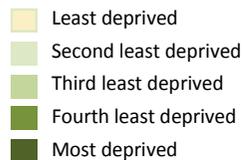


Violence profile: Wigan

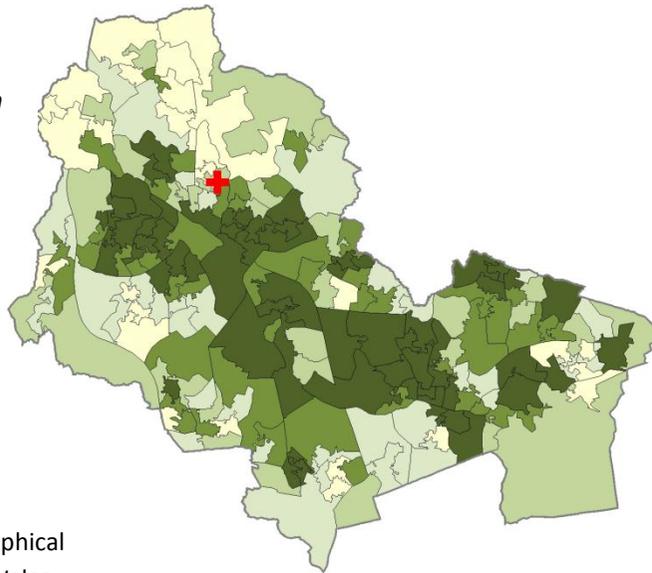
Use of NHS data in local violence prevention

This profile utilises five sources of NHS data to present a picture of violence in Wigan local authority (LA). The profile aims to provide health and other professionals involved in violence prevention with an understanding of NHS data sources and their potential for informing local violence prevention initiatives. The profiles examine the extent of violence, trends, at-risk groups and communities, and circumstances of assault. The profile focuses on NHS data and does not therefore provide a full picture of violence within Wigan.

Figure 1: Wigan LA by Lower Super Output Area (LSOA*) showing variation in deprivation.



Royal Albert Edward Infirmary



* LSOAs are a set of geographical areas across England and Wales that are defined by population size (average population is 1,500).

Box 1: Key findings

- Levels of violence, as measured by NHS and police sources, have decreased in Wigan LA over recent years. However, rates of violence were higher than the England average for a number of indicators.
- Violence was most likely to occur on Saturdays and Sundays and between the hours of 8pm and 4am, largely reflecting Friday and Saturday nights (ambulance and A&E data).
- Around 34% of assaults took place in a public area and a further 28% at home (A&E data).
- The majority of injuries from severe assaults were caused by a blow to the body (58%; TARN data, n=31). Around 10% of ambulance call-outs for assault-related injuries reported the use of a sharp object or gun in the incident notes (ambulance data).
- In 86% of assault cases, the victim had consumed alcohol in the 12 hours prior to seeking treatment (A&E data).
- The majority of people treated for assault-related injuries were male (~70%) and aged 10-39 (~35% were aged 20-29, ~20% aged 10-19 and ~20% aged 30-39) (ambulance, A&E, hospital admissions and TARN data).
- There was a concentration of assaults occurring within Wigan, Leigh and Atherton town centres.
- Areas of Wigan with higher deprivation levels also had significantly higher rates of A&E presentations for assault and hospital admissions for assault.

The NHS data sources used are: 1) ambulance service call-outs; 2) attendances to the Royal Albert Edward Infirmary Accident and Emergency Department (A&E); 3) Hospital Episode Statistics (HES) experimental A&E data; 4) HES hospital admissions; and 5) reports from the Trauma Audit and Research Network (TARN; clinical reports of severe trauma). For more information about the data sources used, see Table 2.

Summary of violence

A summary of violence is presented in Table 1. Mortality data and police data have been presented alongside the NHS data sources to provide a rounded picture of violence. TARN data is not included in the summary table since there are known problems with the level of reporting (see page 8 for more information). “Hospital-based” A&E data refers to attendances to the Royal Albert Edward Infirmary A&E (regardless of a patient’s area of residence). “Residence-based” A&E data refers to attendances reported to the HES experimental A&E database and covers all attendances to an A&E department for residents of Wigan LA (regardless of which hospital they attended). For more information about the data sources see page 8.

Table 1: Indicators of violence for Wigan local authority.

	Number	Rate per 1,000 pop	England rate per 1,000 pop	% Change from previous 2 years	Direction of change
Ambulance call-outs for assault-related incidents (2012/13)¹	560	1.76	na	nc	nc
A&E attendances for assault (hospital-based) (2012/13)²	1055	na	na	-18.97	↓
A&E attendances for assault (residence-based) (2010/11)³	1365	4.44	3.60	na	na
Emergency hospital admissions for assault (2011/12)⁴	295	1.00	0.64	-10.61	↓
Deaths from assault (2011)⁵	<5	nc	0.01	nc	nc
Police-recorded violent crime (2011/12)⁶	3100	10.08	13.60	-23.04	↓
Police-recorded sexual crime (2011/12)⁶	193	0.63	0.96	-25.48	↓

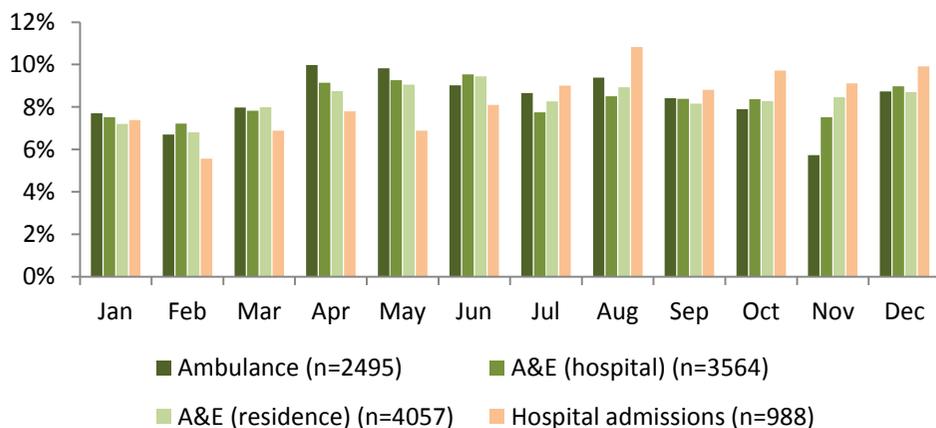
1. Data from the North West Ambulance Service (NWAS). Crude rate per 1,000 population (mid 2012 estimates, ONS), 2012/13. Percent change has not been calculated for this indicator due to data uncertainties in 2010/11.
2. Data from Royal Albert Edward Infirmary A&E. Attendances for assault (regardless of patient residence), 2012/13.
3. Data based on Hospital Episode Statistics (HES) A&E experimental dataset; experimental data created by the former North West Public Health Observatory (www.eviper.org). First attendances for assault by residents of Wigan local authority, 2010/11. Crude rate per 1,000 population (mid 2010 estimates, ONS). Percent change has not been calculated since the adjusted data is only available for the one year.
4. Data from HES admitted patient care. Emergency hospital admissions for assault (ICD-10 codes X85-Y09) by residents of Wigan local authority, 2011/12. Directly Standardised Rate per 1,000 population (mid 2011 estimates, ONS).
5. Data from ONS mortality database. Deaths from assault, 2011. Percent change has not been calculated due to very low numbers.
6. Data from police-recorded crimes, crude rate per 1,000 population (mid 2011 estimates, ONS), 2011/12.

Data in **red text** indicate that the value is significantly higher (statistically) than the England average; data in **green text** indicate that the value is significantly lower (statistically) than the England average; * Low numbers have been suppressed; na = not available; nc = not calculated.

When is violence most likely to occur?

Figure 2 shows the percentage of assault-related incidents that fall within each month by data source. TARN data is not included due to problems with the level of reporting (see page 8). Trends differ across data sources. Levels of assault were highest for ambulance and A&E data from April through to May/June and highest for hospital admissions data during August and October.

Figure 2: Percentage of assault-related incidents by data source, by month (three years combined data [see Table 2]).



Information on assault timings can be generated from calls to ambulance services. However, the time of presentation to the A&E can also be a proxy for assault time. The College of Emergency Medicine (CEM) recommend collecting information on assault time and date at A&E presentation (see Box 2), which would allow a more accurate understanding of the timings of assault. Although at the time of analysis this information was collected by the Royal Albert Edward Infirmary A&E, the completion rates for these fields were low (9% in 2012/13 but improving). The available data sources show that assaults took place most frequently between the hours of 8pm and 4am (or between 12am and 4am for A&E presentations; Figure

3). Assaults occurred most frequently on Saturdays and Sundays (Figure 4), which reflects Friday and Saturday nights.

Figure 3: Percentage of assault-related call-outs/attendances by data source, by hour (three years combined data [see Table 2]).

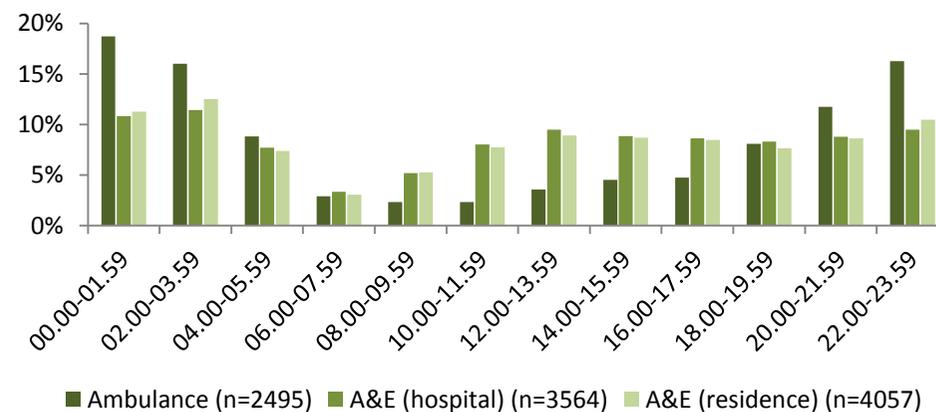
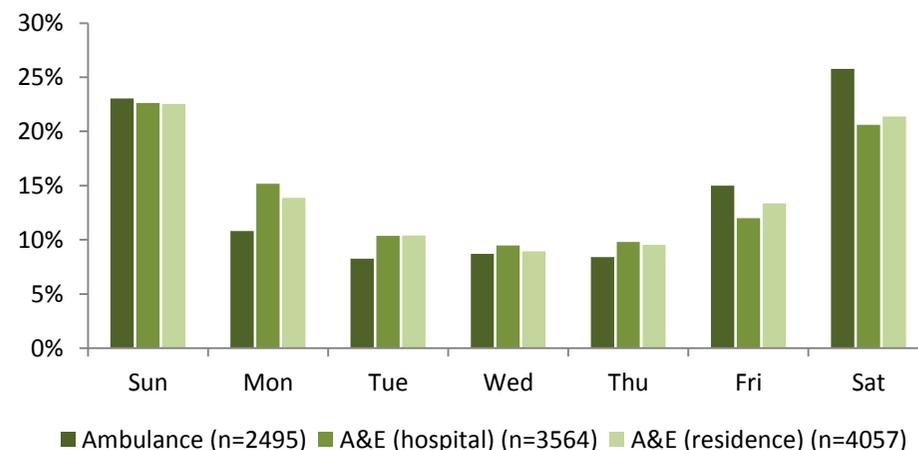


Figure 4: Percentage of assault-related call-outs/attendances by data source, by day (three years combined data [see Table 2]).



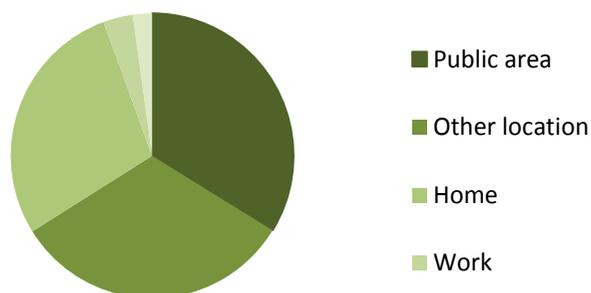
Circumstances around violence

Information on the circumstances of violence can be obtained from Royal Albert Edward Infirmary A&E data. Although only 31 cases of severe assault were recorded through TARN at Royal Albert Edward Infirmary between 2010 and 2012, this data set also includes information on the location and mechanism of assault and is therefore useful to present.

Location of assaults

Figure 5 shows the location of assaults as reported by Royal Albert Edward Infirmary A&E. A third of cases occurred in a public area (34%) and 28% at home. A further third occurred in another (unspecified) location. Data from TARN suggests that where location is known (n=29; 94%) around half (52%) of severe assaults took place in a public area.

Figure 5: Location of assaults for presentations to Royal Albert Edward Infirmary A&E (three years combined data; n=3564 [see Table 2]).

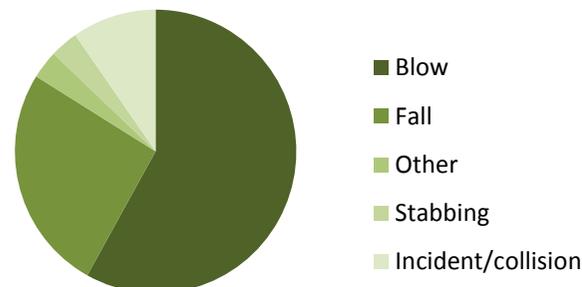


Weapons used in assaults

Basic information on the weapon used in the assault can be extracted from the ambulance service and TARN data. For instance, around 10% of ambulance call-out incidents reported involvement of a sharp object or gun within the incident notes. TARN data suggested that 58% of severe assault cases were caused by a

blow to the body (Figure 6). Although at the time of analysis Royal Albert Edward Infirmary A&E collected information on weapon use, the completion rate for this field for the latest available data (2012/13) was low (9%) and could not be meaningfully analysed.

Figure 6: Mechanism of severe assaults reported through TARN at Royal Albert Edward Infirmary (three years combined data; n=31 [see Table 2]).



Use of alcohol

Data from Royal Albert Edward Infirmary A&E records the use of alcohol in the 12 hours prior to A&E attendance. Around 86% of assault patients in 2012/13 reported drinking alcohol.

Box 2: CEM-recommended data collection at Royal Albert Edward Infirmary A&E

The College of Emergency Medicine (CEM) has produced guidelines for information sharing at A&Es to reduce community violence. These guidelines promote collection of the following additional data fields by receptionists: the **date and time** of assault, the **location** (name of pub, school or street) and the **weapon** used. In September 2014, the Health and Social Care Information Centre developed an information standard on A&E information sharing to tackle violence¹, including the CEM-recommended questions, along with the time and date of the A&E attendance. Whilst Royal Albert Edward Infirmary A&E at the time of analysis had the facility to collect these fields the completion rates were low (although improving). Improved completion would increase understanding of violence in and around Wigan and could enable identification of hotspot areas for violence.

¹Available from: <http://www.isb.nhs.uk/documents/isb-1594/amd-31-2012/1594312012spec.pdf>

At-risk groups

Health data can be used alongside police data on victims and offenders (Box 3) to better understand which groups of the community are most affected by violence. Figures 7 and 8 show that the majority of people treated for assault-related injuries were male, with data for the most severe cases (hospital admissions and TARN) showing slightly higher percentages for males than other sources. The majority of assault victims were aged between 10 and 39 years of age, with the highest frequency of cases seen in the 20-29 age group. TARN data has not been included in Figure 8 since overall numbers are very low (n=31).

In terms of ethnicity, the majority of assault victims were White British (97% for Royal Albert Edward Infirmary A&E presentations where ethnicity is known [97%]; 96% for hospital admissions where ethnicity is known [94%]). This compared to around 95% White British within Wigan LA population¹.

Figure 7: Percentage of assault-related incidents by data source, by sex (three years combined data [see Table 2]).

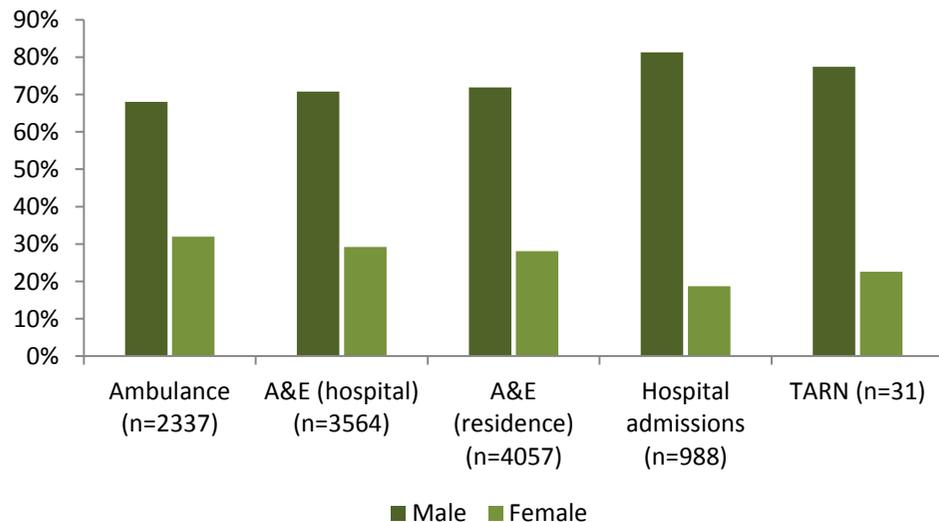
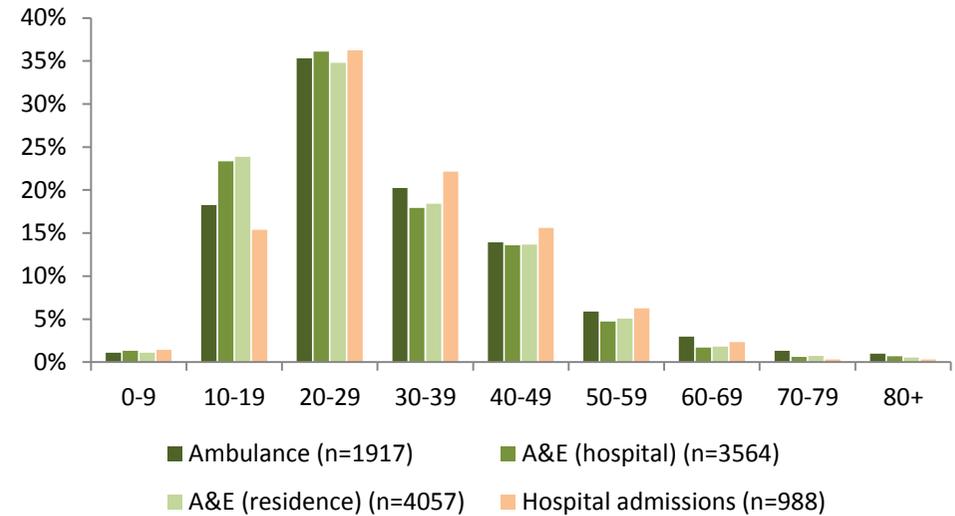


Figure 8: Percentage of assault-related incidents by data source, by age-group (three years combined data [see Table 2]).



Box 3: Police data for perpetrators and victims

Data from Greater Manchester Police show that whilst the majority of perpetrators of violent crime for Wigan were male (79%), victims were more evenly spread (47% male). The percentage of female victims was higher than that reported in health sources but reflects the wider range of violence reported to the police that includes less severe forms of violence. For instance, nationally, only around 50% of police-recorded violent crime results in injury. For both perpetrators and victims, the majority of cases were aged between 10 and 39 (79% and 70% respectively), with the frequency of cases highest in the 20-29 age group (35% and 30% respectively). Around 87% of victims and 98% of perpetrators (with a known ethnicity; 95% and 85% respectively) were White or White British.

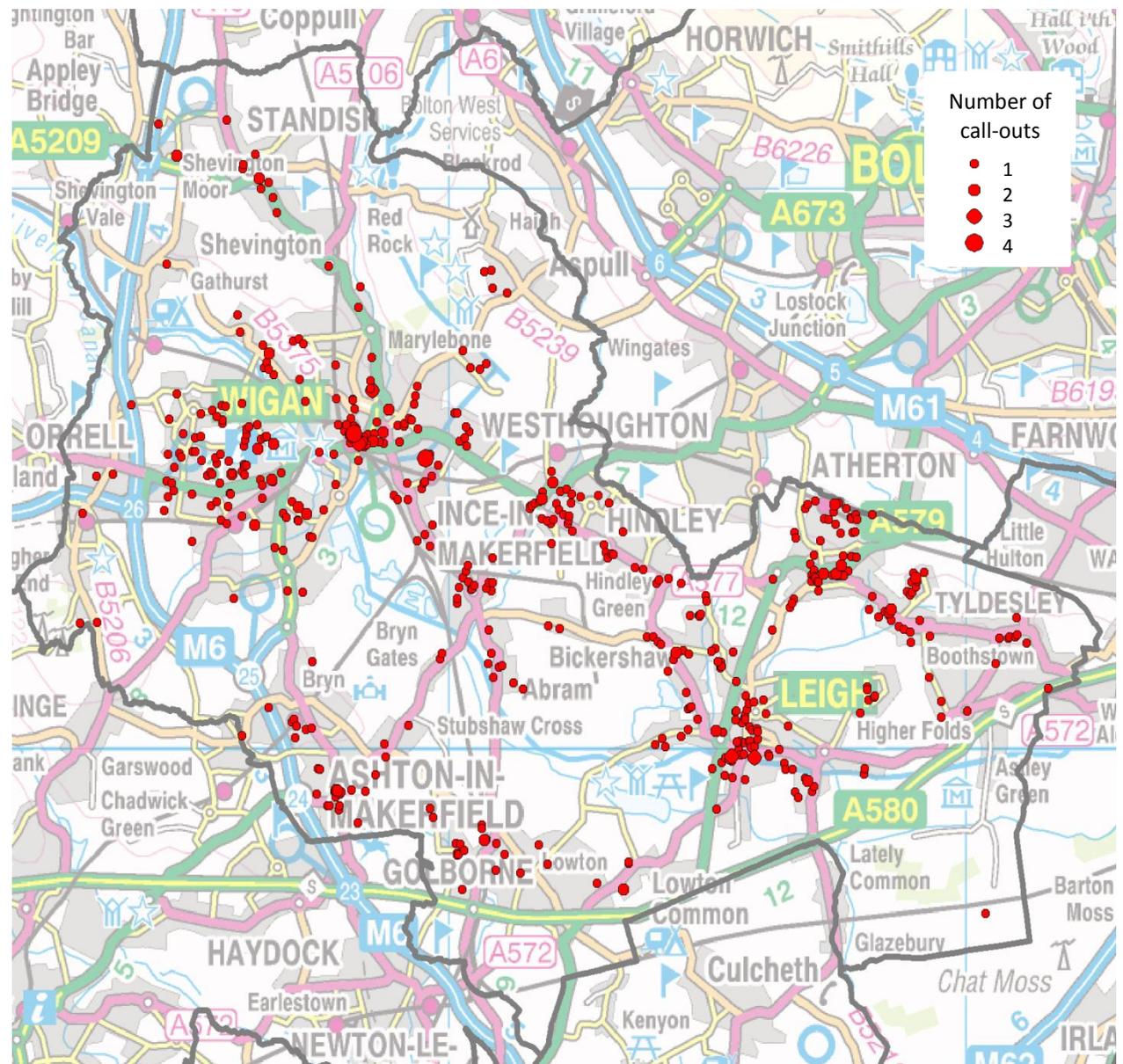
1. 2011 Census for England and Wales. Available from <http://www.ons.gov.uk/ons/guide-method/census/2011/index.html>

At-risk locations and communities

Health data can be used to identify where assaults take place and which communities are most at risk. Data from the ambulance service (Figure 9) records the location of call-outs for assault-related incidents, and show a concentration of assaults within Wigan, Leigh and Atherton town centres. CEM-recommended data from Royal Albert Edward Infirmary A&E also has the potential to identify the location of assault and so hotspot areas for intervention (see Box 2) but at the time of analysis was poorly completed (9% for 2012/13).

Figures 10 and 11 show the rate of A&E presentations for assault and the rate of hospital admissions for assault by Lower Super Output Area (LSOA) of residence. These maps can help identify areas of Wigan that would benefit most from violence prevention initiatives. Areas of Wigan with higher deprivation levels (Figure 1) also had significantly higher* rates of A&E presentations for assault and hospital admissions for assault.

Figure 9: Location of ambulance call-outs for assault related incidents within Wigan LA, 2012/13.



* Using Analysis of Variance (ANOVA). $F=51.82$ ($p<0.01$) for A&E presentations and $F=35.99$ ($p<0.01$) for hospital admissions.

Figure 10: Crude rate of A&E attendances for assault by LSOA of patient residence within Wigan LA, 2009/10-2011/12.

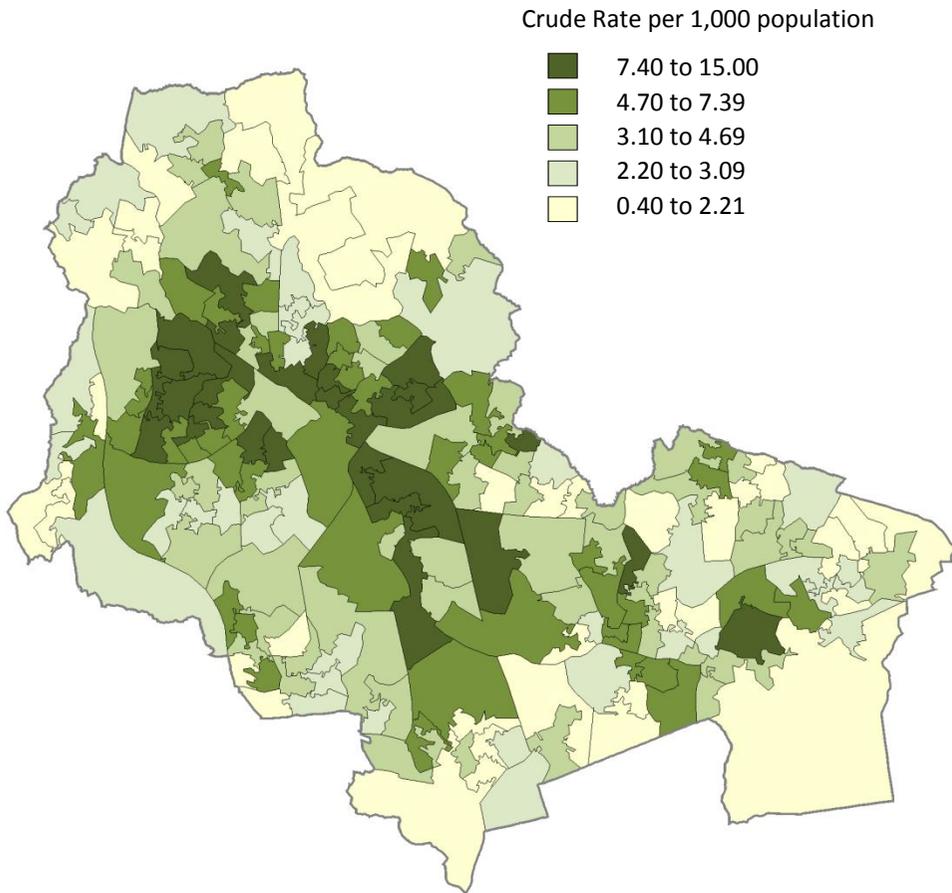
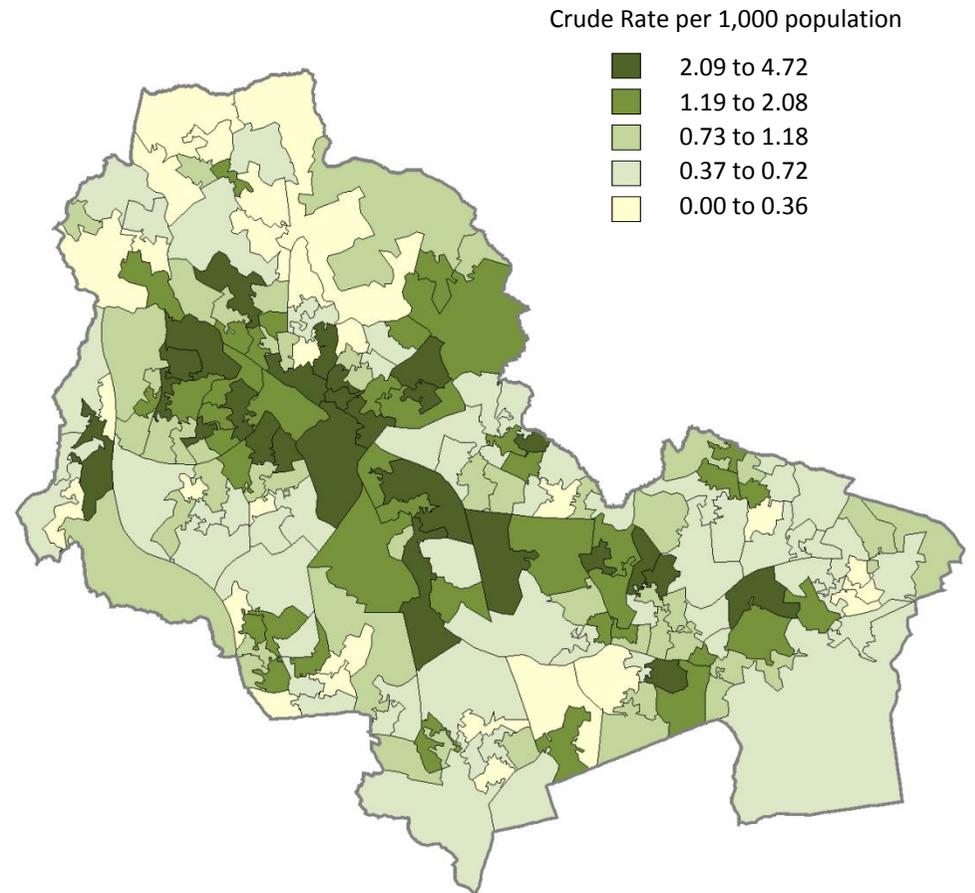


Figure 11: Crude rate of hospital admissions for assault by LSOA of patient residence within Wigan LA, 2009/10-2011/12.



NHS data sources

A summary of the data sources used in this report is shown in Table 2, based on information from: Quigg et al. *Health data for violence prevention manual: A manual for community safety partnerships and other violence prevention partners, 2013.*

Table 2: Summary of NHS data sources.

Data source	Availability and access	Data fields available	Notes
1. Ambulance call-outs	Data available via the North West Ambulance Service.	Variables include patient demographics, reason for the call-out, call-out time and date, and call-out location.	Years 2010/11 to 2012/13. Analysis was restricted to all ambulance call-outs within Wigan local authority for “assault” or “stab/gunshot”.
2. Royal Albert Edward Infirmary A&E data (A&E hospital)	Data can be accessed via the Trauma and Injury Intelligence Group (TIIG). www.tiig.info/default.aspx	Variables include patient demographics, incident type, date and time of presentation, date and time of assault, incident location, LSOA of residence, assault location, assault weapon and use of alcohol.	Years 2010/11 to 2012/13. This dataset includes all patients presenting to Royal Albert Edward Infirmary A&E regardless of their area of residence. Analysis was restricted to all patients presenting with an injury caused by “assault”.
3. HES experimental A&E data (A&E residence)	Local authority level data are available via the Violence Indicator Profiles for England Resource (VIPER) www.evipr.org.uk . Bespoke data extracts/analyses are available via the Health & Social Care Information Centre (HSCIC) www.hscic.gov.uk/hes .	Variables include patient demographics, incident type, date and time of presentation and LSOA of residence.	Years 2009/10 to 2011/12. This dataset is published as experimental since although coverage was improving year on year, some data quality and coverage issues still remained. The data includes all Wigan local authority residents presenting to an A&E in England regardless of which hospital they attended. Analysis was restricted to all patients presenting with an injury caused by “assault”.
4. Hospital admissions	Local authority level data are available via the Violence Indicator Profiles for England Resource (VIPER) www.evipr.org.uk . Bespoke data extracts/analyses are available via the Health & Social Care Information Centre (HSCIC). www.hscic.gov.uk/hes .	Variables include patient demographics, admission date and method and cause of hospital admission.	Years 2009/10 to 2011/12. This dataset includes information on all hospital admissions to NHS hospitals including private patients and admissions of NHS patients who are treated elsewhere. The data includes all Wigan residents presenting to a hospital in England regardless of which hospital they attended. Analysis was restricted to ICD-10 codes X85-Y09 and emergency admissions.
5. Trauma Audit and Research Network (TARN)	Bespoke data extracts are available from TARN www.tarn.ac.uk .	Variables include patient demographics, type of injury (blunt or penetrating), injury mechanism (e.g. stabbing, shooting), and injury location (e.g. home, office).	Years 2010 to 2012. This dataset records clinical records of severe trauma (e.g. a length of stay in hospital of 72 hours or more). Analysis was restricted to patients where the cause of injury is assault or intent inconclusive. There are issues with data coverage: the number of cases recorded for Royal Albert Edward Infirmary was lower than expected.

About the profiles

Recognising the valuable role that NHS data can play in addressing the growing problem of gang and youth violence in some English cities, the Coalition Government has prioritised work to improve data sharing on violence within hospitals, and particularly A&Es. The Department of Health is currently running a programme to support A&Es with collecting a minimum data set (see Box 2) and sharing this with Community Safety Partnerships.

This violence profile forms part of a wider, three-year project funded by the Department of Health that aims to identify and support the optimum use of NHS data in local violence prevention, and to identify the impacts of local NHS data sharing on levels of violence. Nine local authorities in the North West and London are participating in the project. For more information visit: <http://www.cph.org.uk/optimising-the-use-of-nhs-intelligence-in-local-violence-prevention-and-measuring-its-impact-on-violence/>

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