

SUPPLEMENTARY MATERIAL**Table s1: Linked Data Used in this Study**

Data Sets	Description
Welsh Demographic Service Dataset (WSDS).	Demographic data
Annual District Birth Extract (ADBE)	Birth register data
Annual District Death Extract (ADDE)	Death register data
Patient Episode Database for Wales (PEDW)	Hospital inpatient data
National Community Health Database (NCCHD)	Health data
Education Wales (EDUW) database	Educational data

Table s2: Key Stage 2 General Characteristics

	Total N=34061	No N=7367	Yes N=26694	p-value
School year				
6	34061 (100.0%)	7367 (100.0%)	26694 (100.0%)	
Calendar year				<0.001
2009	5040 (14.8%)	1369 (18.6%)	3671 (13.8%)	
2010	5063 (14.9%)	1365 (18.5%)	3698 (13.9%)	
2011	4663 (13.7%)	1127 (15.3%)	3536 (13.2%)	
2012	4217 (12.4%)	918 (12.5%)	3299 (12.4%)	
2013	4251 (12.5%)	833 (11.3%)	3418 (12.8%)	
2014	3526 (10.4%)	637 (8.6%)	2889 (10.8%)	
2015	3565 (10.5%)	565 (7.7%)	3000 (11.2%)	
2016	3736 (11.0%)	553 (7.5%)	3183 (11.9%)	
Hospital admission type				<0.001
Non-injury only	3418 (10.0%)	809 (11.0%)	2609 (9.8%)	
Injury only	7718 (22.7%)	1398 (19.0%)	6320 (23.7%)	
Both injury & non-injury	20995 (61.6%)	4801 (65.2%)	16194 (60.7%)	
No hospital admission	1930 (5.7%)	359 (4.9%)	1571 (5.9%)	
Townsend decile				<0.001
1 - Least deprived	2539 (7.5%)	294 (4.0%)	2245 (8.4%)	
2	2298 (6.7%)	319 (4.3%)	1979 (7.4%)	
3	2585 (7.6%)	369 (5.0%)	2216 (8.3%)	
4	2656 (7.8%)	438 (5.9%)	2218 (8.3%)	
5	2812 (8.3%)	533 (7.2%)	2279 (8.5%)	
6	3132 (9.2%)	670 (9.1%)	2462 (9.2%)	
7	3191 (9.4%)	710 (9.6%)	2481 (9.3%)	
8	3328 (9.8%)	801 (10.9%)	2527 (9.5%)	
9	3545 (10.4%)	939 (12.7%)	2606 (9.8%)	
10 - Most deprived	4448 (13.1%)	1344 (18.2%)	3104 (11.6%)	
Missing	3527 (10.4%)	950 (12.9%)	2577 (9.7%)	
Change in Townsend decile				<0.001
No change in Townsend	19368 (56.9%)	3688 (50.1%)	15680 (58.7%)	
Changed to less deprived area	5746 (16.9%)	1358 (18.4%)	4388 (16.4%)	
Changed to more deprived area	4457 (13.1%)	1169 (15.9%)	3288 (12.3%)	
Missing	4490 (13.2%)	1152 (15.6%)	3338 (12.5%)	
Eligible for free school meal				<0.001
No	25464 (74.8%)	4224 (57.3%)	21240 (79.6%)	
Yes	8597 (25.2%)	3143 (42.7%)	5454 (20.4%)	
Required special educational Needs				<0.001
No	22413 (65.8%)	1088 (14.8%)	21325 (79.9%)	
Yes	11648 (34.2%)	6279 (85.2%)	5369 (20.1%)	
School size				<0.001
<=100 pupils	2967 (8.7%)	746 (10.1%)	2221 (8.3%)	
>100-150 pupils	3087 (9.1%)	720 (9.8%)	2367 (8.9%)	
>150-200 pupils	4401 (12.9%)	947 (12.9%)	3454 (12.9%)	
>200-300 pupils	8190 (24.0%)	1704 (23.1%)	6486 (24.3%)	
>300 pupils	9715 (28.5%)	1810 (24.6%)	7905 (29.6%)	
Missing	5701 (16.7%)	1440 (19.5%)	4261 (16.0%)	
Maximum number of injuries				<0.001
No injuries	5402 (15.9%)	1182 (16.0%)	4220 (15.8%)	
1 injury	25255 (74.1%)	5259 (71.4%)	19996 (74.9%)	
2 injuries	2941 (8.6%)	769 (10.4%)	2172 (8.1%)	
3+ injuries	463 (1.4%)	157 (2.1%)	306 (1.1%)	
Length of stay (LOS)	1.32 (5.04)	1.67 (7.55)	1.22 (4.06)	<0.001

Note: KS = Key stage. SD = Standard deviation. LOS = Length of stay.

Table s3: Key Stage 2 Injury Characteristics

	Total N=28713	No N=6199	Yes N=22514	p-value
Age (Mean SD)	4.62 (3.25)	4.59 (3.19)	4.62 (3.27)	0.43
Age (Median, IQR)	4.00 (2.00-7.00)	4.00 (2.00-7.00)	4.00 (2.00-7.00)	0.72
GBD 2013 injury group				<0.001
N33, N34 Spinal cord lesion	*	*	*	
N28 Moderate to severe traumatic brain injury	312 (1.1%)	86 (1.4%)	226 (1.0%)	
N19, N26 Fracture of femur	481 (1.7%)	127 (2.0%)	354 (1.6%)	
N45 Environmental factors (e.g. temperature, pressure, electricity)	*	*	*	
N20 Fracture of patella, tibia, fibula, or ankle	1217 (4.2%)	297 (4.8%)	920 (4.1%)	
N37, N17, N18 Crush injury, fracture foot/hand bones	768 (2.7%)	166 (2.7%)	602 (2.7%)	
N43 Internal haemorrhage in abdomen or pelvis	63 (0.2%)	20 (0.3%)	43 (0.2%)	
N27 Minor traumatic brain injury	133 (0.5%)	32 (0.5%)	101 (0.4%)	
N21 Fracture of pelvis	18 (0.1%)	*	*	
N42 Severe chest Injury	7 (0.0%)	*	*	
N8, N9, N10 Burns (including lower airways)	1209 (4.2%)	321 (5.2%)	888 (3.9%)	
N25 Fracture of vertebral column	21 (0.1%)	*	*	
N40, N44 Contusion, open wound	5445 (19.0%)	1287 (20.8%)	4158 (18.5%)	
N35, N36 Asphyxiation, Non-fatal submersion	46 (0.2%)	18 (0.3%)	28 (0.1%)	
N14 Other injuries of muscle & tendon and other dislocations	465 (1.6%)	100 (1.6%)	365 (1.6%)	
N16 Fracture of face bone	97 (0.3%)	22 (0.4%)	75 (0.3%)	
N41 Poisoning	3091 (10.8%)	717 (11.6%)	2374 (10.5%)	
N15 Fracture of clavicle, scapula, or humerus	1542 (5.4%)	266 (4.3%)	1276 (5.7%)	
N22 Fracture of radius or ulna	4405 (15.3%)	728 (11.7%)	3677 (16.3%)	
N47 Superficial	2546 (8.9%)	585 (9.4%)	1961 (8.7%)	
Other	6817 (23.7%)	1414 (22.8%)	5403 (24.0%)	
Cause				<0.001
Motor vehicle driver/passenger	276 (1.0%)	58 (0.9%)	218 (1.0%)	
Motorcycle driver/passenger	81 (0.3%)	28 (0.5%)	53 (0.2%)	
Pedal cyclist-rider or passenger	1279 (4.5%)	276 (4.5%)	1003 (4.5%)	
Pedestrian	551 (1.9%)	165 (2.7%)	386 (1.7%)	
Other transport related circumstance	164 (0.6%)	33 (0.5%)	131 (0.6%)	
Fall-low	7437 (25.9%)	1434 (23.1%)	6003 (26.7%)	
Fall-high	5511 (19.2%)	1058 (17.1%)	4453 (19.8%)	
Submersion / drowning / Other threat to breathing	122 (0.4%)	38 (0.6%)	84 (0.4%)	
Fire, flames, smoke	90 (0.3%)	30 (0.5%)	60 (0.3%)	
Scalds	747 (2.6%)	193 (3.1%)	554 (2.5%)	
Contact burn	293 (1.0%)	74 (1.2%)	219 (1.0%)	
Poisoning	2924 (10.2%)	686 (11.1%)	2238 (9.9%)	
Cutting, piercing object	1764 (6.1%)	407 (6.6%)	1357 (6.0%)	
Animal related	499 (1.7%)	121 (2.0%)	378 (1.7%)	
Struck by or collision with person/object	2341 (8.2%)	501 (8.1%)	1840 (8.2%)	
Other cause	3021 (10.5%)	718 (11.6%)	2303 (10.2%)	
Missing	1613 (5.6%)	379 (6.1%)	1234 (5.5%)	
Intent				<0.001
Unintentional/non-intentional harm	26329 (91.7%)	5591 (90.2%)	20738 (92.1%)	
Intentional self-harm	69 (0.2%)	15 (0.2%)	54 (0.2%)	
Intentional assault	576 (2.0%)	165 (2.7%)	411 (1.8%)	
Adverse effect or complication of medical or surgical care	53 (0.2%)	14 (0.2%)	39 (0.2%)	
Intent not specified/cannot be determined	113 (0.4%)	42 (0.7%)	71 (0.3%)	
Missing	1573 (5.5%)	372 (6.0%)	1201 (5.3%)	

Note: KS = Key stage. * = Information not report to ensure anonymity. SD = Standard deviation.

Table s4: Key Stage 3 General Characteristics

	Total N=34061	No N=7367	Yes N=26694	p-value
School year				
11	36534 (100.0%)	12077 (100.0%)	24457 (100.0%)	
Calendar year				<0.001
2009	4016 (11.0%)	1944 (16.1%)	2072 (8.5%)	
2010	4224 (11.6%)	1931 (16.0%)	2293 (9.4%)	
2011	4959 (13.6%)	2030 (16.8%)	2929 (12.0%)	
2012	4993 (13.7%)	1734 (14.4%)	3259 (13.3%)	
2013	5005 (13.7%)	1456 (12.1%)	3549 (14.5%)	
2014	4620 (12.6%)	1122 (9.3%)	3498 (14.3%)	
2015	4172 (11.4%)	871 (7.2%)	3301 (13.5%)	
2016	4168 (11.4%)	767 (6.4%)	3401 (13.9%)	
Missing	377 (1.0%)	222 (1.8%)	155 (0.6%)	<0.001
Hospital admission type				
Non-injury only	1958 (5.4%)	704 (5.8%)	1254 (5.1%)	
Injury only	10553 (28.9%)	3299 (27.3%)	7254 (29.7%)	
Both injury & non-injury	22179 (60.7%)	7346 (60.8%)	14833 (60.6%)	
No hospital admission	1844 (5.0%)	728 (6.0%)	1116 (4.6%)	
Townsend decile				<0.001
1 - Least deprived	2583 (7.1%)	410 (3.4%)	2173 (8.9%)	
2	2335 (6.4%)	481 (4.0%)	1854 (7.6%)	
3	2598 (7.1%)	560 (4.6%)	2038 (8.3%)	
4	2671 (7.3%)	660 (5.5%)	2011 (8.2%)	
5	2781 (7.6%)	793 (6.6%)	1988 (8.1%)	
6	3130 (8.6%)	976 (8.1%)	2154 (8.8%)	
7	3203 (8.8%)	1086 (9.0%)	2117 (8.7%)	
8	3265 (8.9%)	1254 (10.4%)	2011 (8.2%)	
9	3475 (9.5%)	1417 (11.7%)	2058 (8.4%)	
10 - Most deprived	4257 (11.7%)	2048 (17.0%)	2209 (9.0%)	
Missing	6236 (17.1%)	2392 (19.8%)	3844 (15.7%)	
Change in Townsend decile				<0.001
No change in Townsend	21467 (58.8%)	6164 (51.0%)	15303 (62.6%)	
Changed to less deprived area	4685 (12.8%)	1902 (15.7%)	2783 (11.4%)	
Changed to more deprived area	3429 (9.4%)	1419 (11.7%)	2010 (8.2%)	
Missing	6953 (19.0%)	2592 (21.5%)	4361 (17.8%)	
Eligible for free school meal				<0.001
No	27867 (76.3%)	7349 (60.9%)	20518 (83.9%)	
Yes	8290 (22.7%)	4506 (37.3%)	3784 (15.5%)	
Missing	377 (1.0%)	222 (1.8%)	155 (0.6%)	
Required special educational Needs				<0.001
No	24905 (68.2%)	4535 (37.6%)	20370 (83.3%)	
Yes	11252 (30.8%)	7320 (60.6%)	3932 (16.1%)	
Missing	377 (1.0%)	222 (1.8%)	155 (0.6%)	
School size				<0.001
<=100 pupils	287 (0.8%)	274 (2.3%)	13 (0.1%)	
>100-150 pupils	213 (0.6%)	186 (1.5%)	27 (0.1%)	
>150-200 pupils	60 (0.2%)	29 (0.2%)	31 (0.1%)	
>200-300 pupils	218 (0.6%)	128 (1.1%)	90 (0.4%)	
>300 pupils	30628 (83.8%)	9701 (80.3%)	20927 (85.6%)	
Missing	5128 (14.0%)	1759 (14.6%)	3369 (13.8%)	
Maximum number of injuries				<0.001
No injuries	3483 (9.5%)	1235 (10.2%)	2248 (9.2%)	
1 injury	28160 (77.1%)	8884 (73.6%)	19276 (78.8%)	
2 injuries	3749 (10.3%)	1386 (11.5%)	2363 (9.7%)	
3+ injuries	765 (2.1%)	350 (2.9%)	415 (1.7%)	
Missing	377 (1.0%)	222 (1.8%)	155 (0.6%)	
Length of stay (LOS)	1.57 (6.06)	1.75 (6.25)	1.48 (5.96)	<0.001

Note: KS = Key stage. SD = Standard deviation. LOS = Length of stay.

Table s5: Key Stage 3 Injury Characteristics

	Total N=32732	No N=10645	Yes N=22087	P- value
Age (Mean SD)	6.93 (4.28)	7.21 (4.22)	6.80 (4.31)	<0.001
Age (Median, IQR)	7.00 (3.00-11.00)	7.00 (4.00-11.00)	6.00 (3.00-11.00)	<0.001
GBD 2013 injury group				<0.001
N33, N34 Spinal cord lesion	*	*	*	
N28 Moderate to severe traumatic brain injury	398 (1.2%)	143 (1.3%)	255 (1.2%)	
N19, N26 Fracture of femur	527 (1.6%)	205 (1.9%)	322 (1.5%)	
N45 Environmental factors (e.g. temperature, pressure, electricity)	23 (0.1%)	*	*	
N20 Fracture of patella, tibia, fibula, or ankle	1916 (5.9%)	624 (5.9%)	1292 (5.8%)	
N37, N17, N18 Crush injury, fracture foot/hand bones	1083 (3.3%)	349 (3.3%)	734 (3.3%)	
N43 Internal haemorrhage in abdomen or pelvis	102 (0.3%)	44 (0.4%)	58 (0.3%)	
N27 Minor traumatic brain injury	197 (0.6%)	64 (0.6%)	133 (0.6%)	
N21 Fracture of pelvis	45 (0.1%)	19 (0.2%)	26 (0.1%)	
N42 Severe chest Injury	*	*	*	
N8, N9, N10 Burns (including lower airways)	1078 (3.3%)	406 (3.8%)	672 (3.0%)	
N25 Fracture of vertebral column	47 (0.1%)	19 (0.2%)	28 (0.1%)	
N40, N44 Contusion, open wound	5209 (15.9%)	1906 (17.9%)	3303 (15.0%)	
N35, N36 Asphyxiation, Non-fatal submersion	62 (0.2%)	42 (0.4%)	20 (0.1%)	
N14 Other injuries of muscle & tendon and other dislocations	692 (2.1%)	223 (2.1%)	469 (2.1%)	
N16 Fracture of face bone	151 (0.5%)	43 (0.4%)	108 (0.5%)	
N41 Poisoning	4219 (12.9%)	1488 (14.0%)	2731 (12.4%)	
N15 Fracture of clavicle, scapula, or humerus	1709 (5.2%)	468 (4.4%)	1241 (5.6%)	
N22 Fracture of radius or ulna	6159 (18.8%)	1675 (15.7%)	4484 (20.3%)	
N47 Superficial	2463 (7.5%)	843 (7.9%)	1620 (7.3%)	
Other	6630 (20.3%)	2071 (19.5%)	4559 (20.6%)	
Cause				<0.001
Motor vehicle driver/passenger	323 (1.0%)	110 (1.0%)	213 (1.0%)	
Motorcycle driver/passenger	199 (0.6%)	81 (0.8%)	118 (0.5%)	
Pedal cyclist-rider or passenger	1945 (5.9%)	707 (6.6%)	1238 (5.6%)	
Pedestrian	752 (2.3%)	351 (3.3%)	401 (1.8%)	
Other transport related circumstance	298 (0.9%)	67 (0.6%)	231 (1.0%)	
Fall-low	8130 (24.8%)	2244 (21.1%)	5886 (26.6%)	
Fall-high	5783 (17.7%)	1783 (16.7%)	4000 (18.1%)	
Submersion / drowning / Other threat to breathing	133 (0.4%)	70 (0.7%)	63 (0.3%)	
Fire, flames, smoke	124 (0.4%)	67 (0.6%)	57 (0.3%)	
Scalds	617 (1.9%)	208 (2.0%)	409 (1.9%)	
Contact burn	248 (0.8%)	93 (0.9%)	155 (0.7%)	
Poisoning	3641 (11.1%)	1241 (11.7%)	2400 (10.9%)	
Cutting, piercing object	1824 (5.6%)	655 (6.2%)	1169 (5.3%)	
Animal related	532 (1.6%)	186 (1.7%)	346 (1.6%)	
Struck by or collision with person/object	2840 (8.7%)	925 (8.7%)	1915 (8.7%)	
Other cause	3011 (9.2%)	1035 (9.7%)	1976 (8.9%)	
Missing	2332 (7.1%)	822 (7.7%)	1510 (6.8%)	
Intent				<0.001
Unintentional/non-intentional harm	28337 (86.6%)	9027 (84.8%)	19310 (87.4%)	
Intentional self-harm	1048 (3.2%)	396 (3.7%)	652 (3.0%)	
Intentional assault	867 (2.6%)	332 (3.1%)	535 (2.4%)	
Adverse effect or complication of medical or surgical care	52 (0.2%)	20 (0.2%)	32 (0.1%)	
Intent not specified/cannot be determined	138 (0.4%)	61 (0.6%)	77 (0.3%)	
Missing	2290 (7.0%)	809 (7.6%)	1481 (6.7%)	

Note: KS = Key stage. * = Information not report to ensure anonymity. SD = Standard deviation.

Table s6: Key Stage 4 General Characteristics

	Total N=34799	No N=20266	Yes N=14533	p-value
School year				
11	34739 (99.8%)	20211 (99.7%)	14528 (100.0%)	
Missing	60 (0.2%)	55 (0.3%)	5 (0.0%)	
Calendar year				<0.001
2009	3749 (10.8%)	2438 (12.0%)	1311 (9.0%)	
2010	3817 (11.0%)	2383 (11.8%)	1434 (9.9%)	
2011	3926 (11.3%)	2426 (12.0%)	1500 (10.3%)	
2012	4132 (11.9%)	2510 (12.4%)	1622 (11.2%)	
2013	4850 (13.9%)	2930 (14.5%)	1920 (13.2%)	
2014	4911 (14.1%)	2765 (13.6%)	2146 (14.8%)	
2015	4869 (14.0%)	2535 (12.5%)	2334 (16.1%)	
2016	4485 (12.9%)	2224 (11.0%)	2261 (15.6%)	
Missing	60 (0.2%)	55 (0.3%)	5 (0.0%)	
KS4 Admission				<0.001
Injury only	12545 (36.0%)	6960 (34.3%)	5585 (38.4%)	
Both injury & non-injury	22194 (63.8%)	13251 (65.4%)	8943 (61.5%)	
No hospital admission	60 (0.2%)	55 (0.3%)	5 (0.0%)	
Townsend decile				<0.001
1 - Least deprived	2472 (7.1%)	815 (4.0%)	1657 (11.4%)	
2	2241 (6.4%)	943 (4.7%)	1298 (8.9%)	
3	2402 (6.9%)	1065 (5.3%)	1337 (9.2%)	
4	2547 (7.3%)	1288 (6.4%)	1259 (8.7%)	
5	2689 (7.7%)	1467 (7.2%)	1222 (8.4%)	
6	2934 (8.4%)	1713 (8.5%)	1221 (8.4%)	
7	3009 (8.6%)	1832 (9.0%)	1177 (8.1%)	
8	3080 (8.9%)	2017 (10.0%)	1063 (7.3%)	
9	3157 (9.1%)	2190 (10.8%)	967 (6.7%)	
10 - Most deprived	3828 (11.0%)	2951 (14.6%)	877 (6.0%)	
Missing	6440 (18.5%)	3985 (19.7%)	2455 (16.9%)	
Change in Townsend decile				<0.001
No change in Townsend	22793 (65.5%)	12610 (62.2%)	10183 (70.1%)	
Changed to less deprived area	3033 (8.7%)	1987 (9.8%)	1046 (7.2%)	
Changed to more deprived area	2297 (6.6%)	1539 (7.6%)	758 (5.2%)	
Missing	6676 (19.2%)	4130 (20.4%)	2546 (17.5%)	
Eligible for free school meal				<0.001
No	27762 (79.8%)	14527 (71.7%)	13235 (91.1%)	
Yes	6977 (20.0%)	5684 (28.0%)	1293 (8.9%)	
Missing	60 (0.2%)	55 (0.3%)	5 (0.0%)	
Required special educational Needs				<0.001
No	25178 (72.4%)	11949 (59.0%)	13229 (91.0%)	
Yes	9561 (27.5%)	8262 (40.8%)	1299 (8.9%)	
Missing	60 (0.2%)	55 (0.3%)	5 (0.0%)	
School size				<0.001
<=100 pupils	186 (0.5%)	181 (0.9%)	5 (0.0%)	
>100-150 pupils	41 (0.1%)	29 (0.1%)	12 (0.1%)	
>150-200 pupils	99 (0.3%)	99 (0.5%)	0 (0.0%)	
>200-300 pupils	140 (0.4%)	95 (0.5%)	45 (0.3%)	
>300 pupils	30000 (86.2%)	17311 (85.4%)	12689 (87.3%)	
Missing	4333 (12.5%)	2551 (12.6%)	1782 (12.3%)	
Maximum number of injuries				<0.001
No injuries	69 (0.2%)	42 (0.2%)	27 (0.2%)	
1 injury	29209 (83.9%)	16572 (81.8%)	12637 (87.0%)	
2 injuries	4440 (12.8%)	2845 (14.0%)	1595 (11.0%)	
3+ injuries	1021 (2.9%)	752 (3.7%)	269 (1.9%)	
Missing	60 (0.2%)	55 (0.3%)	5 (0.0%)	
Length of stay (LOS)	1.85 (7.43)	1.94 (7.71)	1.72 (7.01)	0.006

Note: KS = Key stage. SD = Standard deviation. LOS = Length of stay.

Table s7: Key Stage 4 Injury Characteristics

	Total N=34739	No N=20211	Yes N=14528	p-value
Age (Mean SD)	8.93 (4.68)	9.15 (4.68)	8.62 (4.68)	<0.001
Age (Median, IQR)	9.00 (5.00-13.00)	9.00 (5.00-13.00)	9.00 (5.00-13.00)	<0.001
GBD 2013 injury group				<0.001
N33, N34 Spinal cord lesion	13 (0.0%)	6 (0.0%)	7 (0.0%)	
N28 Moderate to severe traumatic brain injury	419 (1.2%)	245 (1.2%)	174 (1.2%)	
N19, N26 Fracture of femur	479 (1.4%)	304 (1.5%)	175 (1.2%)	
N45 Environmental factors (e.g. temperature, pressure, electricity)	24 (0.1%)	12 (0.1%)	12 (0.1%)	
N20 Fracture of patella, tibia, fibula, or ankle	2309 (6.6%)	1322 (6.5%)	987 (6.8%)	
N37, N17, N18 Crush injury, fracture foot/hand bones	1284 (3.7%)	747 (3.7%)	537 (3.7%)	
N43 Internal haemorrhage in abdomen or pelvis	168 (0.5%)	108 (0.5%)	60 (0.4%)	
N27 Minor traumatic brain injury	207 (0.6%)	113 (0.6%)	94 (0.6%)	
N21 Fracture of pelvis	71 (0.2%)	43 (0.2%)	28 (0.2%)	
N42 Severe chest Injury	17 (0.0%)	6 (0.0%)	11 (0.1%)	
N8, N9, N10 Burns (including lower airways)	891 (2.6%)	550 (2.7%)	341 (2.3%)	
N25 Fracture of vertebral column	93 (0.3%)	57 (0.3%)	36 (0.2%)	
N40, N44 Contusion, open wound	4981 (14.3%)	3131 (15.5%)	1850 (12.7%)	
N35, N36 Asphyxiation, Non-fatal submersion	65 (0.2%)	51 (0.3%)	14 (0.1%)	
N14 Other injuries of muscle & tendon and other dislocations	886 (2.6%)	543 (2.7%)	343 (2.4%)	
N16 Fracture of face bone	297 (0.9%)	177 (0.9%)	120 (0.8%)	
N41 Poisoning	5661 (16.3%)	3662 (18.1%)	1999 (13.8%)	
N15 Fracture of clavicle, scapula, or humerus	1634 (4.7%)	830 (4.1%)	804 (5.5%)	
N22 Fracture of radius or ulna	6656 (19.2%)	3378 (16.7%)	3278 (22.6%)	
N47 Superficial	2340 (6.7%)	1414 (7.0%)	926 (6.4%)	
Other	6244 (18.0%)	3512 (17.4%)	2732 (18.8%)	
Cause				<0.001
Motor vehicle driver/passenger	389 (1.1%)	228 (1.1%)	161 (1.1%)	
Motorcycle driver/passenger	334 (1.0%)	232 (1.1%)	102 (0.7%)	
Pedal cyclist-rider or passenger	2243 (6.5%)	1390 (6.9%)	853 (5.9%)	
Pedestrian	804 (2.3%)	579 (2.9%)	225 (1.5%)	
Other transport related circumstance	393 (1.1%)	188 (0.9%)	205 (1.4%)	
Fall-low	8037 (23.1%)	4088 (20.2%)	3949 (27.2%)	
Fall-high	5519 (15.9%)	3116 (15.4%)	2403 (16.5%)	
Submersion / drowning / Other threat to breathing	143 (0.4%)	95 (0.5%)	48 (0.3%)	
Fire, flames, smoke	181 (0.5%)	129 (0.6%)	52 (0.4%)	
Scalds	453 (1.3%)	270 (1.3%)	183 (1.3%)	
Contact burn	191 (0.5%)	108 (0.5%)	83 (0.6%)	
Poisoning	4616 (13.3%)	2982 (14.8%)	1634 (11.2%)	
Cutting, piercing object	1876 (5.4%)	1170 (5.8%)	706 (4.9%)	
Animal related	481 (1.4%)	290 (1.4%)	191 (1.3%)	
Struck by or collision with person/object	3302 (9.5%)	1911 (9.5%)	1391 (9.6%)	
Other cause	3018 (8.7%)	1779 (8.8%)	1239 (8.5%)	
Missing	2759 (7.9%)	1656 (8.2%)	1103 (7.6%)	
Intent				<0.001
Unintentional/non-intentional harm	28093 (80.9%)	15916 (78.7%)	12177 (83.8%)	
Intentional self-harm	2512 (7.2%)	1763 (8.7%)	749 (5.2%)	
Intentional assault	1229 (3.5%)	770 (3.8%)	459 (3.2%)	
Adverse effect or complication of medical or surgical care	53 (0.2%)	29 (0.1%)	24 (0.2%)	
Intent not specified/cannot be determined	137 (0.4%)	98 (0.5%)	39 (0.3%)	
Missing	2715 (7.8%)	1635 (8.1%)	1080 (7.4%)	

Note: KS = Key stage. * = Information not report to ensure anonymity. SD = Standard deviation.

Table s8 Sensitivity Analysis Overall Patient Characteristics

	Total N=15436	Male N=9011	Female N=6425	p-value
Gender				<0.001
Male	9011 (58.4%)	9011 (100.0%)	0 (0.0%)	
Female	6425 (41.6%)	0 (0.0%)	6425 (100.0%)	
Townsend decile at birth				<0.001
1 - Least deprived	964 (6.2%)	591 (6.6%)	373 (5.8%)	
2	1000 (6.5%)	614 (6.8%)	386 (6.0%)	
3	1188 (7.7%)	735 (8.2%)	453 (7.1%)	
4	1216 (7.9%)	733 (8.1%)	483 (7.5%)	
5	1364 (8.8%)	818 (9.1%)	546 (8.5%)	
6	1542 (10.0%)	918 (10.2%)	624 (9.7%)	
7	1668 (10.8%)	974 (10.8%)	694 (10.8%)	
8	1769 (11.5%)	993 (11.0%)	776 (12.1%)	
9	1935 (12.5%)	1096 (12.2%)	839 (13.1%)	
10 - Most deprived	2561 (16.6%)	1402 (15.6%)	1159 (18.0%)	
Missing	229 (1.5%)	137 (1.5%)	92 (1.4%)	
Maternal age (Mean, SD)	26.56 (5.84)	26.74 (5.77)	26.31 (5.94)	<0.001
Maternal age (Median IQR)	26.00 (22.00-31.00)	27.00 (22.00-31.00)	26.00 (22.00-31.00)	<0.001
Maternal age group				<0.001
<18 years	749 (4.9%)	410 (4.5%)	339 (5.3%)	
18-24 years	5204 (33.7%)	2909 (32.3%)	2295 (35.7%)	
25-29 years	4618 (29.9%)	2792 (31.0%)	1826 (28.4%)	
30-34 years	3329 (21.6%)	2011 (22.3%)	1318 (20.5%)	
35+ years	1507 (9.8%)	877 (9.7%)	630 (9.8%)	
Missing	29 (0.2%)	12 (0.1%)	17 (0.3%)	
Gestational age (Mean, SD)	39.27 (2.13)	39.25 (2.13)	39.30 (2.12)	0.15
Gestational age (Median, IQR)	40.00 (38.00-41.00)	40.00 (38.00-41.00)	40.00 (38.00-41.00)	0.23
Gestational age group				0.57
Extreme preterm (<28 weeks)	27 (0.2%)	14 (0.2%)	13 (0.2%)	
Very preterm (28-32 weeks)	217 (1.4%)	134 (1.5%)	83 (1.3%)	
Moderate or late preterm (33-36 weeks)	947 (6.1%)	571 (6.3%)	376 (5.9%)	
Early term (37-38 weeks)	2864 (18.6%)	1671 (18.5%)	1193 (18.6%)	
Full term (39-40 weeks)	7170 (46.4%)	4162 (46.2%)	3008 (46.8%)	
Later term (41-42 weeks)	3820 (24.7%)	2236 (24.8%)	1584 (24.7%)	
Post term (43+ weeks)	180 (1.2%)	97 (1.1%)	83 (1.3%)	
Missing	211 (1.4%)	126 (1.4%)	85 (1.3%)	
Caesarean section				0.34
No	13419 (86.9%)	7814 (86.7%)	5605 (87.2%)	
Yes	2017 (13.1%)	1197 (13.3%)	820 (12.8%)	
Maximum number of injuries				<0.001
Total 1 injury related admission [^]	10619 (68.8%)	6272 (69.6%)	4347 (67.7%)	
Total 2 injury related admissions	3379 (21.9%)	2021 (22.4%)	1358 (21.1%)	
Total 3+ injury related admissions	1424 (9.2%)	714 (7.9%)	710 (11.1%)	
Number of educational attainment scores across key stages				0.35
One CSI score	2178 (14.1%)	1256 (13.9%)	922 (14.4%)	
Two CSI scores	7084 (45.9%)	4179 (46.4%)	2905 (45.2%)	
Three CSI scores	6174 (40.0%)	3576 (39.7%)	2598 (40.4%)	

Note: SD = Standard deviation CSI = Core Subject Indicator. Max no = Maximum number. - = Not applicable. [^]Same day admissions anomalies but injury was recorded and children were included in analysis (n=184).

Table s9: Sensitivity Model

	ARR	95% CI	p-value
Key Stage (KS)			
Stage 2	Reference		
Stage 3	0.812	(0.78, 0.85)	<0.001
Stage 4	0.452	(0.41, 0.50)	<0.001
Gender			
Male	Reference		
Female	1.023	(1.00, 1.05)	0.106
Age group			
5-9 years	Reference		
10-14 years	1.023	(0.97, 1.07)	0.356
15-17 years	1.007	(0.90, 1.12)	0.904
Caesarean section			
No	Reference		
Yes	1.003	(0.97, 1.04)	0.870
Townsend decile at birth	0.972	(0.97, 0.98)	<0.001
Maternal age group			
<18 years	0.861	(0.79, 0.94)	<0.001
18-24 years	0.913	(0.88, 0.95)	<0.001
25-29 years	Reference		
30-34 years	1.015	(0.98, 1.05)	0.369
35+ years	1.025	(0.98, 1.07)	0.249
Gestational age group			
Extreme preterm (<28 weeks)	0.998	(0.74, 1.35)	0.990
Very preterm (28-32 weeks)	1.012	(0.88, 1.17)	0.871
Moderate or late preterm (33-36 weeks)	0.948	(0.89, 1.01)	0.090
Early term (37-38 weeks)	0.955	(0.92, 0.99)	0.012
Full term (39-40 weeks)	Reference		
Later term (41-42 weeks)	1.012	(0.98, 1.04)	0.452
Post term (43+ weeks)	1.125	(1.00, 1.27)	0.052
Year	1.056	(1.05, 1.06)	<0.001
Eligible for a free school meal			
No	Reference		
Yes	0.762	(0.73, 0.80)	<0.001
Any special educational needs			
No	Reference		
Yes	0.455	(0.43, 0.48)	<0.001
School pupil size			
<=100 pupils	Reference		
>100-150 pupils	1.051	(0.96, 1.15)	0.281
>150-200 pupils	1.085	(1.00, 1.18)	0.046
>200-300 pupils	1.097	(1.02, 1.18)	0.015
>300 pupils	1.135	(1.05, 1.22)	0.001
Length of stay (LOS)	1.000	(1.00, 1.00)	0.768
GBD 2013 injury group			
N19, N26 Fracture of femur	0.861	(0.75, 0.99)	0.040
N45 Environmental factors (e.g. temperature, pressure, electricity)	0.705	(0.24, 2.08)	0.526
N20 Fracture of patella, tibia, fibula, or ankle	0.979	(0.93, 1.03)	0.395
N37, N17, N18 Crush injury, fracture foot/hand bones	0.975	(0.92, 1.03)	0.399
N43 Internal haemorrhage in abdomen or pelvis	1.006	(0.81, 1.26)	0.960
N27 Minor traumatic brain injury	0.913	(0.79, 1.06)	0.239
N21 Fracture of pelvis	0.884	(0.69, 1.14)	0.339
N42 Severe chest Injury	1.271	(0.71, 2.28)	0.421
N8, N9, N10 Burns (including lower airways)	0.385	(0.22, 0.67)	0.001
N25 Fracture of vertebral column	0.876	(0.69, 1.12)	0.286
N40, N44 Contusion, open wound	0.919	(0.88, 0.96)	<0.001
N35, N36 Asphyxiation, Non-fatal submersion	1.158	(0.63, 2.14)	0.640
N14 Other injuries of muscle & tendon and other dislocations	0.924	(0.86, 0.99)	0.029
N16 Fracture of face bone	0.943	(0.82, 1.09)	0.421
N41 Poisoning	0.884	(0.72, 1.09)	0.244
N15 Fracture of clavicle, scapula, or humerus	1.000	(0.94, 1.06)	0.992
N22 Fracture of radius or ulna	Reference		
N47 Superficial	0.953	(0.90, 1.01)	0.108
Other	0.973	(0.94, 1.01)	0.154
Cause			

Motor vehicle driver/passenger	0.893	(0.78, 1.02)	0.098
Motorcycle driver/passenger	0.825	(0.72, 0.95)	0.006
Pedal cyclist-rider or passenger	0.960	(0.91, 1.01)	0.131
Pedestrian	0.912	(0.82, 1.01)	0.085
Other transport related circumstance	0.970	(0.89, 1.06)	0.491
<i>Fall-low</i>	<i>Reference</i>		
Fall-high	0.969	(0.93, 1.01)	0.094
Submersion / drowning / Other threat to breathing	0.742	(0.51, 1.08)	0.124
Fire, flames, smoke	1.587	(0.97, 2.58)	0.064
Scalds	2.238	(1.13, 4.42)	0.020
Contact burn	2.076	(1.15, 3.74)	0.015
Poisoning	0.992	(0.80, 1.22)	0.941
Cutting, piercing object	0.974	(0.90, 1.05)	0.497
Animal related	0.963	(0.87, 1.06)	0.447
Struck by or collision with person/object	1.050	(1.00, 1.10)	0.035
Other cause	0.964	(0.92, 1.01)	0.150
Intent			
<i>Unintentional/non-intentional harm</i>	<i>Reference</i>		
Intentional self-harm	0.911	(0.84, 0.99)	0.022
Intentional assault	0.918	(0.86, 0.99)	0.019
Adverse effect or complication of medical or surgical care	1.195	(0.22, 6.59)	0.838
Intent not specified/cannot be determined	0.841	(0.63, 1.12)	0.233

Note: ARR = Adjusted relative risk, CI = Confidence interval. KS = Academic key stage. LOS = Length of stay. Bold represents significant. Number of observations across all KS = 12,290, Number of schools = 1,322. ^ Some children had no injury prior to a KS, then injured.