Established in 1871

Swiss Medical Weekly

Formerly: Schweizerische Medizinische Wochenschrift
An open access, online journal • www.smw.ch

Appendix 1

The capacity of baseline patient, injury, treatment and outcome data to predict reduced capacity to work and accident insurer costs – a Swiss prospective 4-year longitudinal trauma centre evaluation

Thomas Gross, Sabrina Morell, Stefan M. Scholz, Felix Amsler

Original article | doi:10.4414/smw.2019.20144
Cite this as: Swiss Med Wkly. 2019;149:w20144 (Appendix)

Supplementary tables

Table S1: Details of RCW and other accident-insurer data for the more severely injured (ISS >15) versus others (ISS ≤15).

Variables	Total (n = 346)	ISS ≤15 (n = 220)	ISS >15 (n = 126)	R^2	p-value
	Mean ± SD and median (quartiles) or n (%)	Mean ± SD and median (quartiles) or n (%)	Mean ± SD and median (quartiles) or n (%)		
PRCW 1 year (%)	27.0 ± 41.9 0 (0: 55)	18.3 ± 36.1 0 (0: 0)	42.1 ± 47.0 0 (0: 100)	0.07	<0.001
PRCW 2 years (%)	18.0 ± 36.0 0 (0: 0)	11.6 ± 29.6 0 (0: 0)	29.1 ± 43.0 0 (0: 85)	0.05	<0.001
PRCW 3 years (%)	14.3 ± 32.7 0 (0: 0)	7.6 ± 24.2 0 (0: 0)	26.21 ± 41.4 0 (0: 50)	0.07	<0.001
PRCW 4 years (%)	13.7 ± 31.7 0 (0: 0)	6.5 ± 22.6 0 (0: 0)	26.4 ± 40.4 0 (0: 50)	0.09	<0.001
Mean PRCW 1–4 years (%)	18.1 ± 31.1 0 (0: 26)	11.0 ± 24 0 (0: 2.5)	30.6 ± 37.7 6 (0: 54)	0.09	<0.001
Integrity compensation rate	9.3 ± 20.6 0 (0: 10)	2.8 ± 7.1 0 (0: 0)	20.8 ± 29.7 0 (0: 35)	0.18	<0.001
Direct healthcare costs	80,110 ± 117,530 36,870 (15,850: 88,810	46,500 ± 53,600 26,440 (12,420: 63,810)	138,800 ± 166,220 71,730 (28,010: 188,510)	0.15 (log)	<0.001
Insurance costs without direct healthcare costs	96,140 ± 236,930 20,050 (5840: 70,550)	48,980 ± 111,100 14,240 (5070: 45,120)	178,480 ± 350,090 49,890 (8680: 174,670)	0.08 (log)	<0.001
Total insurance costs	176,250 ± 314,800 64,680 (23,890: 204,040)	95,480 ± 142,490 45,930 (20,150: 101,220)	317,280 ± 454,330 143,190 (40,540: 388,090)	0.15 (log)	<0.001
RCW 1 year	113 (32.7%)	52 (23.6%)	61 (48.4%)	0.06	<0.001
RCW 2 year	80 (23.1%)	35 (15.9%)	45 (35.7%)	0.05	<0.001
RCW 3 year	68 (19.6%)	27 (12.3%)	41 (32.5%)	0.06	<0.001
RCW 4 year	69 (19.9%)	24 (10.9%)	45 (35.7%)	0.09	<0.001
RCW 1-4 years	121 (35.0%)	56 (25.5%)	65 (51.6%)	0.07	<0.001
Integrity compensation (yes)	102 (29.5%)	42 (19.1%)	60 (47.6%)	0.09	<0.001

ISS = Injury Severity Score; PRCW = Percentage incapacity for work; RCW = reduced capacity to work after injury, given for each of years 1–4; SD = standard deviation. (In some cases RCW occurred only once during the 4-year observation period.)

Table S2: Details of RCW and integrity compensation rate for the individual years 1–4 following injury in the more severely injured (ISS >15) versus others (ISS ≤15).

		Total (n = 346)	**ISS ≤15 (n = 220)**	**ISS >15 (n = 126)**	**p-value**
RCW year 1	None (0%)	233 (67.3%)	168 (76.4%)	65 (51.6%)	<0.001
	Partly	36 (10.4%)	21 (9.5%)	15 (11.9%)	
	Fully (100%)	77 (22.3%)	31 (14.1%)	46 (36.5%)	
RCW year 2	None (0%)	266 (76.9%)	185 (84.1%)	81 (64.3%)	<0.001
	Partly	30 (8.7%)	16 (7.3%)	14 (11.1%)	
	Fully (100%)	50 (14.5%)	19 (8.6%)	31 (24.6%)	
RCW year 3	None (0%)	278 (80.3%)	193 (87.7%)	85 (67.5%)	<0.001
	Partly	29 (8.4%)	15 (6.8%)	14 (11.1%)	
	Fully (100%)	39 (11.3%)	12 (5.5%)	27 (21.4%)	
RCW year 4	None (0%)	277 (80.1%)	196 (89.1%)	81 (64.3%)	<0.001
	Partly	33 (9.5%)	13 (5.9%)	20 (15.9%)	
	Fully (100%)	36 (10.4%)	11 (5.0%)	25 (19.8%)	

ISS = Injury Severity Score; RCW = reduced capacity to work;

Table S3: Multivariate analysis of hospital variables one year after injury of survivors of trauma controlled for the PRCW in the first year explaining the mean PRCW 2–4 years following injury.

Block	**Model**	**Variable**	**Total model**					**Change at each step**			
			B	**95% CI**		**Beta**	**p-value**	**R^2**	**Adjusted R^2**	**R^2 change**	**p-value change**
				Lower limit	**Upper limit**						
		(Constant)	53.31	25.00	81.62		0.000				
1	1	PRCW year 1	0.42	0.36	0.48	0.57	0.000	0.49	0.49	0.49	0.000
3	2	Car accident	8.39	1.95	14.84	0.09	0.011	0.49	0.49	0.01	0.037
4	3	AIS head	2.18	0.70	3.65	0.11	0.004	0.51	0.50	0.01	0.002
	4	AIS spine	2.20	0.28	4.12	0.08	0.025	0.52	0.51	0.01	0.003
	5	1st pulse	0.09	−0.03	0.21	0.05	0.139	0.53	0.52	0.01	0.043
5	6	LEP total	0.00	0.00	0.00	0.13	0.003	0.54	0.53	0.01	0.006
	7	Intubation (ICU)	−10.18	−16.75	−3.62	−0.14	0.002	0.54	0.53	0.01	0.039
6	8	GOS (hospital discharge)	−13.43	−18.38	−8.48	−0.22	0.000	0.58	0.57	0.04	0.000

AIS = Abbreviated Injury Scale; CI = confidence interval; GOS = Glasgow Outcome Scale; LEP total = nursing workload per patient; PRCW = percentage reduced capacity to work (mean, at year 1 and between years 2–4 following injury)
Linear stepwise regression analysis: block 1 = demographic variables; block 2 = trauma mechanism; block 3 = injury-related variables; block 4 = treatment-related variables; block 5 = patient condition at hospital discharge

Table S4: Multivariate analysis of demographic, injury, and early hospital characteristics of survivors of trauma explaining logarithmic direct healthcare costs.

Block	Model	Variable	Total model					Change at each step			
			B	95% CI		Beta	p-value	R^2	Adjusted R^2	R^2 change	p-value change
				Lower limit	Upper limit						
		(Constant)	5.21	4.77	5.64		0.000				
1	1	Swiss	−0.13	−0.21	−0.05	−0.11	0.001	0.01	0.01	0.01	0.049
2	2	High trauma energy	−0.02	−0.09	0.06	−0.02	0.678	0.04	0.03	0.03	0.002
3	3	1st GCS <13	0.03	−0.10	0.15	0.02	0.672	0.14	0.13	0.10	0.000
	4	AIS extremities	0.08	0.05	0.12	0.19	0.000	0.21	0.20	0.07	0.000
	5	AIS spine	0.07	0.04	0.10	0.16	0.000	0.27	0.26	0.06	0.000
	6	AIS head	0.01	−0.02	0.04	0.03	0.432	0.30	0.28	0.02	0.001
4	7	LOS (days)	0.01	0.01	0.02	0.20	0.000	0.45	0.43	0.15	0.000
	8	ICU admission	0.19	0.10	0.27	0.18	0.000	0.50	0.48	0.05	0.000
	9	Surgery	0.18	0.10	0.27	0.17	0.000	0.53	0.51	0.03	0.000
5	10	Not discharged home	0.21	0.09	0.32	0.19	0.001	0.61	0.60	0.08	0.000
	11	GOS (hospital discharge)	−0.24	−0.32	−0.16	−0.24	0.000	0.64	0.63	0.03	0.000
	12	Rehabilitation clinic after hospital discharge	0.15	0.03	0.28	0.13	0.018	0.64	0.63	0.01	0.018

AIS = Abbreviated Injury Scale; CI = confidence interval; GCS = Glasgow Coma Scale age and arterial pressure; GOS = Glasgow Outcome Scale at the time of hospital discharge; ICU = intensive care unit; LOS = length of hospital stay
Linear stepwise regression analysis: block 1 = demographic variables; block 2 = trauma mechanism; block 3 = injury-related variables; block 4 = treatment-related variables; block 5 = patient condition at hospital discharge

Table S5: Multivariate analysis of demographic, injury, and early hospital characteristics of survivors of trauma explaining logarithmic integrity compensation (insurance costs without direct healthcare costs).

Block	Model	Variable	Total model					Change at each step			
			B	95% CI		Beta	p-value	R^2	Adjusted R^2	R^2 change	p-value change
				Lower limit	Upper limit						
		(Constant)	3.21	2.95	3.46		0.000				
1	1	Age at injury (years)	0.02	0.01	0.02	0.31	0.000	0.13	0.12	0.13	0.000
	2	Gender, female	−0.25	−0.45	−0.06	−0.11	0.011	0.16	0.15	0.03	0.000
	3	Swiss	−0.30	−0.45	−0.16	−0.17	0.000	0.18	0.18	0.03	0.001
2	4	High fall	0.14	−0.03	0.31	0.07	0.117	0.20	0.19	0.02	0.009
3	5	AIS extremities	0.15	0.09	0.21	0.24	0.000	0.27	0.26	0.07	0.000
	6	AIS spine	0.09	0.03	0.15	0.13	0.003	0.30	0.29	0.03	0.000
	7	1st GCS <13	−0.12	−0.34	0.10	−0.05	0.272	0.32	0.31	0.02	0.001
	8	AIS head	0.02	−0.03	0.07	0.04	0.389	0.33	0.32	0.01	0.027
4	9	LOS (days)	0.01	0.00	0.02	0.14	0.005	0.39	0.37	0.06	0.000
	10	ICU admission	0.17	0.01	0.32	0.11	0.036	0.40	0.39	0.02	0.003
	11	Surgery	0.12	−0.03	0.28	0.08	0.124	0.41	0.39	0.01	0.015
5	12	GOS not well recovered	0.51	0.30	0.73	0.23	0.000	0.46	0.44	0.04	0.000
	13	Rehabilitation clinic after leaving hospital	0.20	0.03	0.37	0.12	0.020	0.46	0.44	0.58	5.471

AIS = Abbreviated Injury Scale; CI = confidence interval; GCS = Glasgow Coma Scale age and arterial pressure; GOS = Glasgow Outcome Scale at the time of hospital discharge; ICU = intensive care unit; LOS = length of hospital stay
Linear stepwise regression analysis: block 1 = demographic variables; block 2 = trauma mechanism; block 3 = injury-related variables; block 4 = treatment-related variables; block 5 = patient condition at hospital discharge