17 and 45 years died in the ICU, while 16.9% died in hospital; 36% of the 332 patients aged over 75 years died in the ICU, while 56.7% died in hospital.
  This part of the table refers to all **adult CREACTIVE patients with valid data**.

- the **second part** of each table (on the right-hand side, printed in purple ink) refers instead to **adult CREACTIVE patients with valid data on whom we have 6-month outcome data** (alive or dead). The mortality rate at different time points (irrespective of the place of death - ICU, hospital, home) is shown for these patients: *within 4 days of the trauma event, between 4 and 7 days, between 8 and 30 days, and over 30 days*.
  For example, 347 of the valid adult CREACTIVE patients are aged between 17 and 45 years: of these, 9.9% died within 4 days of the trauma event, while the remaining 90.1% were still alive at that date. Accordingly, the only patients at risk of dying between 4 and 7 days are the ones still alive at day 4 *(347*0.901=313)*: 6.1% of these 313 died between 4 and 7 days. At this point, the only patients at risk of dying between 8 and 30 days are the ones who are still alive at day 8 *(i.e., 313*0.939=294)*; 7.2% of these died within 30 days.
  Hence, the sum of the percentages in each row does not produce 100%, since the denominator on which the rate is calculated varies for each column. To be precise, it consists of the number of subjects who are still alive at the start of the observation period of each column.

	All patients (N=1438)			Patients with follow-up (N=1142)				
Age	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
17-45	474	15.9	16.9	347	9.9	6.1	7.2	4.1
46-65	407	22.6	27.2	315	13.7	8.9	11.8	15.7
66-75	225	30.7	42.8	194	20.2	12.3	17.8	27.0
>75	332	36.0	56.7	286	22.1	22.5	36.0	39.1

	All patients (N=1438)			Patients with follow-up (N=1142)				
Comorbidities	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Yes	824	28.6	42.1	665	17.5	16.2	22.7	25.4
No	614	19.6	21.0	477	13.4	5.7	8.4	8.0

	All patients (N=1438)			Patients with follow-up (N=1142)				
Source of admission	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Same hospital	1144	24.0	32.2	919	15.8	10.9	15.1	15.7
Other hospital	292	27.5	36.5	221	15.5	15.1	21.0	21.8
Long-term chronic care hospital	1	100.0	100.0	1	100.0	-	-	-
Directly from the community	1	0.0	0.0	1	0.0	0.0	0.0	0.0

† Mortality (%)
* from TBI

Popolazione complessiva (42 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Adult patients

	All patients (N=1438)			Patients with follow-up (N=1142)				
Worst GCS (first 24 hours)	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
3-8	604	39.7	46.7	514	27.3	17.8	19.1	21.5
9-13	193	7.8	18.8	142	2.8	8.0	14.2	15.6
14-15	146	2.7	4.1	114	0.0	1.8	3.7	2.9
Not evaluable	494	19.6	30.5	372	9.7	9.8	18.5	18.2

	All patients (N=1438)			Patients with follow-up (N=1142)				
Worst GCS during first 24h: best motor response	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Obeys commands (6)	238	2.9	8.1	178	1.1	1.7	6.5	6.3
Localizes pain (5)	256	9.8	17.7	201	2.0	10.2	9.7	15.1
Withdraws to pain (4)	121	14.0	23.3	87	3.6	11.1	13.9	21.0
Flexion (abnormal) to pain (3)	73	26.0	38.9	64	9.4	10.3	26.9	28.9
Extension to pain (2)	62	45.9	55.0	56	16.4	23.9	28.6	28.0
None(1)	287	62.6	68.3	258	50.4	30.5	24.7	23.9
Not available	400	20.0	31.0	298	8.4	8.8	20.9	18.8

	All patients (N=1438)			Patients with follow-up (N=1142)				
GCS trend in 48h	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
GCS 3 stable	114	71.1	75.2	100	60.0	40.0	20.8	21.1
GCS from 3 to 4-8	40	35.0	37.5	36	11.1	15.6	22.2	19.0
GCS from 3 to > 8	17	5.9	11.8	11	9.1	0.0	0.0	10.0
GCS from 4-8 to 3	76	75.0	80.0	71	56.3	38.7	42.1	18.2
GCS 4-8 stable	153	25.7	31.3	123	6.6	12.4	23.2	17.1
GCS from 4-8 to > 8	78	3.8	9.1	52	0.0	9.6	2.2	13.3
GCS from > 8 to 3	48	66.0	70.2	44	45.5	41.7	21.4	27.3
GCS from > 8 to 4-8	113	16.8	34.2	96	5.3	11.1	17.5	27.3
GCS > 8 stable	359	5.0	12.1	272	1.1	4.5	9.9	12.3

† Mortality (%)
* from TBI

Popolazione complessiva (42 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Adult patients

	All patients (N=1438)			Patients with follow-up (N=1142)				
Clinically relevant hypotension	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
No	1080	20.9	29.4	855	12.2	10.9	14.6	16.6
Yes	194	45.3	51.3	170	32.5	16.7	22.1	16.2
Not available	155	25.2	35.5	114	16.1	12.8	20.7	18.5

	All patients (N=1438)			Patients with follow-up (N=1142)				
Clinically relevant hypoxia	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
No	929	22.0	30.4	739	13.7	11.0	14.6	15.0
Yes	328	32.1	39.9	274	20.2	12.0	20.4	21.1
Not available	173	25.4	34.7	127	16.8	15.4	17.0	19.2

	All patients (N=1438)			Patients with follow-up (N=1142)				
Pupils in the emergency room	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Bilaterally reactive and/or miotic	785	14.0	22.5	617	5.4	7.4	13.9	16.5
Unilaterally dilated and non-reactive	226	37.9	45.5	180	24.0	20.6	24.1	18.3
Bilaterally dilated and non-reactive	138	74.6	80.9	128	59.4	38.5	34.4	33.3
Not assessable	20	35.0	36.8	14	14.3	25.0	11.1	25.0
Not available	44	20.5	34.9	34	11.8	16.7	24.0	10.5

	All patients (N=1438)			Patients with follow-up (N=1142)				
Anatomical severity (worst CT within 48 hours of admission)	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Diffuse Injury I (no visible pathology)	153	11.1	14.5	113	7.1	3.8	8.0	10.9
(D-II) Diffuse injury II	472	8.3	14.0	354	4.3	3.0	8.4	11.1
Diffuse Injury III (edema)	151	40.3	45.0	127	26.8	12.9	23.5	14.5
Diffuse Injury IV (shift>5mm)	34	55.9	63.6	32	34.4	23.8	18.8	15.4
(5-EML) Evacuated mass lesion	471	30.2	42.1	384	15.7	18.9	21.0	26.6
(6-NEML) Not Evacuated mass lesion	141	52.5	66.7	124	38.2	26.3	41.1	24.2

† Mortality (%)
* from TBI

Popolazione complessiva (42 ICUs) - **Year 2018**
Follow-Up - 'Disability' section - Adult patients

Patients (N): 1141

	All patients (N=1118)		Alive patients (N=573)	
GOSe result :*	**N**	%	**N**	%
Deceased	545	48.7	-	-
Vegetative state	42	3.8	42	7.3
Severe disability LOWER LEVEL	156	14.0	156	27.2
Severe disability UPPER LEVEL	74	6.6	74	12.9
Moderate disability LOWER LEVEL	49	4.4	49	8.6
Moderate disability UPPER LEVEL	80	7.2	80	14
Good recovery LOWER LEVEL	67	6.0	67	11.7
Good recovery UPPER LEVEL	105	9.4	105	18.3

* patients with 'Pre-trauma disability' are not analyzed. **N=1118** patients, instead of 1141 are analyzed.

Disability for main subgroups of patients - N (%)

Age (years)	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
17-45	343	85 (24.8)	15 (4.4)	83 (24.2)	75 (21.9)	85 (24.8)
46-65	307	130 (42.3)	11 (3.6)	81 (26.4)	37 (12.1)	48 (15.6)
66-75	189	112 (59.3)	10 (5.3)	32 (16.9)	9 (4.8)	26 (13.8)
>75	279	218 (78.1)	6 (2.2)	34 (12.2)	8 (2.9)	13 (4.7)

Comorbidities	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Yes	646	399 (61.8)	20 (3.1)	108 (16.7)	56 (8.7)	63 (9.8)
No	472	146 (30.9)	22 (4.7)	122 (25.8)	73 (15.5)	109 (23.1)

Source of admission	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Same hospital	898	422 (47.0)	36 (4.0)	180 (20.0)	114 (12.7)	146 (16.3)
Other hospital	218	122 (56.0)	6 (2.8)	49 (22.5)	15 (6.9)	26 (11.9)
Long-term chronic care hospital	1	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Directly from the community	1	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)

Worst GCS (first 24 hours)	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
3-8	506	316 (62.5)	25 (4.9)	92 (18.2)	31 (6.1)	42 (8.3)
9-13	139	50 (36.0)	1 (0.7)	38 (27.3)	22 (15.8)	28 (20.1)
14-15	107	9 (8.4)	0 (0.0)	26 (24.3)	19 (17.8)	53 (49.5)
Not evaluable	366	170 (46.4)	16 (4.4)	74 (20.2)	57 (15.6)	49 (13.4)

Popolazione complessiva (42 ICUs) - **Year 2018**
Follow-Up - 'Disability' section - Adult patients

Worst GCS during first 24h: best motor response	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
Obeys commands (6)	170	26 (15.3)	0 (0.0)	44 (25.9)	32 (18.8)	68 (40.0)
Localizes pain (5)	196	65 (33.2)	6 (3.1)	54 (27.6)	29 (14.8)	42 (21.4)
Withdraws to pain (4)	85	35 (41.2)	7 (8.2)	19 (22.4)	14 (16.5)	10 (11.8)
Flexion (abnormal) to pain (3)	62	37 (59.7)	3 (4.8)	15 (24.2)	4 (6.5)	3 (4.8)
Extension to pain (2)	56	37 (66.1)	2 (3.6)	10 (17.9)	4 (7.1)	3 (5.4)
None(1)	257	207 (80.5)	9 (3.5)	27 (10.5)	5 (1.9)	9 (3.5)
Not available	292	138 (47.3)	15 (5.1)	61 (20.9)	41 (14.0)	37 (12.7)

GCS trend in 48h	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
GCS 3 stable	100	85 (85.0)	5 (5.0)	8 (8.0)	2 (2.0)	0 (0.0)
GCS from 3 to 4-8	35	19 (54.3)	1 (2.9)	12 (34.3)	2 (5.7)	1 (2.9)
GCS from 3 to > 8	11	2 (18.2)	0 (0.0)	3 (27.3)	2 (18.2)	4 (36.4)
GCS from 4-8 to 3	71	62 (87.3)	1 (1.4)	6 (8.5)	0 (0.0)	2 (2.8)
GCS 4-8 stable	120	58 (48.3)	9 (7.5)	29 (24.2)	15 (12.5)	9 (7.5)
GCS from 4-8 to > 8	50	12 (24.0)	0 (0.0)	11 (22.0)	11 (22.0)	16 (32.0)
GCS from > 8 to 3	44	36 (81.8)	2 (4.5)	4 (9.1)	1 (2.3)	1 (2.3)
GCS from > 8 to 4-8	94	47 (50.0)	6 (6.4)	26 (27.7)	5 (5.3)	10 (10.6)
GCS > 8 stable	262	68 (26.0)	1 (0.4)	66 (25.2)	43 (16.4)	84 (32.1)

Clinically relevant hypotension	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
No	836	376 (45.0)	30 (3.6)	171 (20.5)	113 (13.5)	146 (17.5)
Yes	168	107 (63.7)	4 (2.4)	32 (19.0)	9 (5.4)	16 (9.5)
Not available	111	59 (53.2)	8 (7.2)	27 (24.3)	7 (6.3)	10 (9.0)

Clinically relevant hypoxia	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
No	722	325 (45.0)	27 (3.7)	155 (21.5)	91 (12.6)	124 (17.2)
Yes	271	152 (56.1)	7 (2.6)	47 (17.3)	29 (10.7)	36 (13.3)
Not available	123	66 (53.7)	8 (6.5)	28 (22.8)	9 (7.3)	12 (9.8)

Pupils in the emergency room	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
Bilaterally reactive and/or miotic	603	226 (37.5)	22 (3.6)	153 (25.4)	89 (14.8)	113 (18.7)
Unilaterally dilated and non-reactive	179	112 (62.6)	10 (5.6)	24 (13.4)	19 (10.6)	14 (7.8)
Bilaterally dilated and non-reactive	127	114 (89.8)	4 (3.1)	5 (3.9)	2 (1.6)	2 (1.6)
Not assessable	14	8 (57.1)	1 (7.1)	2 (14.3)	0 (0.0)	3 (21.4)
Not available	34	17 (50.0)	2 (5.9)	10 (29.4)	2 (5.9)	3 (8.8)

Anatomical severity (worst CT within 48 hours of admission)	N	Deceased	Vegetative state(%)	Severe disability(%)	Moderate disability(%)	Good recovery(%)
Diffuse Injury I (no visible pathology)	108	30 (27.8)	1 (0.9)	29 (26.9)	16 (14.8)	32 (29.6)
(D-II) Diffuse injury II	343	85 (24.8)	9 (2.6)	99 (28.9)	57 (16.6)	93 (27.1)
Diffuse Injury III (edema)	127	74 (58.3)	5 (3.9)	24 (18.9)	13 (10.2)	11 (8.7)
Diffuse Injury IV (shift>5mm)	32	21 (65.6)	2 (6.2)	6 (18.8)	0 (0.0)	3 (9.4)
(5-EML) Evacuated mass lesion	376	231 (61.4)	23 (6.1)	58 (15.4)	36 (9.6)	28 (7.4)
(6-NEML) Not Evacuated mass lesion	124	98 (79.0)	2 (1.6)	13 (10.5)	7 (5.6)	4 (3.2)

Popolazione complessiva (33 ICUs) - **Year 2018**
Follow-Up - 'Quality of Life' section - Adult patients

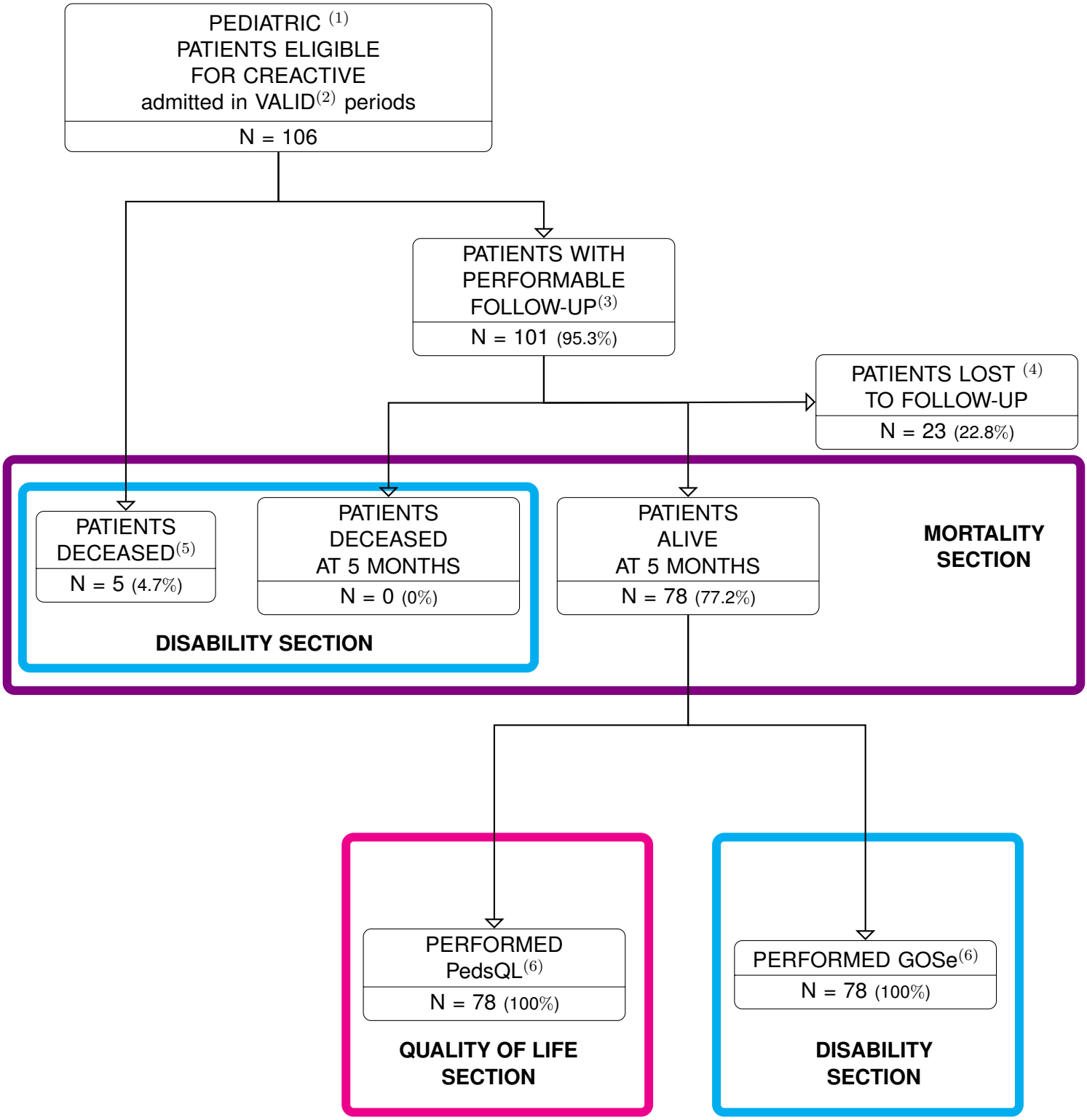
Patients (N): 174

QOLIBRI-OS score:	
Mean	77.8
SD	19.7
Median	83.3
Q1−Q3	66.7−91.7
Min−Max	0−100

			QOLIBRI-OS score:			
Anatomical severity (worst CT within 48 hours of admission) (N=173)	N	%	Mean	SD	Median	Q1-Q3
Diffuse Injury I (no visible pathology)	35	20.2	76.0	20.1	79.2	66.7−91.7
(D-II) Diffuse injury II	89	51.4	78.6	20.1	83.3	70.8−91.7
Diffuse Injury III (edema)	11	6.4	72.7	18.0	79.2	56.2−87.5
Diffuse Injury IV (shift>5mm)	3	1.7	84.7	4.8	87.5	83.3−87.5
(5-EML) Evacuated mass lesion	29	16.8	80.2	19.3	87.5	66.7−95.8
(6-NEML) Not Evacuated mass lesion	6	3.5	67.4	23.3	66.7	51−85.4

			QOLIBRI-OS score:			
GOSe result (N=170)	N	%	Mean	SD	Median	Q1-Q3
Deceased	0	0.0	-	-	-	-
Vegetative state	0	0.0	-	-	-	-
Severe disability	31	18.2	55.7	21.8	54.2	45.8−70.8
Moderate disability	51	30.0	75.9	17.5	79.2	62.5−87.5
Good recovery	88	51.8	86.5	13.6	89.6	79.2−95.8

Overall population with valid data (21 ICUs) - **Year 2018**
Follow-up flow-chart - Pediatric patients



(1) Patients under 17 years of age are considered PEDIATRIC patients.
(2) Periods are considered VALID when the % of complete data for core and petal are over the thresholds.
(3) Patients discharged alive > 5 months from the date of admission.
(4) This also includes patients declining to take part in the follow-up study or who are not contactable.
(5) Patients deceased in ICU or in hospital.
(6) Statistics are presented only for categories of patients represented by at least 5 subjects.

N.B. The % refers to the upper node in the flow chart.

Popolazione complessiva (21 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Pediatric patients

Patients (N): 83

This section presents the mortality-related statistics.
Each of the tables provided is divided into two parts:

- the **first part** of each table (on the left-hand side, printed in black ink) refers to the ICU and the hospital mortality rates for each patient category.
  For example, 4.2% of the 48 patients aged between 9 and 16 years died in the ICU, while 4.2% died in hospital; 0% of the 20 patients aged between 2 and 4 years died in the ICU, while 0% died in hospital.
  This part of the table refers to all **pediatric CREACTIVE patients with valid data**.

- the **second part** of each table (on the right-hand side, printed in purple ink) refers instead to **pediatric CREACTIVE patients with valid data on whom we have 5-month outcome data** (alive or dead). The mortality rate at different time points (irrespective of the place of death - ICU, hospital, home) is shown for these patients: *within 4 days of the trauma event, between 4 and 7 days, between 8 and 30 days, and over 30 days*.
  For example, 34 of the valid pediatric CREACTIVE patients are aged between 9 and 16 years: of these, 3% died within 4 days of the trauma event, while the remaining 97% were still alive at that date. Accordingly, the only patients at risk of dying between 4 and 7 days are the ones still alive at day 4 *(34*0.97=33)*: 0% of these 33 died between 4 and 7 days. At this point, the only patients at risk of dying between 8 and 30 days are the ones who are still alive at day 8 *(i.e., 33*1=33)*; 0% of these died within 30 days.
  Hence, the sum of the percentages in each row does not produce 100%, since the denominator on which the rate is calculated varies for each column. To be precise, it consists of the number of subjects who are still alive at the start of the observation period of each column.

	All patients (N=106)			Patients with follow-up (N=83)				
Age	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Newborn (0-4 weeks)	0	-	-	0	-	-	-	-
1-6 months	0	-	-	0	-	-	-	-
6-12 months	2	0.0	0.0	2	0.0	0.0	0.0	0.0
12-24 months	7	0.0	0.0	5	0.0	0.0	0.0	0.0
2-4 years	20	0.0	0.0	17	0.0	0.0	0.0	0.0
5-8 years	29	10.3	10.3	25	8.0	0.0	4.3	0.0
9-16 years	48	4.2	4.2	34	3.0	0.0	0.0	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Comorbidities	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Yes	10	0.0	0.0	6	0.0	0.0	0.0	0.0
No	95	5.3	5.3	77	3.9	0.0	1.4	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Source of admission	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Same hospital	77	5.3	5.2	58	3.5	0.0	1.8	0.0
Other hospital	22	0.0	0.0	19	0.0	0.0	0.0	0.0
Long-term chronic care hospital	0	-	-	0	-	-	-	-
Directly from the community	7	14.3	14.3	6	16.7	0.0	0.0	0.0

† Mortality (%)
* from TBI

Popolazione complessiva (21 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Pediatric patients

	All patients (N=106)			Patients with follow-up (N=83)				
GCS worst (first 24 hours)	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
3-8	15	14.3	13.3	15	13.3	0.0	0.0	0.0
9-13	30	0.0	0.0	23	0.0	0.0	0.0	0.0
14	27	0.0	0.0	24	0.0	0.0	0.0	0.0
Not evaluable	34	8.8	8.8	21	5.0	0.0	5.3	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Worst GCS during first 24h: best motor response	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Obeys commands (5)	44	0.0	0.0	36	0.0	0.0	0.0	0.0
Localizes pain (4)	18	0.0	0.0	16	0.0	0.0	0.0	0.0
Flexion to pain (3)	4	0.0	0.0	4	0.0	0.0	0.0	0.0
Extension to pain (2)	2	0.0	0.0	2	0.0	0.0	0.0	0.0
None(1)	4	66.7	50.0	4	50.0	0.0	0.0	0.0
Not available	34	8.8	8.8	21	5.0	0.0	5.3	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
GCS trend in 48h	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
GCS 3 stable	1	100.0	100.0	1	100.0	-	-	-
GCS from 3 to 4-8	1	0.0	0.0	0	-	-	-	-
GCS from 3 to > 8	2	0.0	0.0	2	0.0	0.0	0.0	0.0
GCS from 4-8 to 3	1	100.0	100.0	1	100.0	-	-	-
GCS 4-8 stable	7	0.0	0.0	7	0.0	0.0	0.0	0.0
GCS from 4-8 to > 8	14	0.0	0.0	13	0.0	0.0	0.0	0.0
GCS from > 8 to 3	1	-	0.0	1	0.0	0.0	0.0	0.0
GCS from > 8 to 4-8	2	0.0	0.0	2	0.0	0.0	0.0	0.0
GCS > 8 stable	45	0.0	0.0	40	0.0	0.0	0.0	0.0

† Mortality (%)
* from TBI

Popolazione complessiva (21 ICUs) - **Year 2018**
Follow-Up - 'Mortality' section: Mortality for main subgroups of patients - Pediatric patients

	All patients (N=106)			Patients with follow-up (N=83)				
Clinically relevant hypotension	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
No	77	2.6	2.6	67	1.5	0.0	0.0	0.0
Yes	6	33.3	33.3	6	16.7	0.0	20.0	0.0
Not available	18	5.6	5.6	10	10.0	0.0	0.0	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Clinically relevant hypoxia	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
No	60	3.4	3.3	53	1.9	0.0	0.0	0.0
Yes	25	8.0	8.0	22	4.5	0.0	4.8	0.0
Not available	16	6.2	6.2	8	12.5	0.0	0.0	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Pupils in the emergency room	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Bilaterally reactive and/or miotic	56	1.8	1.8	50	0.0	0.0	2.0	0.0
Unilaterally dilated and non-reactive	9	11.1	11.1	6	16.7	0.0	0.0	0.0
Bilaterally dilated and non-reactive	2	100.0	100.0	2	100.0	-	-	-
Not assessable	1	0.0	0.0	1	0.0	0.0	0.0	0.0
Not available	5	0.0	0.0	4	0.0	0.0	0.0	0.0

	All patients (N=106)			Patients with follow-up (N=83)				
Anatomical severity (worst CT within 48 hours of admission)	**N**	**† in ICU(%)**	**† in H(%)**	**N**	**† within 4 days(%)***	**† 4-7 days(%)***	**† 8-30 days(%)***	**† over 30 days(%)***
Diffuse Injury I (no visible pathology)	20	0.0	0.0	17	0.0	0.0	0.0	0.0
(D-II) Diffuse injury II	44	0.0	0.0	34	0.0	0.0	0.0	0.0
Diffuse Injury III (edema)	11	36.4	36.4	10	33.3	0.0	0.0	0.0
Diffuse Injury IV (shift>5mm)	2	0.0	0.0	1	0.0	0.0	0.0	0.0
(5-EML) Evacuated mass lesion	24	4.3	4.2	20	0.0	0.0	5.0	0.0
(6-NEML) Not Evacuated mass lesion	1	0.0	0.0	1	0.0	0.0	0.0	0.0

† Mortality (%)
* from TBI

Popolazione complessiva (16 ICUs) - **Year 2018**
Follow-Up - 'Disability' section - Pediatric patients

Patients (N): 83

	All patients (N=83)		Alive patients (N=78)	
GOSe result :*	**N**	%	**N**	%
Deceased	5	6.0	-	-
VEGETATIVE STATE	2	2.4	2	2.6
Severe disability LOWER LEVEL	9	10.8	9	11.5
Severe disability UPPER LEVEL	5	6.0	5	6.4
Moderate disability LOWER LEVEL	5	6.0	5	6.4
Moderate disability UPPER LEVEL	13	15.7	13	16.7
Good recovery LOWER LEVEL	10	12.0	10	12.8
Good recovery UPPER LEVEL	34	41.0	34	43.6

* patients with 'Pre-trauma disability' are not analyzed.

Disability for main subgroups of patients - N (%)

Age	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Newborn (0-4 weeks)	0	-	-	-	-	-
1-6 months	0	-	-	-	-	-
6-12 months	2	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)
12-24 months	5	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (100.0)
2-4 years	17	0 (0.0)	1 (5.9)	4 (23.5)	2 (11.8)	10 (58.8)
5-8 years	25	3 (12.0)	1 (4.0)	6 (24.0)	5 (20.0)	10 (40.0)
9-16 years	34	2 (5.9)	0 (0.0)	4 (11.8)	11 (32.4)	17 (50.0)

Comorbidities	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Yes	6	0 (0.0)	0 (0.0)	4 (66.7)	0 (0.0)	2 (33.3)
No	77	5 (6.5)	2 (2.6)	10 (13.0)	18 (23.4)	42 (54.5)

Source of admission	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Same hospital	58	4 (6.9)	1 (1.7)	10 (17.2)	14 (24.1)	29 (50.0)
Other hospital	19	0 (0.0)	1 (5.3)	3 (15.8)	3 (15.8)	12 (63.2)
Long-term chronic care hospital	0	-	-	-	-	-
Directly from the community	6	1 (16.7)	0 (0.0)	1 (16.7)	1 (16.7)	3 (50.0)

GCS worst (first 24 hours)	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
3-8	15	2 (13.3)	0 (0.0)	4 (26.7)	5 (33.3)	4 (26.7)
9-13	23	0 (0.0)	0 (0.0)	2 (8.7)	4 (17.4)	17 (73.9)
14	24	0 (0.0)	0 (0.0)	2 (8.3)	7 (29.2)	15 (62.5)
Not evaluable	21	3 (14.3)	2 (9.5)	6 (28.6)	2 (9.5)	8 (38.1)

Popolazione complessiva (16 ICUs) - **Year 2018**
Follow-Up - 'Disability' section - Pediatric patients

Worst GCS during first 24h: best motor response	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Obeys commands (5)	36	0 (0.0)	0 (0.0)	3 (8.3)	10 (27.8)	23 (63.9)
Localizes pain (4)	16	0 (0.0)	0 (0.0)	1 (6.2)	4 (25.0)	11 (68.8)
Flexion to pain (3)	4	0 (0.0)	0 (0.0)	0 (0.0)	2 (50.0)	2 (50.0)
Extension to pain (2)	2	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)
None(1)	4	2 (50.0)	0 (0.0)	2 (50.0)	0 (0.0)	0 (0.0)
Not available	21	3 (14.3)	2 (9.5)	6 (28.6)	2 (9.5)	8 (38.1)

GCS trend in 48h	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
GCS 3 stable	1	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
GCS from 3 to 4-8	0	-	-	-	-	-
GCS from 3 to > 8	2	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)
GCS from 4-8 to 3	1	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
GCS 4-8 stable	7	0 (0.0)	0 (0.0)	3 (42.9)	0 (0.0)	4 (57.1)
GCS from 4-8 to > 8	13	0 (0.0)	0 (0.0)	2 (15.4)	5 (38.5)	6 (46.2)
GCS from > 8 to 3	1	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)
GCS from > 8 to 4-8	2	0 (0.0)	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)
GCS > 8 stable	40	0 (0.0)	0 (0.0)	3 (7.5)	9 (22.5)	28 (70.0)

Clinically relevant hypotension	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
No	67	2 (3.0)	1 (1.5)	10 (14.9)	17 (25.4)	37 (55.2)
Yes	6	2 (33.3)	1 (16.7)	1 (16.7)	0 (0.0)	2 (33.3)
Not available	10	1 (10.0)	0 (0.0)	3 (30.0)	1 (10.0)	5 (50.0)

Clinically relevant hypoxia	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
No	53	2 (3.8)	0 (0.0)	9 (17.0)	12 (22.6)	30 (56.6)
Yes	22	2 (9.1)	1 (4.5)	3 (13.6)	6 (27.3)	10 (45.5)
Not available	8	1 (12.5)	1 (12.5)	2 (25.0)	0 (0.0)	4 (50.0)

Pupils in the emergency room	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Bilaterally reactive and/or miotic	50	1 (2.0)	1 (2.0)	9 (18.0)	12 (24.0)	27 (54.0)
Unilaterally dilated and non-reactive	6	1 (16.7)	0 (0.0)	2 (33.3)	2 (33.3)	1 (16.7)
Bilaterally dilated and non-reactive	2	2 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Not assessable	1	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
Not available	4	0 (0.0)	0 (0.0)	2 (50.0)	0 (0.0)	2 (50.0)

Anatomical severity (worst CT within 48 hours of admission)	N	**Deceased**	**Vegetative state(%)**	**Severe disability(%)**	**Moderate disability(%)**	**Good recovery(%)**
Diffuse Injury I (no visible pathology)	17	0 (0.0)	1 (5.9)	1 (5.9)	4 (23.5)	11 (64.7)
(D-II) Diffuse injury II	34	0 (0.0)	0 (0.0)	5 (14.7)	7 (20.6)	22 (64.7)
Diffuse Injury III (edema)	10	4 (40.0)	1 (10.0)	2 (20.0)	1 (10.0)	2 (20.0)
Diffuse Injury IV (shift>5mm)	1	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)
(5-EML) Evacuated mass lesion	20	1 (5.0)	0 (0.0)	4 (20.0)	6 (30.0)	9 (45.0)
(6-NEML) Not Evacuated mass lesion	1	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)

Popolazione complessiva (14 ICUs) - **Year 2018**
Follow-Up - 'Quality of Life' section - Pediatric patients

Patients (N): 78

PedsQL - TOTAL SCORE	
Mean	76.2
SD	25.9
Median	84
Q1−Q3	58.5−96
Min−Max	0−100

			PedsQL - TOTAL SCORE			
Anatomical severity (worst CT within 48 hours of admission) (N=78)	N	%	Mean	SD	Median	Q1-Q3
Diffuse Injury I (no visible pathology)	17	21.8	77.9	30.2	90.0	82−95
(D-II) Diffuse injury II	34	43.6	80.6	23.8	94.0	72.2−97.8
Diffuse Injury III (edema)	6	7.7	61.3	38.4	73.5	40−87.5
Diffuse Injury IV (shift>5mm)	1	1.3	34.0	-	34.0	34−34
(5-EML) Evacuated mass lesion	19	24.4	73.6	19.9	79.0	57.5−93.5
(6-NEML) Not Evacuated mass lesion	1	1.3	79.0	-	79.0	79−79

			PedsQL - TOTAL SCORE			
GOSe result (N=78)	N	%	Mean	SD	Median	Q1-Q3
Deceased	0	0.0	-	-	-	-
Vegetative state	2	2.6	0.0	0.0	0.0	0−0
Severe disability	14	17.9	47.4	20.4	47.5	34.8−61
Moderate disability	18	23.1	69.0	15.5	74.0	57.2−79.8
Good recovery	44	56.4	91.7	13.2	95.5	91.8−100