Understanding the intersection of routine healthcare and crime data in Greater Manchester

Laura Parker, Kathryn Willan, Louis Richards, Greater Manchester Violence Reduction Unit

Introduction

Understanding the epidemiology of violence is imperative for effective prevention. The Serious Violence Duty stipulates that specified authorities may share anonymous data to identify the kinds of violence that occur locally, the possible causes, and the most vulnerable cohorts. Although health data, including emergency department (A&E) attendance and hospital admission data, are used routinely, ambulance call out data rarely features. Analyses of data from the North West Ambulance Service (NWAS; 2013-2015) found that a third of patients with violence-related injuries were managed by ambulance staff alone[1]. Recent research exploring the consistency between police and ambulance service data suggests that only 10-20% of violent incidents attended by ambulance are represented in police data[2,3]. Therefore, if only crime, A&E attendance and hospital admission data are used, our understanding of violence is incomplete.

This study describes the epidemiology of violence in Greater Manchester (GM) according to the Police (GMP), the NHS (NHSGM; A&E attendance, hospital admission) and NWAS, and how each source contributes to our broader understanding of violence in the area.

Methods

Information relating to violent activity in Greater Manchester is routinely shared with the Greater Manchester Violence Reduction Unit (VRU) by GMP, NHSGM, and the Trauma and Injury Intelligence Group (Liverpool John Moores University; TIIG). TIIG receive data from NWAS, and A&E departments. Two years of data (Oct 2022 – Sept 2024) were described and compared by time, place, and person.

To estimate the volume of violent activity captured by ambulance services but not police, NWAS records were matched to GMP records based on the date and time of the incident, the sex and age category of the victim, and the Lower Super Output Area (LSOA) of the incident location.

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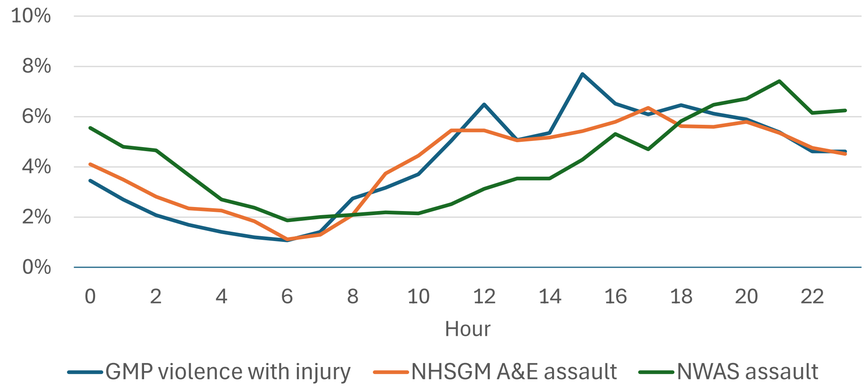
Key Findings

Time

More violent incidents were recorded on Friday and Saturday nights in all datasets. **Analyses of Monday - Thursday found GMP consistently record the highest volume of violent activity around 3pm, while NWAS experience peak assault-related activity between 7 and 11pm** (Fig. 1). However, variation within datasets is small.

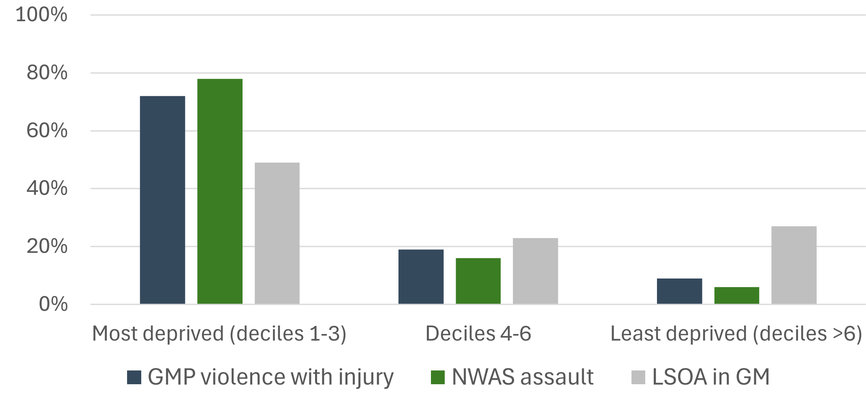
Figure 1: Recorded events per service, by time of day (24hr) Monday-Thursday



Place

According to GMP and NWAS, violence with injury was most common in deprived areas (per English indices of deprivation 2019 (IMD); Fig. 2). **While only 23% of LSOAs in GM lie in the most deprived decile, these comprised 46% of all assaults NWAS attended**. These LSOAs were also overrepresented in GMP data, though to a lesser extent (41%). At ward level, GMP and NWAS data were relatively consistent.

Figure 2: Recorded events per service by deprivation decile of incident location, relative to GM



Person

Compared with the GM population, **males were overrepresented as victims in all datasets**; men also comprised the greatest proportion, relative to women. While substantial differences are seen across health datasets, GMP recorded similar levels of activity for males and females (Fig. 3).

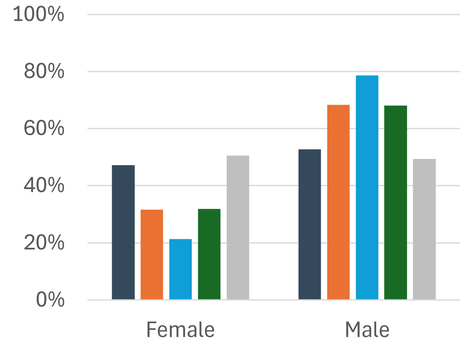
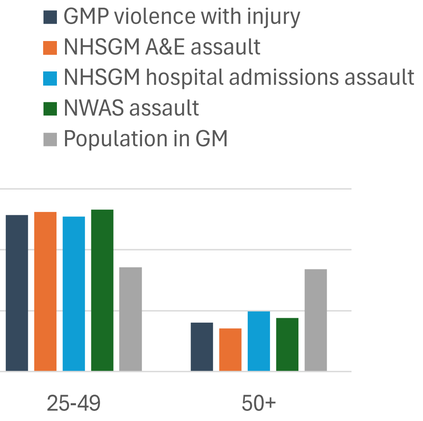


Figure 3: Recorded events per service by sex of victim, relative to GM (ONS 2021)

Figure 4: Recorded events per service by age of victim, relative to GM (ONS 2021)



Most were aged 25-49, and people aged 18-49 were over-represented compared to the wider GM population in all datasets. **More incidents by proportion were recorded by GMP for victims aged 0-17 than by health services** (18% vs 13-15%, respectively), however, the opposite is true for victims aged 18-24 (Fig. 4).

Overlap between ambulance and police data

Only 27% of ambulance callouts due to violence could be matched with a corresponding incident in the police dataset.

Discussion

The epidemiology of violence in GM varies by data source. Some difference may reflect the severity of the injury, as an ambulance callout or A&E attendance need not result in a hospital admission. However, variation in time and place indicates differences in service-use and reporting. Further, most violent incidents attended by the ambulance service were not identifiable in police datasets. This suggests a victim cohort exists which is unknown to criminal justice services. These analyses highlight the potential value of ambulance data for violence prevention in GM, though more work must be done with communities and providers to understand the drivers and implications of variation.

References
[1]Quigg et al., 2017; [2]Sutherland et al., 2021; [3]Simmonds et al., 2023