Trauma registry of acute care (TRAC) – CHUV

Annual Report 2014

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Summary

1. Introduction

This report aims at presenting an overview of the characteristics of trauma patients admitted to the Lausanne University Hospital (CHUV) from the 1st of January to the 31st of December 2014. Analysis of data is performed based on data from the institutional Traumaregistry "TRAC".

2. Methodology

Inclusion criteria

This report includes all the patients admitted to CHUV shock room during the year 2014 after having sustained a physical injury. For comparison, values from 2013 are either mentioned in the text, inserted in brackets ([ ]) or displayed as graph in pale red.

Data collection and codification

Data collection and entry is performed by a trained data-manager on the basis of patients' electronic files. About 30% of the items are entered via automatic links with hospital databases; the remaining items are manually gathered from patient files. Codification of patients' injuries is done following AIS/ISS 2008 international standards by a AAAM-trained nurse (Association for the Advancement of Automotive Medicine) (1).

Statistics

Statistics and graphics were performed using Microsoft Office 2007 Excel© and JMP© 10, 2012. Results are expressed in percentages for frequencies. When necessary, a measure of dispersion was given using median, lower and upper interquartile ranges (IQR1/IQR3), representing respectively 25% and 75% of the headcounts.

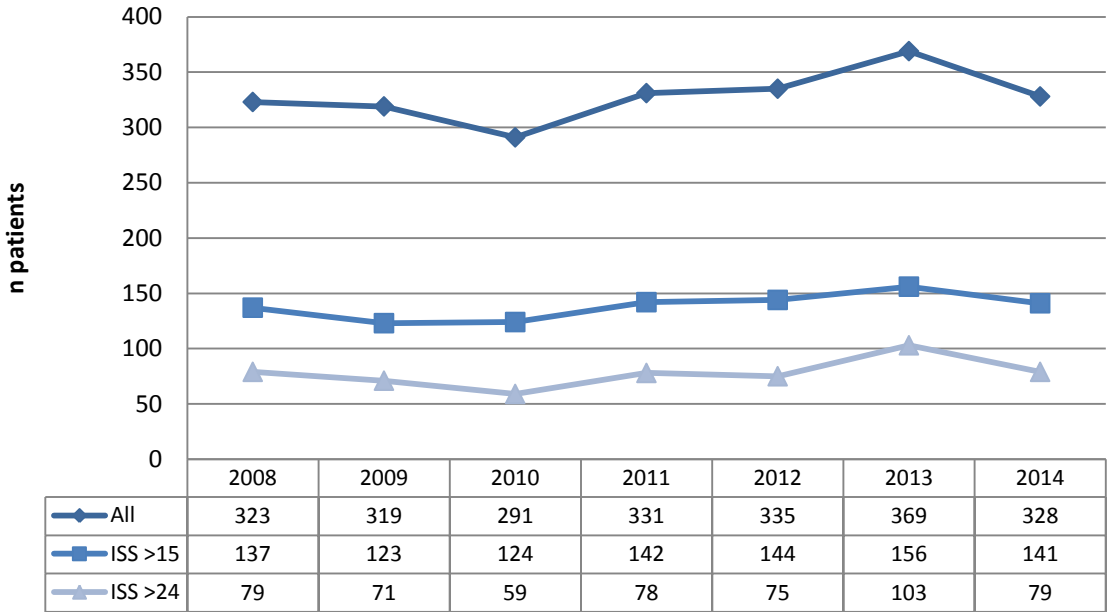
3. Results

a) Patients' characteristics

During 2014, 328 patients were admitted to CHUV shock room: their median age was 37.2 years (21/62.2). The graphic 1 shows the trends in admission rates – overall and considering ISS – over the last six years.

Median injury of severity score (ISS) was 13 (4/23.5). Severely injured patients, defined as an ISS>15 accounted for 43% (141) and 79 (24.1%) presented with critical injuries (ISS > 24).

Graph.1:



	2008	2009	2010	2011	2012	2013	2014
All	323	319	291	331	335	369	328
ISS >15	137	123	124	142	144	156	141
ISS >24	79	71	59	78	75	103	79

Table 1 displays ASA-classes[1] established based on patient's co-morbidities as listed in their discharge letter:

Tab 1:

2014:

ASA-Class	ASA 1	54.9%
	ASA 2	26.8%
	ASA 3	12.5%
	ASA 4	1.8%
	Unknown	4.0%

2013:

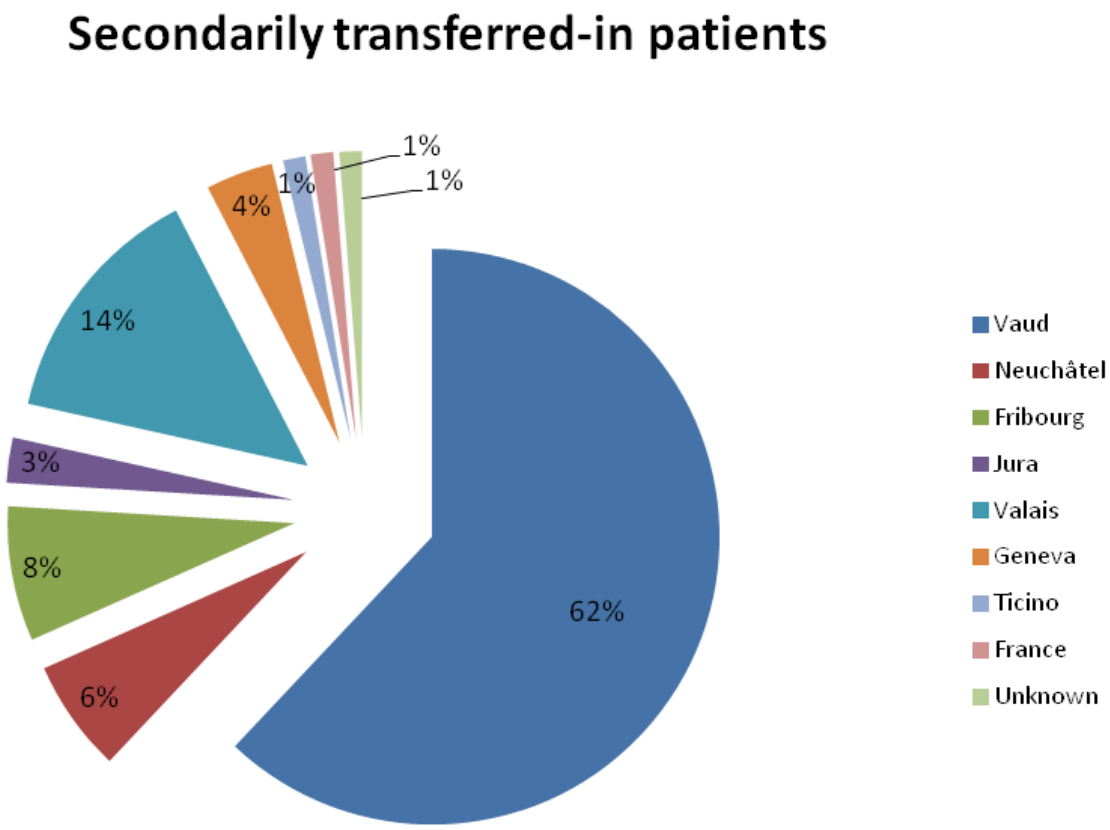
ASA-Class	*ASA 1*	*60.7%*
	ASA 2	*24.4%*
	ASA 3	*8.1%*
	ASA 4	*0.5%*
	Unknown	*3.0%*

[1] The ASA score, or « the physical status score », was developed by the American Anaesthesiology Society in 1941 in order to assess the pre-operatory health status of a patient and the risk he dies during a surgery.

b) Inter-hospital transfers

24.1% [14.9%] of the patients were initially treated in a different hospital and secondarily transferred to CHUV shock room. 22.8% of the secondarily transferred in patients were burn patients and 37.9% paediatric patients.
Median ISS of transferred in patients was 13 (7-25), 32.9% were directly transferred from shockroom to OR and/or angio suite and in-hospital mortality rate was 8.9%.

Graph.2:

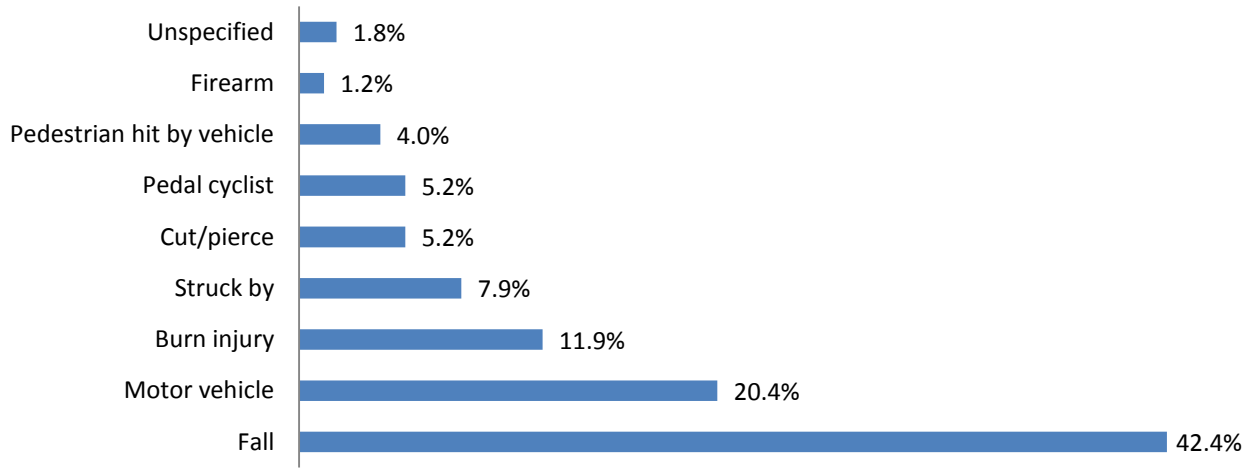


c) Trauma characteristics

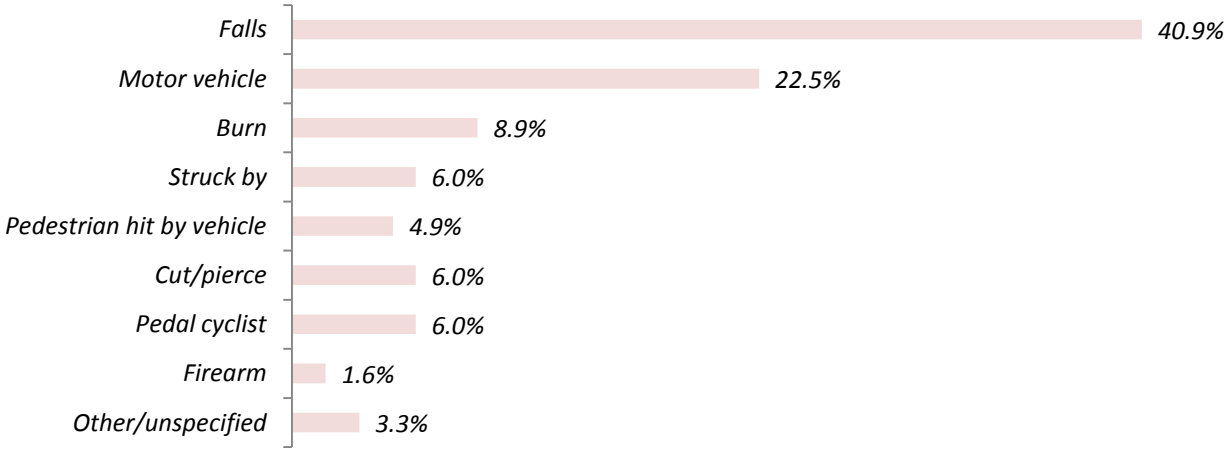
Mechanism of injury

Graph. 3:

2014



2013



In 2014, 29.6 % of admitted patients were injured during a road traffic accident as compared to 33.3% in 2013. Over the period from 2008 to 2012, road traffic incidents were the main mechanism of injury [41.2%], followed by falls [34.2%].

Injury intent (as based on clinical judgement)

Graph.4:

2014

2013

Type of trauma

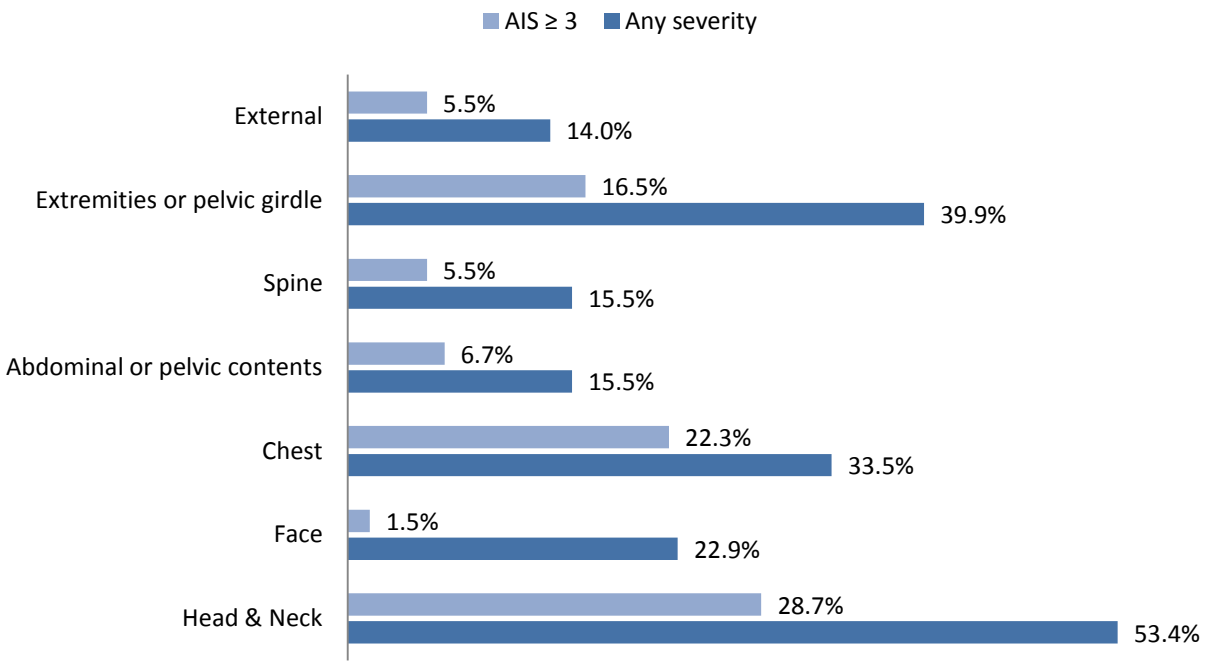
The rate of penetrating trauma during 2014 was 5.2 as compared to 8.2% in 2013.

Injured body regions

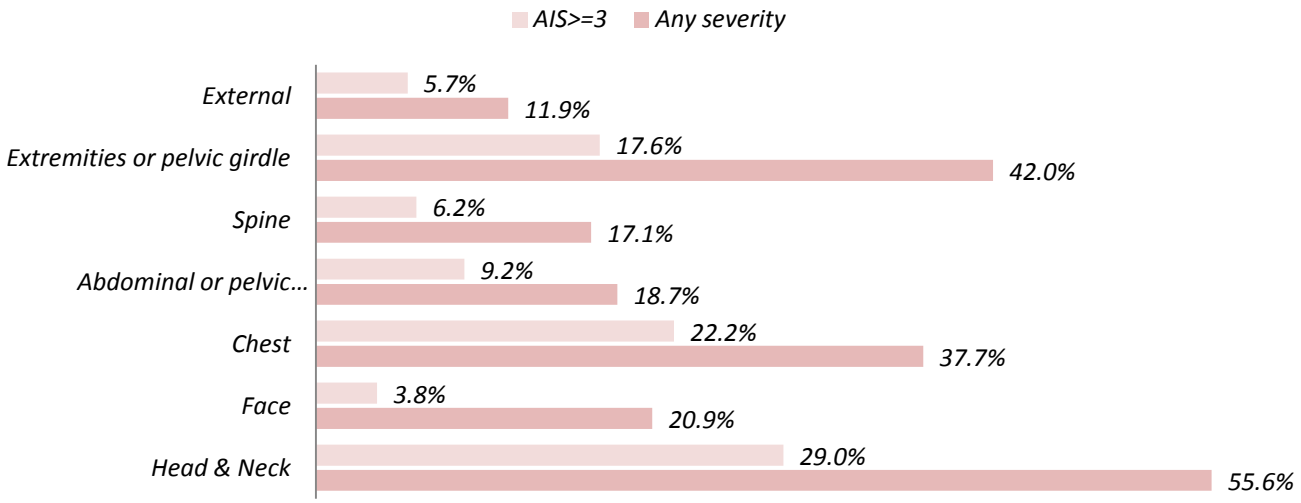
Incidence of overall injuries per body region and serious injuries per body region, defined as a score of AIS≥3, are shown in the graph below:

Graph. 5:

2014



2013

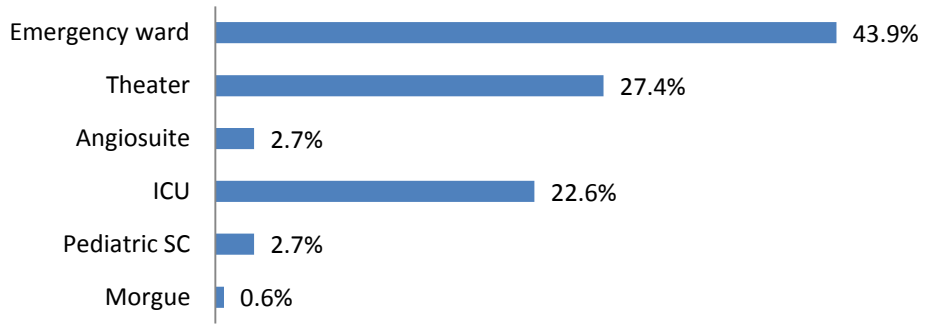


d) Medical support after shock room care

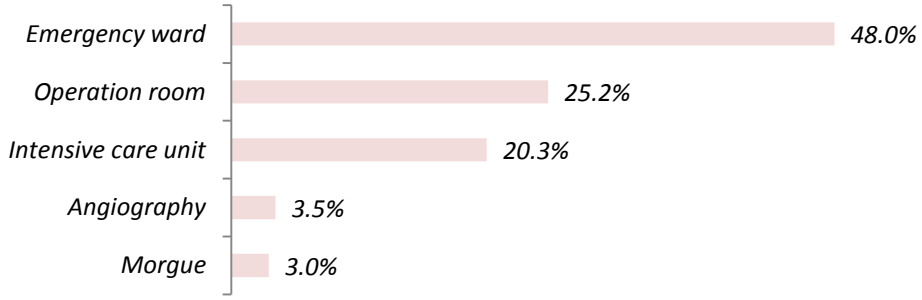
Transfer destination from shock room

Graph. 6:

2014



2013



e) Length of stay

Tab.2:

2014

	Hospital LOS (days)	
	Overall	**ISS > 15**
Median (IQR)	7 (2/17)	11 (4/28)

2013

	Hospital LOS (days)	
	Overall	***ISS > 15***
Median (IQR)	*5 (1/17)*	*9 (2/13)*

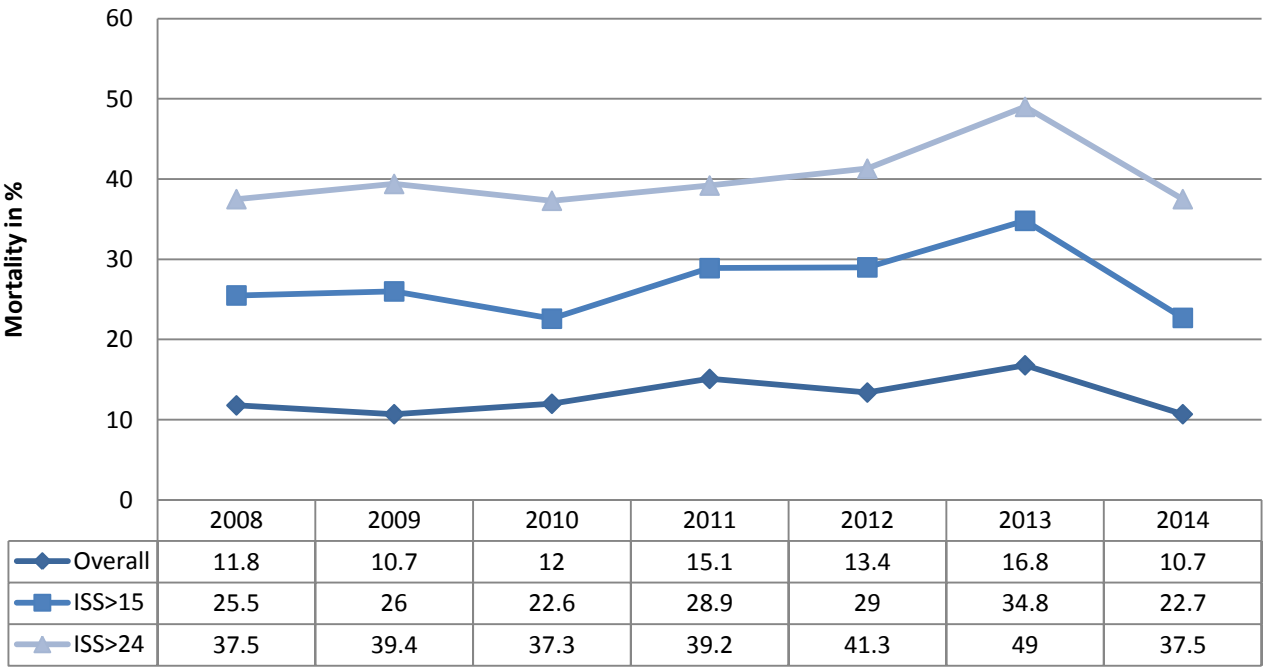
Within their hospital stay, 48.5% (40.7% in 2013) of the included patients were admitted to the intensive care unit (ICU) at a given time.

Tab.3:

	ICU LOS (days)	
	2014	***2013***
Median (IQR)	4 (2/9)	*4 (2/11.8)*

f) Mortality and probability of survival

Graph. 7:



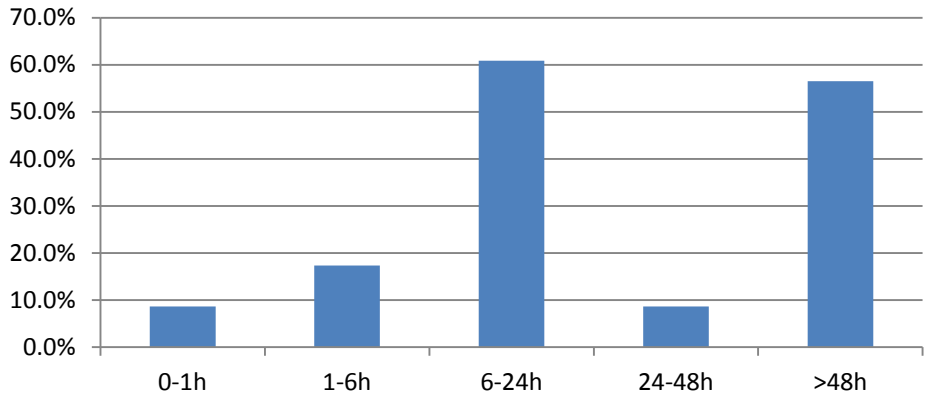
	2008	2009	2010	2011	2012	2013	2014
Overall	11.8	10.7	12	15.1	13.4	16.8	10.7
ISS>15	25.5	26	22.6	28.9	29	34.8	22.7
ISS>24	37.5	39.4	37.3	39.2	41.3	49	37.5

Timing of death

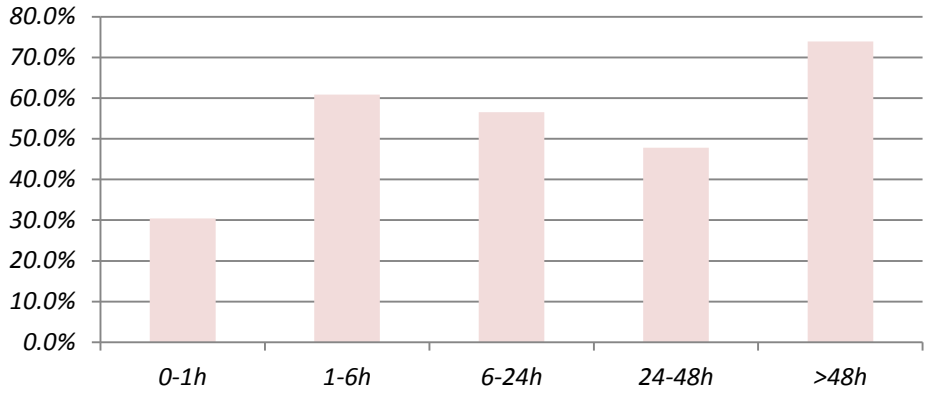
Graph 8 shows the timing of in-hospital death in hours after admission.

Graph. 8:

2014



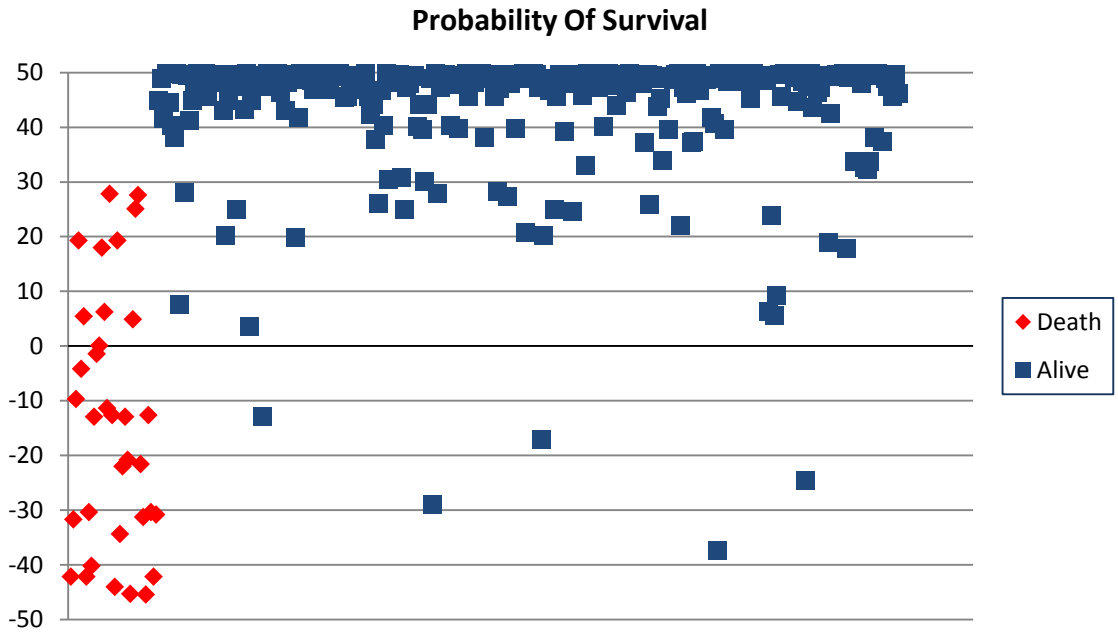
2013



Calculated probability of survival

The following graph represents the calculated probability of survival (PS12) compared to the effective mortality. Each dot represents a patient. The 0-line represents the cut-off of 50% of calculated probability of survival.

Graph. 9:



4. Acknowledgments

We would like to thank all participating staff and departments that contributed to data-collection within TRAC. A special thank goes to the departments of Anaesthesiology, Emergency Medicine, Intensive care, Orthopaedic surgery, Visceral Surgery as members of the steering committee of the "Filière Trauma" and to Prof. J.-B. Wasserfallen, medical director of CHUV.

5. References

(1) Committee on Medical Aspects of Automotive Safety. Rating the severity of tissue damage. I. The abbreviated scale. JAMA. 1971; 215(2):277-80. doi:10.1001/jama.1971.03180150059012