A short guide to using health data to inform local violence prevention

Produced as part of the Department of Health funded project Optimising the use of NHS data in local violence prevention and measuring its impact on violence

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1. Introduction

Health data have an important role to play in preventing violence. They can be used alongside police data to measure the levels and nature of violence in a local area; identify the population groups and geographical areas most affected; and inform the development, targeting and evaluation of prevention activity. The regular sharing of anonymised health data between health services and partners involved in addressing violence (e.g. Community Safety Partnerships [CSPs], public health teams and police) is crucial for supporting violence prevention activity.

This short guide aims to help health and other professionals set up successful data sharing processes and understand how anonymised health data can be fed into local violence prevention initiatives. More information, including case studies of successful data sharing systems, examples of how health data can be analysed and examples of how health data have been used to inform local violence prevention agendas can be found in the longer version of this guide[1].

2: Health data sources and their uses

Health data sources useful to local violence prevention activity include:

- **Local Accident and Emergency department (A&E) attendance data**: a core dataset (national commissioning dataset) collected by all A&Es that records information on patient demographics and time, date and cause of A&E presentation. Some A&Es collect detailed data from patients that have been assaulted (see Box 1 and Table 1).
- **HES (Hospital Episode Statistics) experimental A&E data**: a national dataset that collates the core dataset from local A&Es across England.

Box 1: National work towards sharing non-confidential A&E data
A national programme of work is underway to support A&Es in collecting assault data and establishing data sharing pathways with CSPs and police[2]. An Information Standard[3] has been developed that specifies a minimum set of data fields that should be collected and shared including fields recommended by the College of Emergency Medicine [CEM][4]: the assault location; the weapon used; and the date/time of assault; and A&E attendance date/time.

The data include information from A&Es, speciality A&E departments (e.g. dental), minor injury units and walk-in centres. Data can be analysed at both hospital and local authority levels.

- **HES hospital admissions data:** a national dataset that provides information on all inpatient admissions (patients requiring a hospital stay) to NHS hospitals, including private patients and admissions of NHS patients who are treated elsewhere. Data can be analysed at both hospital and local authority levels (local authority level data are available via the Public Health Outcomes Framework [Box 2]).
- **Ambulance service data:** information on all call-outs made by the ambulance service. Ambulance data are available by ambulance trust areas (which span a number of local authorities).

The type of information collected through each source varies and can offer different uses in violence prevention (Table 1). Examples of uses of health data in supporting violence prevention are presented in Table 2.

Box 2: Public Health Outcomes Framework (PHOF)
The PHOF sets out a list of outcomes and indicators to help monitor changes in the public's health. It provides a data tool including a range of key indicators, including violence-related hospital admissions, at a local authority level[5].

Table 1: Health data sources, relevant data fields and their value in local violence prevention

Data source	Geographical area available	Frequency that data can be shared	Relevant data items included	Value of data sources at a local level					
				Measuring violence and identifying long-term trends	Identifying at-risk populations	Identifying at-risk communities	Identifying hotspots	Identifying when assaults are most likely to occur	Identifying the circumstances of assault[a]
Local A&E attendance data (accessed through each local hospital)	Hospital	Typically monthly or fortnightly, depending on agreement with A&E	Core dataset: age, sex, date and time of attendance, LSOA[b] of residence. Where collected, details on the circumstances of assault, e.g. location, weapon, date and time, relationship to attacker and alcohol use.	✓	✓	✓[c]	✓	✓	✓
HES experimental A&E attendance data	Hospital and LA[d]	Published yearly	Core dataset (see above).	✓[e]	✓	✓[e]	×	✓	×
HES hospital admissions data	Hospital and LA	Published yearly	Age, sex, ethnicity, date of admission, LSOA of residence	✓	✓	✓	×	✓[f]	×
Ambulance service call-out data	Call-out location	Quarterly/ monthly - negotiated with service	Age, sex, date and time of call-out. Other information may be available (e.g. use of knife or gun).	✓	✓	×[g]	✓	✓	✓

a. e.g. the weapons used, the type of assault and the broad location of assault

b. LSOA = lower super output area: a set of geographical areas across England and Wales that are defined by population size (average population is 1,500)

c. With the caveat that local residents may attend A&Es in other areas

d. LA = local authority of patient residence

e. However there are currently reporting problems for certain hospitals

f. Useful for monthly trends

g. Residential location is not included in the call-out dataset

Table 2: Examples of the use of NHS data sources in local violence prevention

Health data uses	Use in informing violence prevention	Examples of use*
1. Measuring the extent of violence and identifying long-term trends	- Informing needs assessments - Identifying policing priorities - Developing violence prevention strategies - Setting targets - Evaluating prevention activity	In Wirral, data were collected at the A&E on: a) alcohol consumption prior to assault and b) the location of assault. Data from these fields were used to inform the development of a Wirral night-time strategy and to set and monitor a target to reduce alcohol-related assault presentations over the next four years.
2. Identifying when assaults are most likely to occur *(e.g. the month, day and/or time that assaults took place)*	Informing the timing of violence prevention activities	Data from 15 A&Es in the North West of England were analysed to explore the impact of the 2010 World Cup football tournament on A&E attendances for assault. Assault attendances were found to increase by 37.5% on days that England played, highlighting a need for local and national preparation for large sporting events.
3. Identifying at-risk populations and communities *(e.g. age groups, sex, ethnicities and residential areas most affected by violence)*	Targeting violence prevention resources at those populations most in need of support	In Wigan, A&E data (demographics and alcohol consumption prior to assault) were analysed and fed into an alcohol audit to identify groups of the community at highest risk of assault/problematic alcohol use. These groups were targeted by outreach services and awareness-raising campaigns.
4. Identifying hotspot locations for violence *(e.g. venues/streets frequently noted as assault locations)*	- Informing where violence prevention activities should be targeted - Supporting police licensing decisions and reviews	In Lambeth, A&E data (location of assault) and ambulance service data (location of call-out) were analysed to identify areas with significant night-time economy and gang issues. Overt and covert police operations were targeted at these areas.
5. Identifying the circumstances of assault *(e.g. weapon, type of assault, broad location of assault)*	- Informing the type of intervention needed - Informing where violence prevention activities would be best targeted	In Wirral, analysis of A&E assault data (weapon used in the assault/mode of injury) identified a high number of glass-related injuries. Polycarbonate glasses were introduced to licensed venues, resulting in a decrease in glass-related injuries.

*Examples provided here are drawn from nine study areas involved in the Department of Health funded project *Optimising the use of NHS data in local violence prevention and measuring its impact on violence* (Box 3), for which this guide has been produced. More detailed examples are available from the longer version of this guide[1].

3: Setting up data sharing systems

The use of health data in local violence prevention activity is facilitated by the regular sharing of **anonymised** data between health services and local partners. Detailed research into how A&E data sharing processes are run in some local authority areas[6-10] has identified a number of factors helpful in achieving success. These include:

- A dedicated post/staff member within the A&E to champion health data sharing, co-ordinate data collection and keep health data sharing on the agenda;
- Building strong relationships between the A&E and local partners;
- The existence of a data sharing partner/agency, which can facilitate multi-agency communication and increase capacity for health data to be accessed by local partners easily and in a timely manner;
- Regular feedback to A&E staff about how local partners are using the data and the impact that data sharing has on the community;
- Fostering positive attitudes towards the collection and use of A&E data, both within the A&E and amongst local partners; and,
- Training of A&E staff regarding any additional data collection (e.g. Information Standard fields, see Box 1).

A step-by-step guide to developing data sharing systems is presented below and in Figure 1.

Step 1. Hold initial meetings between health services and local partners to: Develop positive relationships between all parties; agree common objectives; promote the value of collecting and/or sharing health data; agree the purpose and benefits of sharing data; and address any concerns around protecting data confidentiality. Also, consider including local Caldicott Guardians, and/or health service IT and information governance staff who will be able to advise on how best to collect and/or share data.

> **Tip:** Ambulance data are collected at a service level and will span more than one LA. Discuss potential plans for using ambulance data with local partners in neighbouring LAs and approach the ambulance service together. Alternatively, if a neighbouring LA is already using ambulance service data, adapt this existing model to request similar information rather than developing a separate data request.

Step 2: Agree on what data will be collected and how the data will be shared:

- **Which data fields will be required, and for what purpose?** This could include data fields already collected by health services, and any additional fields that may be useful to collect (e.g. for A&E data, the collection of detailed assault data by receptionists during the booking in process see Box 1). For additional fields, consideration should be given to when and how the information is collected, by whom and how it is recorded.
- **What format should the data be shared in?** Anonymous, individual-level data are useful for detailed analyses and application of findings. However, aggregated data may be preferred. In some areas, anonymous, individual-level data are shared with one partner, who aggregates and shares the data with other local partners.
- **Who will be responsible for anonymising the data before they are shared?** This could be health services. However, in some areas, partially anonymous A&E data (e.g. with patient names and

addresses removed) are shared with one partner. This partner then fully anonymises the data (converts date of birth into an age group) and shares it further.

- **What frequency are the data needed/able to be extracted and shared?** The more frequently the data are shared, the more use they can be in addressing violent behaviour. A monthly timeframe is recommended by the CEM when sharing A&E data[2]. However, some police forces have found that fortnightly data can inform operational activity more usefully than monthly data.
- **What process will be used to share the data?** A method of securely transferring the data to local partners needs to be identified. This could include online drop boxes, secure e-mail connections (e.g. a Government Connect Secure Extranet [GCSX] account) or software such as SharePoint[i].

> **Tip:** It is important to consider how any additional data needed will be collected (e.g. in free text fields or drop down menus; as optional or mandatory questions) to ensure that data are accurate and useful. Drop down menus may make it easier to collect and analyse data but may restrict the amount of information that can be gained. Mandatory questions will yield higher completion rates than optional fields.

Step 3: Consider how data sharing will be monitored and evaluated. Discussions should focus on what a successful data sharing process would look like and how this could be monitored. This could include some of the six factors identified at the beginning of this section such as regular training of A&E staff and regular feedback to A&E staff on data use. Targets could also be set around data collection quality and completeness.

Step 4: Develop a data sharing agreement between health services and local partners. It is best practice to set up data sharing agreements between health services and local partners. This will govern how the data should be shared, used and protected. Where aggregated data are being shared, a data sharing agreement may not be needed.[4] However, it may still be useful in ensuring that data are stored and published in a manner that protects the individuals they relate to.

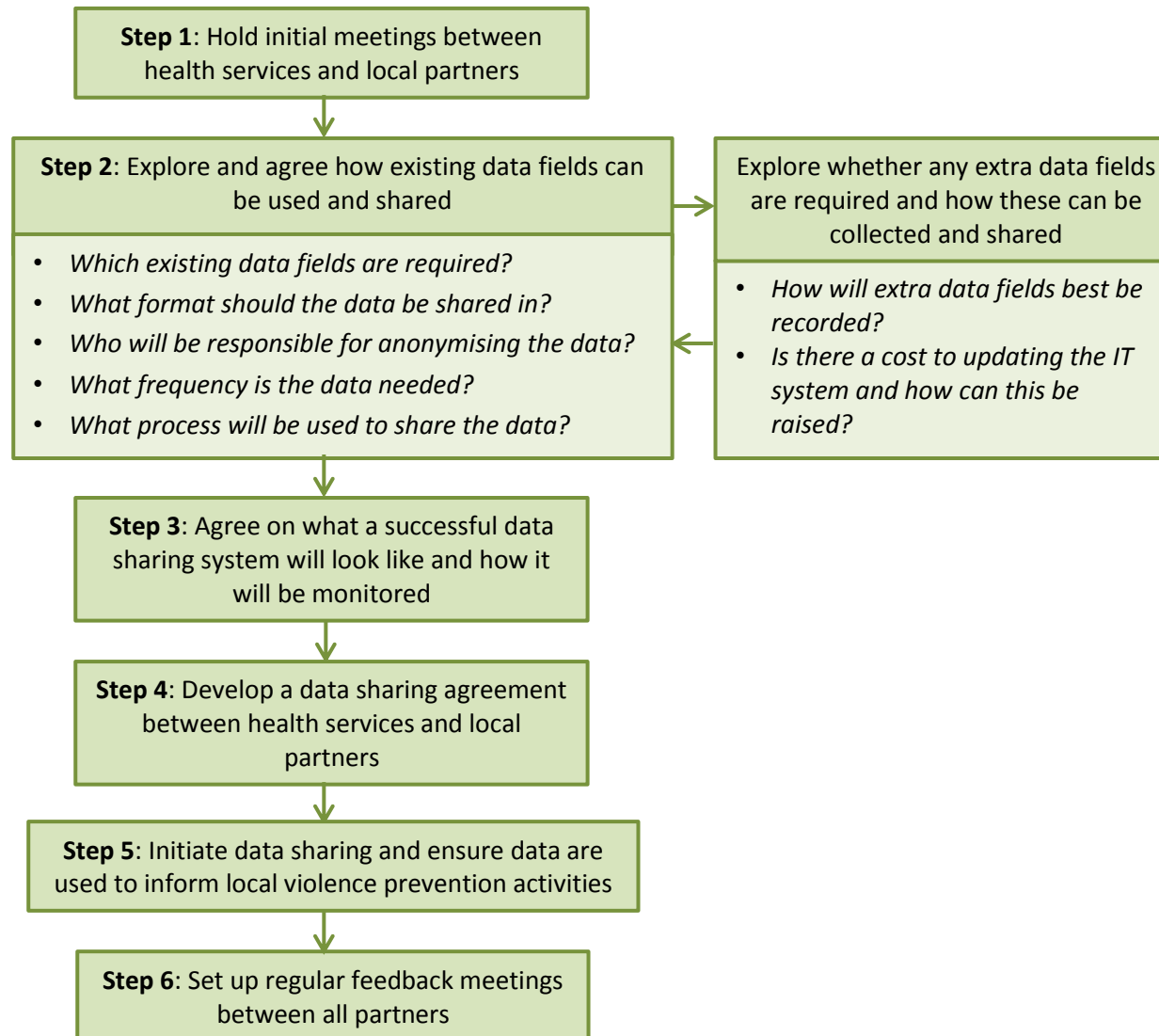**Step 5: Ensure health data that are shared are used by local partners.** Partners should identify how the health data they access can best be used to inform violence prevention activity and begin using the data in routine practice. It is important to record how the data are being used and to feed this back to health staff (see Step 6). Ideally, any prevention activities should be evaluated (using health and other data) to increase understanding of what works/does not work in reducing local violence.

Step 6: Set up regular meetings between local partners (e.g. every quarter). It is important for partners to meet on a regular basis to: maintain connections; introduce role replacements into the partnerships; identify and overcome any issues with data collection and/or sharing; and update health staff on how the data are being used by local partners (including any outcomes in terms of violence reduction). This will help health staff understand the value of collecting assault information and maintain motivation for data collection.

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[i] www.discoversharepoint.com/#store_sync_and_share_your_content

Figure 1: A step-by-step guide to setting up data sharing systems for sharing health data

Step 1: Hold initial meetings between health services and local partners

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Step 2: Explore and agree how existing data fields can be used and shared

- *Which existing data fields are required?*
- *What format should the data be shared in?*
- *Who will be responsible for anonymising the data?*
- *What frequency is the data needed?*
- *What process will be used to share the data?*

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Explore whether any extra data fields are required and how these can be collected and shared

- *How will extra data fields best be recorded?*
- *Is there a cost to updating the IT system and how can this be raised?*

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Step 3: Agree on what a successful data sharing system will look like and how it will be monitored

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Step 4: Develop a data sharing agreement between health services and local partners

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Step 5: Initiate data sharing and ensure data are used to inform local violence prevention activities

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Step 6: Set up regular feedback meetings between all partners

4: Managing and handling health data

There is a legal responsibility to safeguard health data. The main piece of legislation governing the collection, use and storage of personal data is the Data Protection Act, 1998. Although fully anonymised data are not regarded as personal data, consideration should still be given to the rules of the Act, which specify that data should be:

- Processed fairly and lawfully;
- Obtained only for specified and lawful purposes;
- Adequate, relevant and not excessive in relation to the specified purposes;
- Kept only for as long as necessary;
- Processed in accordance with an individual's data protection rights;
- Protected against unauthorised or unlawful use, accidental loss or damage; and,
- Not transferred outside the UK unless there is an adequate level of protection.

The Common Law Duty of Confidentiality is also important to consider when sharing personal data. This requires NHS staff to ensure that there is a legal basis for sharing confidential personal data. In most cases this will mean that explicit patient consent is required. Confidentiality can also be overridden or set aside by legislation or by a court order. In some cases confidentiality can be breached in the public interest (e.g. to support the investigation of a serious crime).

There is a range of other legislation relevant to data sharing, which set out the power and responsibilities of public authorities in sharing data. This includes:

- Crime and Disorder Act 1998, Section 115;
- The Human Rights Act 1998;
- The Local Government Act 2000;
- The Freedom of Information Act 2000; and,
- Crime and Disorder Regulations 2007.

Issues that need to be considered to ensure data protection include:

- *Secure transfer of data:* Data should be transferred between health services and specified local partners securely using a method that protects against unauthorised access and use.
- *Ensuring data anonymity:* The data requested from health services should be anonymised as fully as possible. This will mean for instance sharing patients' ages or age groups rather than their dates of birth, their partial postcode or other geographical area identifier (e.g. lower super output area [LSOA]) rather than full postcode, and a unique identifier rather than NHS number. NHS organisations need to be sure that the data they disclose cannot be used – either directly or indirectly - to identify individuals.
- *Protecting data confidentiality:* Data should be stored on secure computer networks, password protected and only accessible by specified individuals. Any hard copies of data should be housed in a locked cabinet in an alarmed office. Data must not be stored outside the specified agencies, nor within online storage.

- *Publishing data:* Any intentions to publish shared health data need to ensure patient anonymity. This means that data should only be published in aggregated form, with any numbers lower than five being suppressed (e.g. "<5").

It is best practice to develop a data sharing agreement between health services and local partners. This will clearly specify how data will be provided to local partners (e.g. the format and method of transfer) and how the data will be securely stored and used. In some cases (e.g. where health services are sharing aggregated data only and there is therefore no risk of patient identification), data sharing agreements are not always deemed necessary[2]. However, here a data sharing agreement can still be useful in ensuring that data are stored and published in a manner that protects the individuals it relates to.

Box 3: About this guide

This guide has been produced as part of the project: *Optimising the use of NHS data in local violence prevention and measuring its impact on violence.* This is a three year project led by the Centre for Public Health, Liverpool John Moores University, and funded by the Department of Health. The project aims to identify the optimum use of NHS data in local violence prevention, support local partners in its use, and develop evidence around the impacts of data sharing on violence. The project focuses on non-identifiable data including A&E attendances, hospital admissions and ambulance call-outs.

A longer version of this guide is also available that includes examples of data use, case studies of successful data sharing systems and examples of data analysis. For more information, visit the following website: *www.cph.org.uk/optimising-the-use-of-nhs-intelligence-in-local-violence-prevention-and-measuring-its-impact-on-violence*

5. References

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Disclaimer

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