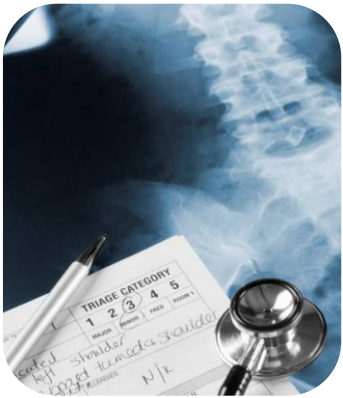


Interim
2013



The Burden of Injury in Wales

Interim report 2013
Assaults



GIG
CYMRU
NHS
WALES

Iechyd Cyhoeddus
Cymru
Public Health
Wales



CAPIC
Collaboration for Accident
Prevention and Injury Control

ACKNOWLEDGMENTS

This report was prepared by Public Health Wales NHS Trust in collaboration with Swansea University.

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Glossary

AWISS	All Wales Injuries Surveillance System
BOI	Burden of Injury
CAPIC	Collaboration for Accident Prevention and Injury Control
CI _s	Confidence Intervals
DALY	Disability Adjusted Life Year
EASR	European Age-Standardised Rates
ED	Emergency Department
EDDS	Emergency Department Data Set
FCE	Finished Consultant Episodes
GBDI	Global Burden of Disease and Injury
HB	Health Board
HIRU	Health Information Research Unit
IP	In-patient
JAMIE	Joint Action on Monitoring Injuries in Europe
LA	Local Authority
LSOA	Lower Super Output Area
MDS	Minimum Data Set
MYE	Mid Year Estimate
NWIS	NHS Wales Information Service
ONS	Office for National Statistics
OR	Odds Ratio
PEDW	Patient Episode Database for Wales
QALY	Quality Adjusted Life Year
RR	Relative Risk
SAIL	Secure Anonymised Information Linkage
SES	Socio-Economic Status
WIMD	Welsh Index of Multiple Deprivation
YLD	Years Lived with Disability
YLL	Years of Life Lost

1 Summary

This report follows on from the 2012 Wales Burden of Injuries report. It is an interim report focussing only on data updates in one of four key areas; assaults. Subsequent reports will focus on the other three key areas; poisonings, road traffic crashes (RTCs) and falls.

Additional data are now included for 2011 and 2012, as well as more detailed socio-economic profiles.

There are still a number of data completeness and coding issues and some of the differences reported here may reflect variations in data quality. Nevertheless, the best way to improve data quality is to use the data and stimulate interest in the results.

1.1 Main findings

Despite some improvements in the quality of coding of emergency department data there are still considerable problems with all sources of information on injury, including mortality data. These issues are so substantial that they could distort local authority and health board comparators.

The following findings may be influenced by data quality issues but should still be reported.

Male in-patient admission rates for assaults are six times higher than those of females.

In-patient admission rates peak in young adult males.

Admission rates for 15 to 19 year old males dropped considerably between 2009 and 2012.

Those in the most deprived areas have admission rates 3.7 times higher than those in the least deprived areas.

Almost half of the burden of assaults is suffered by 15 to 29 year old males.

The greatest burden of assaults is in Cwm Taf.

1.2 Recommendations

There are three major recommendations from the entire Wales BOI series:-

- 1. Injury data collection in emergency departments needs to be improved. This will require action from policy makers, Health Board executives and managers, ED staff and the general public.*
- 2. Injury prevention in Wales needs to be more collaborative and cross-sectoral so that there are greater benefits and the burden of injuries on health is reduced more quickly and more effectively.*
- 3. Injury prevention should be recognised as a key public health priority, with greater commitment and capacity to support the implementation of evidence based injury prevention and control initiatives.*

Specific recommendations relating to this report are:-

- 1. It is likely that assault related attendances at emergency departments are under-counted, and instead are recorded as "accidents". This makes for difficulties with assessing the true burden of assault injuries.*
- 2. Policy makers are often keen to assess the burden of specific sub-groups of assault injury, such as domestic violence. Given the small numbers of assault cases overall, more detailed analysis of these data will be impractical. To obtain these data, in the first instance, the quality of assault data generally will need to be improved. From there, it is recommended that rather than attempting to collect more detail electronically, the electronic record is used to identify cases for record review by hand.*

2 Introduction

This report follows on from the 2012 Wales Burden of Injuries (BOI) report. It is an interim report focussing only on data updates in one of four key areas; assaults. Subsequent reports will focus on the other three key areas; poisonings, road traffic crashes and falls.

The background and methods chapters, for the most part, replicate the previous report and so are not repeated here. The only change of note is that the calculations of the burden of disease, in terms of years of life lost (YLL) and years lived with disability (YLD), are now made using the updated Global Burden of Disease (GBD) methodology. This means that discounting and age weighting are no longer included. This also means that a simple comparison of the 2009 burden with the 2011 burden is not sensible.

The full report will be updated in late 2014. This will include an update of the background information, accounting for the new GBD estimates, and the evidence reviews in each section.

This report does not include any mortality data. This is because the number of assault related deaths is very small. The 2009 report did not include Emergency Department (ED) data, so only 2011 and 2012 ED data are presented.

Additional data have been included for 2011 and 2012 (except for mortality data), as well as more detailed socio-economic profiles.

Data for 2010 are not included because of time constraints, but 2009 data, as used in the 2012 report, are presented to provide a baseline for comparison.

Emergency Department data are included in this report, but data quality issues mean that considerable care should be taken with interpretation. As in the previous report, it is believed that all of the injury groups discussed in this report are substantially under-reported. These data should therefore be regarded as under estimates of the true picture. Adoption of the Joint Action on Monitoring Injuries in Europe (JAMIE) Minimum Data Set would substantially improve the robustness and reliability of ED data across Wales.

3 Assault injuries

3.1 Epidemiology

3.1.1 Rates – sex

In-patient (IP) admission rates associated with assaults appear to have fallen for both males and females (figure 1). Male rates are, however, consistently around six times higher than those of females. Emergency department (ED) attendances show little overall change, but with the gap between males and females at around two and a half times (figure 2).

Figure 1: Assault related in-patient admission rates by sex, 2009, 2011, 2012 (data not available for 2010)

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

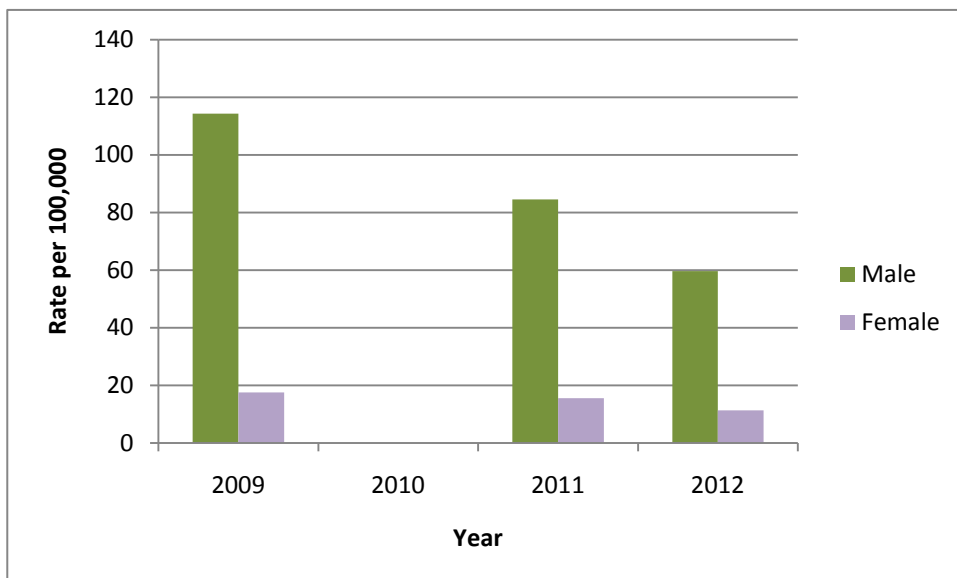
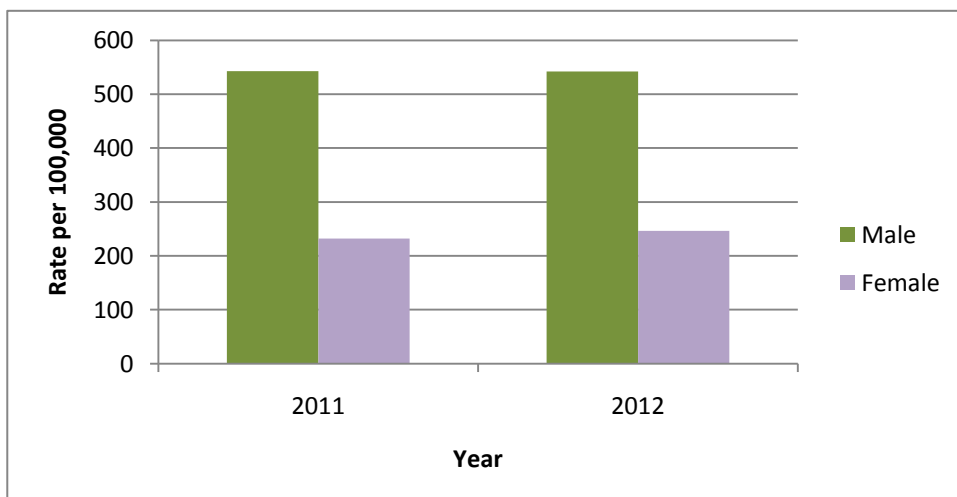


Figure 2: Assault related emergency department attendance rates by sex, 2011, 2012

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)



3.1.2 Rates – age and sex

Assault related IP admissions are mainly of males (figures 3, 4), particularly young adults males from 15 years onwards. Assault rates decrease with increasing age for both males and females. Across all ages, rates appear to be decreasing over time, particularly for 15 to 19 year old males.

Figure 3: Assault related in-patient admission rates males, 2009, 2011, 2012
 Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

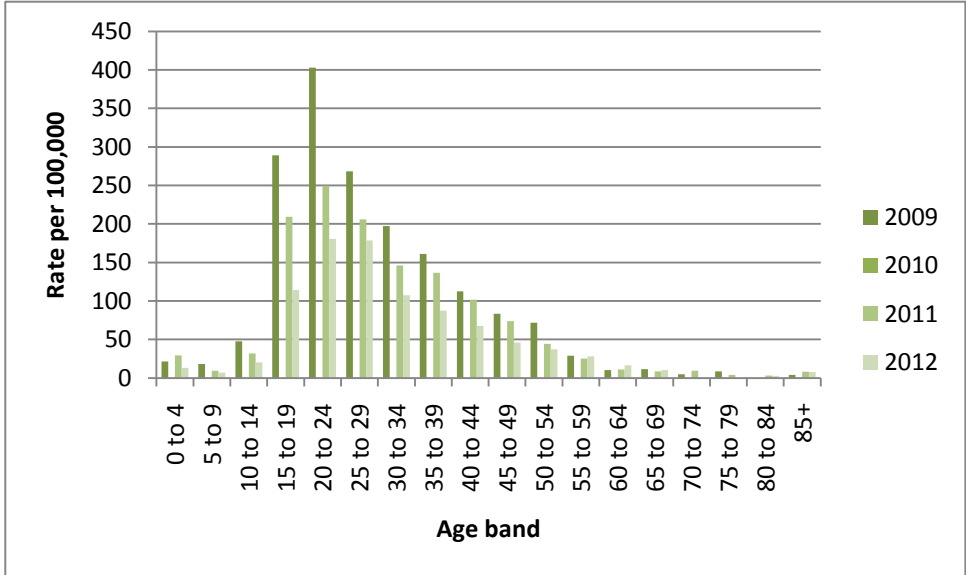
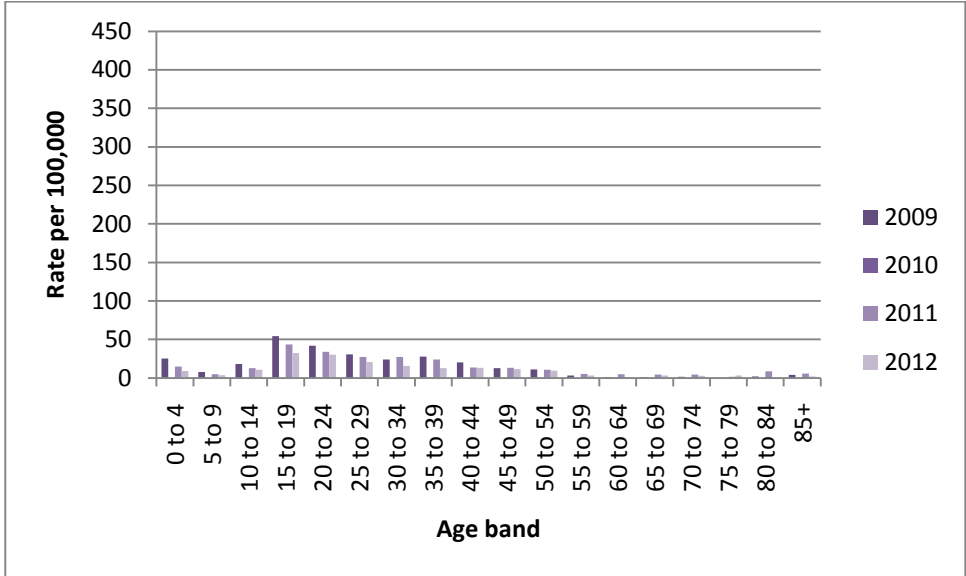


Figure 4: Assault related in-patient admission rates females, 2009, 2011, 2012
 Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)



ED attendances following assault show a similar profile to IP admissions for both males and females (figures 5, 6), but with attendance rates increasing over time. However, given the known issues with ED data quality, whether this is a true finding is questionable.

Figure 5: Assault related emergency department attendance rates males 2011, 2012 (data not available for 2009 and 2010)

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

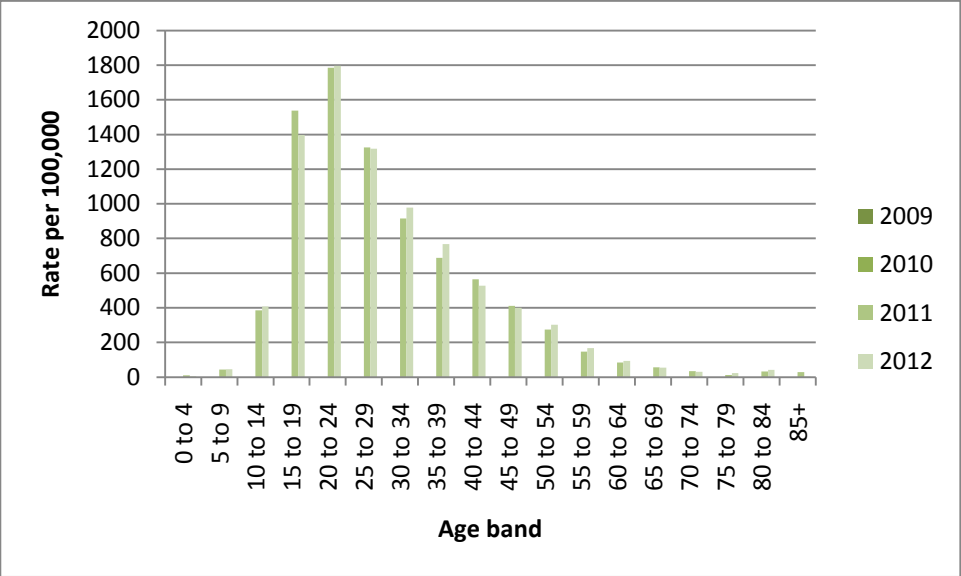
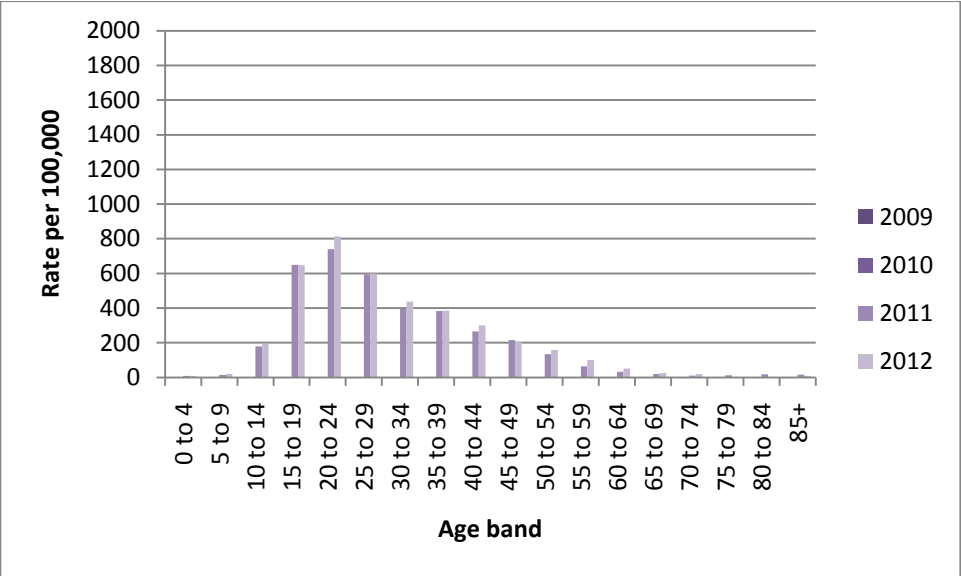


Figure 6: Assault related emergency department attendance rates females, 2011, 2012 (data not available for 2009 and 2010)

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)



3.1.3 Health Board in-patient admission profiles

For young adult males, Aneurin Bevan Health Board (HB) is notable for high IP rates, along with Abertawe Bro Morgannwg (ABMU) HB (table 1). Cardiff and Vale and Powys have consistently low rates of IP admission for assault, but in the case of Powys this is likely to be linked to rurality and distance to treatment.

Table 1:- Assault related crude in-patient admission rates (per 100,000), all males and females, and 10 to 39 year olds 2011, 2012, by Health Board

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

	Betsi Cadwaladr		Powys		Hywel Dda		Abertawe Bro Morgannwg		Cardiff Vale		Cwm Taf		Aneurin Bevan	
	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	2012
Male														
10 to 14	30.0	20.5	0.0	0.0	17.7	27.3	6.6	13.6	22.4	7.6	92.3	23.9	49.8	34.6
15 to 19	245.3	149.0	167.4	72.1	134.2	100.6	230.2	187.3	116.3	42.9	234.5	72.9	276.4	109.0
20 to 24	390.4	192.2	142.9	228.9	223.1	166.3	208.4	238.7	69.4	98.4	274.2	96.5	380.2	259.9
25 to 29	205.3	186.6	130.7	128.0	175.5	204.2	241.6	203.6	125.7	37.0	217.7	203.4	285.8	283.6
30 to 34	159.6	97.8	34.7	0.0	134.3	87.9	155.4	179.4	79.1	24.0	170.8	124.1	201.2	152.6
35 to 39	126.0	64.7	89.9	64.4	186.9	141.3	158.1	98.2	78.0	53.3	139.7	85.0	160.7	111.7
Total	90.7	60.6	44.1	33.5	67.3	53.1	94.8	77.7	51.8	27.5	99.0	63.1	107.9	77.0
Female														
10 to 14	26.5	21.8	26.9	0.0	0.0	10.0	0.0	7.2	15.6	0.0	23.3	24.5	5.7	6.0
15 to 19	58.6	39.8	25.6	26.3	32.5	16.6	25.6	32.0	18.2	18.4	65.7	43.8	64.4	43.2
20 to 24	54.0	29.3	67.5	66.8	32.7	39.2	28.2	28.1	8.8	12.7	20.1	0.0	51.5	62.1
25 to 29	21.8	16.2	0.0	0.0	0.0	10.7	31.9	44.6	5.5	11.1	40.8	0.0	62.5	33.8
30 to 34	33.3	38.3	68.6	0.0	21.1	10.3	39.9	26.0	6.2	6.1	0.0	0.0	41.3	5.8
35 to 39	24.9	10.5	56.5	0.0	9.7	10.3	18.5	26.1	20.3	6.8	11.0	0.0	40.3	18.1
Total	19.7	13.1	13.4	5.9	8.2	7.7	11.8	13.3	9.1	7.0	20.0	6.7	22.1	16.6

Female IP admission profiles are difficult to interpret because of the small numbers of cases. This is also the likely reason why Powys has highest rates in 2011, but lowest in 2012, with small numbers leading to artificially high rates.

3.1.4 Deprivation profiles

Deprivation profiles were only available on an all-Wales basis and assault related IP admissions amongst the most deprived were 3.7 times higher than those for the least deprived (table 2).

Table 2:- Assault related in-patient admission rates (per 100,000), and rate ratio, by deprivation fifth, 2011

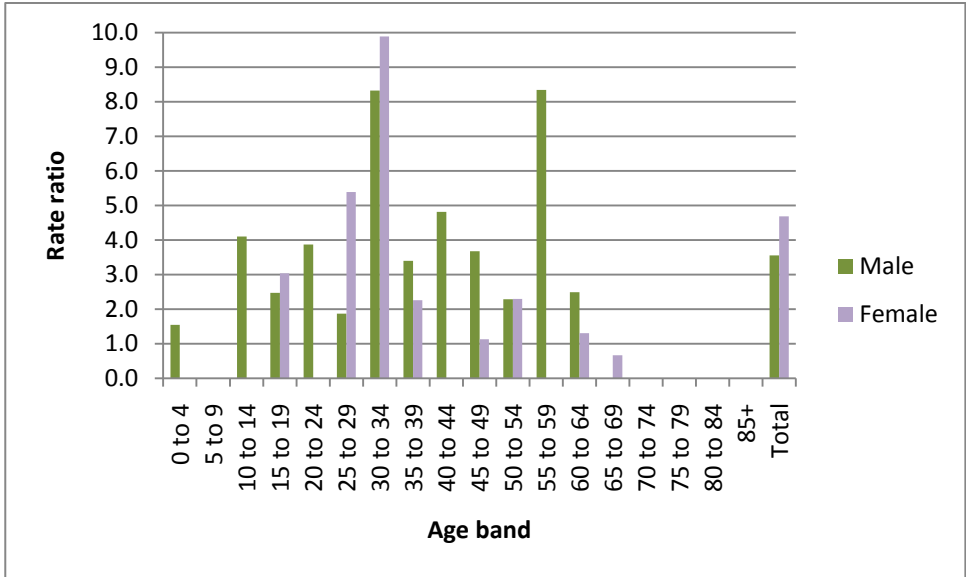
Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

	Rate per 100,000
Least deprived	23.9
Next least deprived	38.4
Middle	42.3
Next most deprived	63.4
Most deprived	87.9
Total	51.1
Ratio	3.7

IP admission rates were consistently higher among the most, compared with least deprived, with the size of the inequalities gap again influenced by small numbers of cases in each age band (figure 7, appendix 5.1).

Figure 7: Assault related in-patient admissions by deprivation fifth; rate ratios (most deprived to least deprived) by age and sex

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)



3.2 Burden

The total burden of assault injuries in Wales in 2011 was 2601 DALYs, 78.7% of which were suffered by males.

Almost half (41.0%) of the total burden of assaults falls on males aged 15 to 29 years (figure 8), but in these and all other age groups the burden relates to living with disability (years lived with disability, YLD), rather than years of life lost (YLL). Amongst females, it is also young adults aged 15 to 24, who suffer the greatest burden (184 DALYs, 33% of female DALYs, 7% of all DALYs; figure 9).

Figure 8: Burden of assaults by age group, males

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

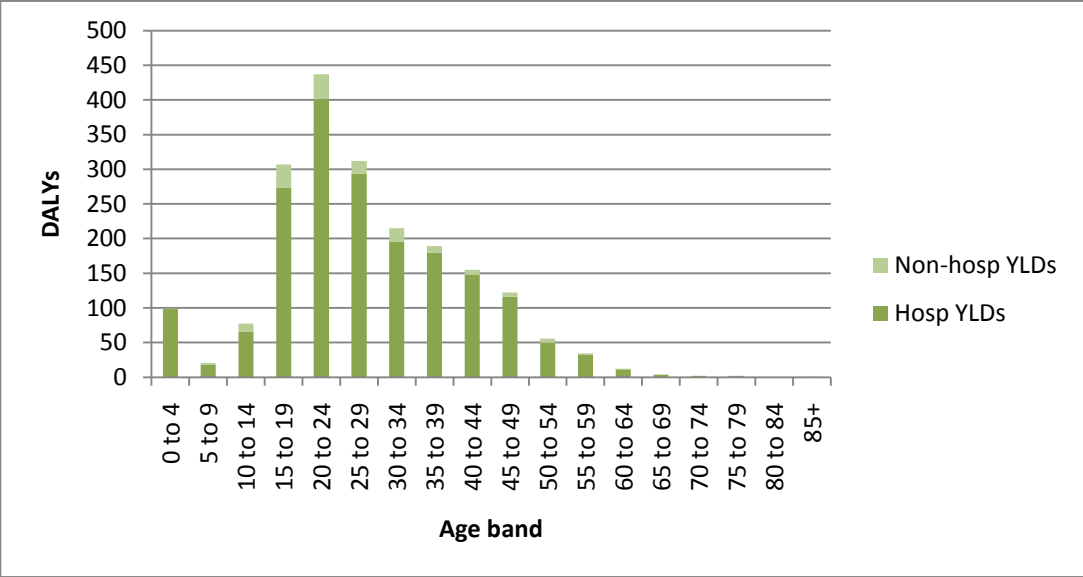
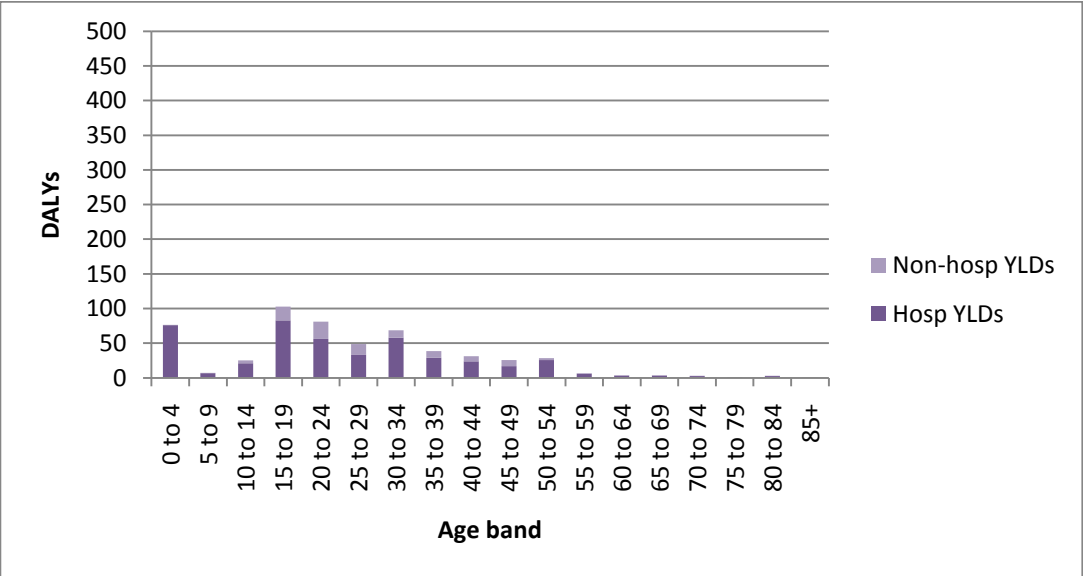


Figure 9: Burden of assaults by age group, females

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

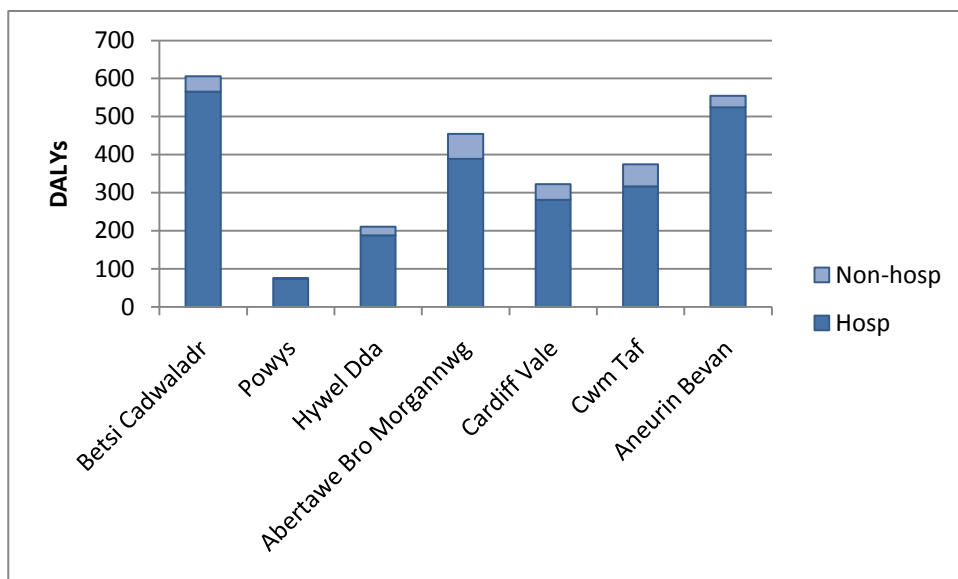


3.2.1 Burden of assaults by Health Board and Local Authority

The greatest overall burden of assaults in 2011 was in Betsi Cadwaladr HB, lowest in Powys (figure 10).

Figure 10: Burden of assaults by Health Board

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)



Adjusting for the size of the population, Cwm Taf has the greatest burden of falls at 1.3 DALYs per 1000 population (table 3). The lowest DALY rates were in Powys and Hywel Dda, but, again this may be due to rurality influencing attendance and admission rates.

Table 3:- Assault related burden by Health Board

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

	Hosp YLDs	Non-Hosp YLDs	DALYs	Population	DALYs per 1000 population	DALYs at Powys / Hywel Dda rate	DALYs Saved	% decrease
Betsi Cadwaladr	566	40	607	688.4	0.9	413	194	31.9%
Powys	74	1	75	133.1	0.6	--	--	--
Hywel Dda	188	23	211	381.9	0.6	--	--	--
Abertawe Bro Morgannwg	389	66	455	518.0	0.9	311	144	31.7%
Cardiff Vale	282	41	323	472.1	0.7	283	40	12.3%
Cwm Taf	317	58	375	293.3	1.3	176	199	53.0%
Aneurin Bevan	525	30	555	577.1	1.0	346	208	37.6%
Total	2341	259	2601	3,063.9	0.8	1838	762	29.3%

3.2.2 Burden of assaults by deprivation fifth

The burden of assaults increased with increasing deprivation (figure 11; table 4) and was around five times higher in the most deprived, compared with the least deprived, areas.

Figure 11: Burden of assaults by deprivation fifth

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

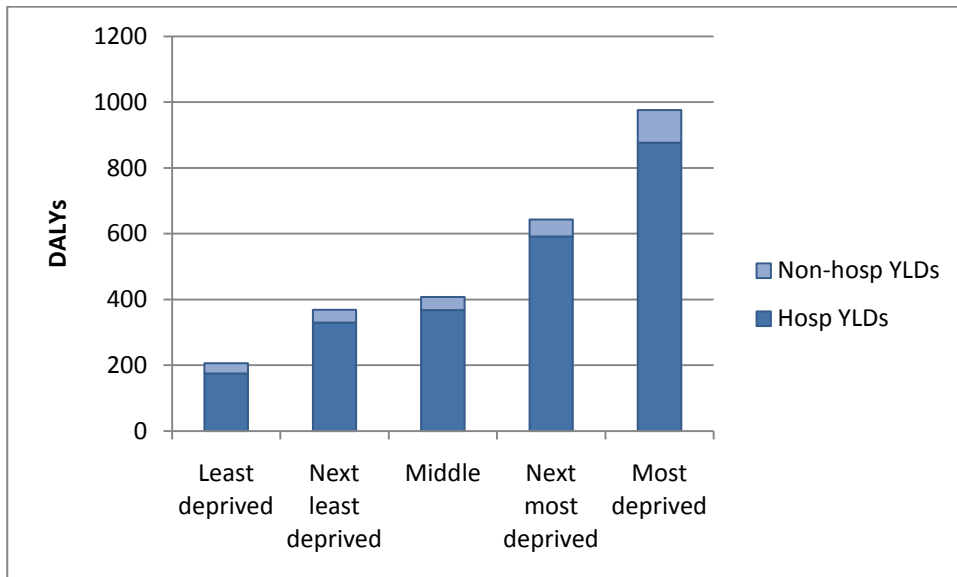


Table 4:- Assaults related burden by deprivation fifth

Produced by Public Health Wales and Swansea University, using EDDS (NWIS) & MYE (ONS)

	Hosp YLDs	Non-hosp YLDs	DALYs
Least deprived	175	31	206
Next least deprived	330	38	368
Middle	368	40	407
Next most deprived	592	52	643
Most deprived	876	99	975
Total	2341	259	2601

4 Summary

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There are still a number of data completeness and coding issues and some of the differences reported here may reflect variations in data quality. Nevertheless, the best way to improve data quality is to use the data and stimulate interest in the results.

4.1 Main findings

Despite some improvements in the quality of coding of emergency department data there are still considerable problems with all sources of information on injury, including mortality data. These issues are so substantial that they could distort local authority and health board comparators.

The following findings may be influenced by data quality issues but should still be reported.

Male in-patient admission rates for assaults are six times higher than those of females.

In-patient admission rates peak in young adult males.

Admission rates for 15 to 19 year old males dropped considerably between 2009 and 2012.

Those in the most deprived areas have admission rates 3.7 times higher than those in the least deprived areas.

Almost half of the burden of assaults is suffered by 15 to 29 year old males.

The greatest burden of assaults is in Cwm Taf.

4.2 Recommendations

There are three major recommendations from the entire Wales BOI series:-

- 1. Injury data collection in emergency departments needs to be improved. This will require action from policy makers, Health Board executives and managers, ED staff and the general public.*
- 2. Injury prevention in Wales needs to be more collaborative and cross-sectoral so that there are greater benefits and the burden of injuries on health is reduced more quickly and more effectively.*
- 3. Injury prevention should be recognised as a key public health priority, with greater commitment and capacity to support the implementation of evidence based injury prevention and control initiatives.*

Specific recommendations relating to this report are:-

- 1. It is likely that assault related attendances at emergency departments are under-counted, and instead are recorded as "accidents". This makes for difficulties with assessing the true burden of assault injuries.*
- 2. Policy makers are often keen to assess the burden of specific sub-groups of assault injury, such as domestic violence. Given the small numbers of assault cases overall, more detailed analysis of these data will be impractical. To obtain these data, in the first instance, the quality of assault data generally will need to be improved. From there, it is recommended that rather than attempting to collect more detail electronically, the electronic record is used to identify cases for record review by hand.*

5 Appendices

5.1 IP admissions, assaults, rates by age, sex and deprivation fifth

2011	Rate per 100,000										Rate ratios	
	Least deprived		Next least deprived		Middle		Next most deprived		Most deprived		Male	Female
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
0 to 4	20.6	0.0	32.4	6.7	23.0	12.2	41.3	16.4	31.9	33.6	1.5	--
5 to 9	0.0	7.0	6.5	13.6	6.2	0.0	6.0	6.3	27.0	0.0	--	--
10 to 14	17.8	0.0	11.7	6.2	17.1	12.2	40.0	18.0	72.8	27.2	4.1	--
15 to 19	128.2	21.8	169.8	32.6	199.3	50.6	269.7	53.7	316.5	66.0	2.5	3.0
20 to 24	113.7	0.0	219.3	10.6	237.1	64.4	295.7	43.7	440.0	51.3	3.9	--
25 to 29	162.2	7.7	172.7	13.3	166.5	11.6	248.6	53.5	302.3	41.2	1.9	5.4
30 to 34	36.2	7.0	116.9	12.8	134.6	5.9	137.9	37.6	301.1	69.3	8.3	9.9
35 to 39	73.0	17.4	95.0	17.4	97.5	16.9	192.5	33.1	247.7	39.2	3.4	2.3
40 to 44	39.2	0.0	78.7	0.0	127.2	4.7	98.1	24.0	188.4	44.9	4.8	--
45 to 49	41.9	8.8	55.1	13.2	41.4	9.0	97.1	28.4	153.7	10.0	3.7	1.1
50 to 54	25.0	9.7	30.1	4.8	34.4	4.8	85.4	15.5	57.1	22.1	2.3	2.3
55 to 59	5.4	5.2	31.4	14.9	20.9	5.0	29.7	0.0	45.1	0.0	8.3	--
60 to 64	4.9	4.6	22.9	9.0	9.3	0.0	5.6	5.5	12.3	6.0	2.5	1.3
65 to 69	5.9	11.1	22.3	0.0	0.0	0.0	13.7	6.6	0.0	7.4	--	0.7
70 to 74	7.7	0.0	7.3	0.0	21.4	13.3	8.6	0.0	0.0	8.6	--	--
75 to 79	9.6	0.0	0.0	0.0	0.0	7.8	11.7	0.0	0.0	0.0	--	--
80 to 84	0.0	0.0	0.0	10.6	0.0	20.1	0.0	0.0	20.2	13.3	--	--
85+	0.0	0.0	39.8	9.5	0.0	9.1	0.0	0.0	0.0	12.3	--	--
Total	42.3	6.1	67.9	9.9	71.7	13.8	106.4	21.9	150.4	28.5	3.6	4.7