

Preventing serious violence using ED data

Your hospital. Your community. The part you play

The Cardiff Model for Violence Prevention

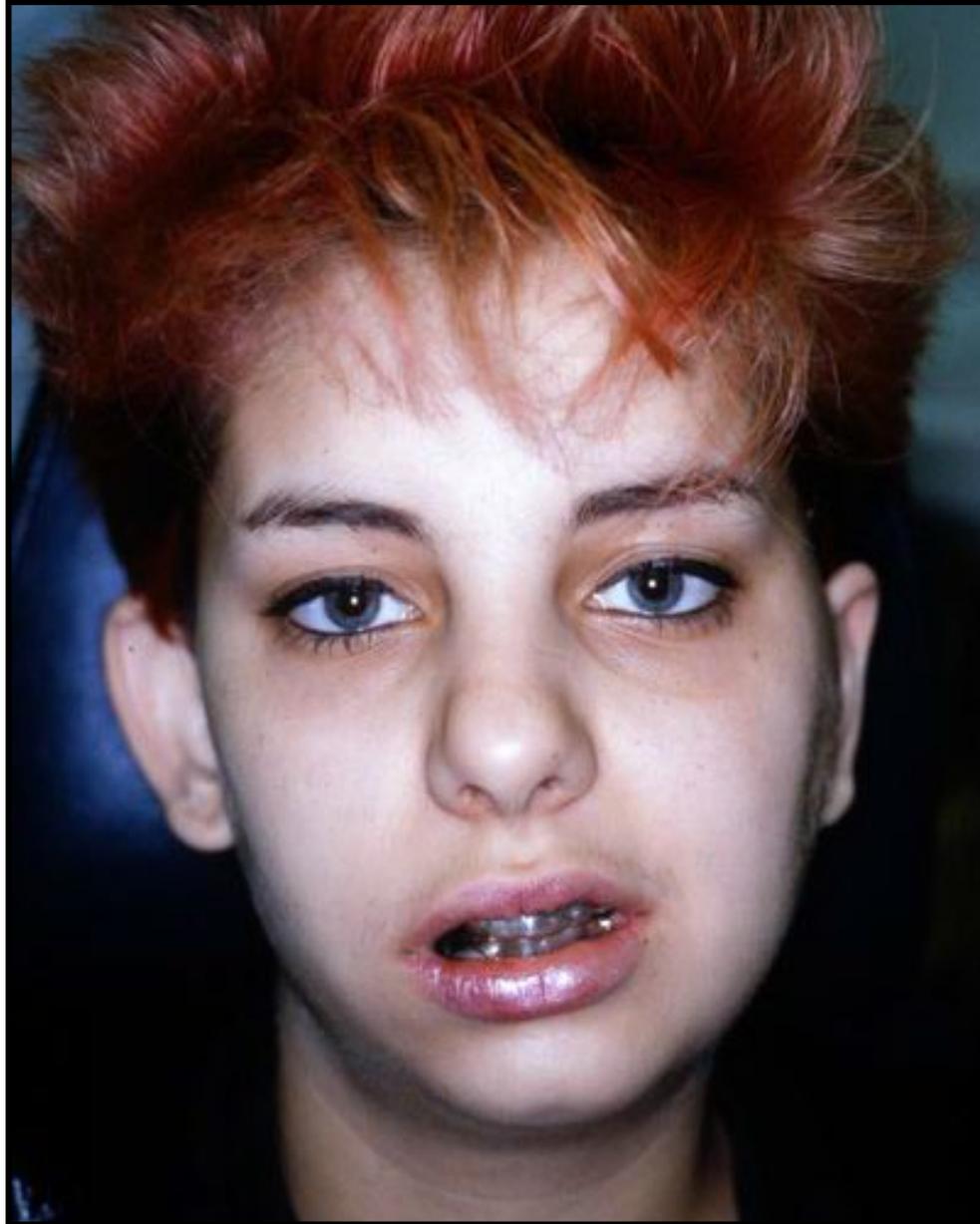
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@violencesociety



**Violence is disfiguring,
frightening, blights
cities, disrupts health
services and costs a
fortune**



**40% of people
injured in violence
develop Post
Traumatic Stress
Disorder (PTSD)**

SERIOUS VIOLENCE IS OFTEN NOT REPORTED TO POLICE

- **At least 50% of UK violence which results in emergency hospital treatment (serious violence) is not known to police**
- **Police knowledge of violence depends on injured people reporting violence. But many don't report because of:**
 - **Fear of reprisals**
 - **Reluctance to have own conduct scrutinised**
 - **Inability to identify assailants**

Shepherd JP et al, Medicine Science Law 1989; Clarkson C et al, Criminal Law Review 1994; Sutherland I et al, Injury Prevention 2002; Crime Survey for England and Wales 2010-2019; Sumner S et al, JAMA 2018

- **76% of violence in Swansea, Cardiff and Bristol which results in ED treatment is not known to police.** *Shepherd et al. Medicine, Science, Law 1989; Sutherland et al. Injury Prevention 2002*
- **77% of violence in Odense Municipality (Denmark) resulting in ED treatment not known to police.** *Faergemann et al. J Forensic Legal Med 2007*
- **89% of violence in Georgia USA, resulting in ED treatment not known to police.** *Wu et al. JAMA Int Med 2019*
- **13% of shootings resulting in ED treatment in Atlanta not known to police.** *Kellerman et al. Arch Emerg Med 2003*

A universal issue in violence measurement and prevention

Implications: Measure Violence

**Data from Emergency Departments
can be used to**

Prevent Violence (the Cardiff Model)

KEY FEATURES OF THE CARDIFF MODEL

- Continuous *data recording* by ED receptionists – violence date, time, precise location (free text field), weapon, number of assailants, relationship with assailants
- *Data anonymised and shared by NHS Trusts (Health Boards in Wales)*
- *Data combined with police data and summarised*
- *Data translated into practical prevention* by city/local authority Violence Prevention Boards – part of Community Safety Partnerships

Cardiff Model (ISTV) data, University Hospital of Wales

Week beginning 10th January 2022

Assault Site Text	Visit Date	Assault Type Description	Assault Assailant Type Description	Assault Assailants Description
CATHAYS HIGH SCHOOL	10/01/2022	Feet	Acquaintance/Friend	x2
EASTERN HIGH SCHOOL	10/01/2022	Fist	Acquaintance/Friend	x1
Own Home -	10/01/2022	Blunt Object	Partner	x1
Own Home -	10/01/2022	Blunt Object	Acquaintance/Friend	x1
CARDIFF CITY CENTRE	10/01/2022	Sharp Object	Stranger	Unknown
ST JOHN STREET	10/01/2022	Fist	Stranger	x2
NR TESCO	10/01/2022			
DUMBALLS ROAD	11/01/2022	Unknown	Stranger	Unknown
ON AMBULANCE-	13/01/2022	Pushed	Work Client/Customer	x1
CARDIFF TOWN	13/01/2022	Body Part	Stranger	x1
OUTSIDE SCHOOL-WILLOWS HIGH	13/01/2022	Fist	Stranger	x1
Street -	13/01/2022	Fist	Acquaintance/Friend	x1
KNAP SKATE PARK	14/01/2022	Fist	Stranger	x3 or more
CLOSE TO CATHAYS HIGH SCHOOL	14/01/2022	Fist	Stranger	x3 or more
SPLOTT	15/01/2022	Fist	Stranger	x3 or more
CROSS INN	15/01/2022			
HOLLYBUSH	16/01/2022	Feet	Acquaintance/Friend	x3 or more
HOLLYBUSH PUB	16/01/2022	Fist	Stranger	x2
AT SOMEONES HOME-IN HOUSE ELY	16/01/2022	Fist	Stranger	x1
CAERPHILLY ROAD	16/01/2022	Fist	Work Client/Customer	x1
Street -	16/01/2022	Fist	Stranger	Unknown



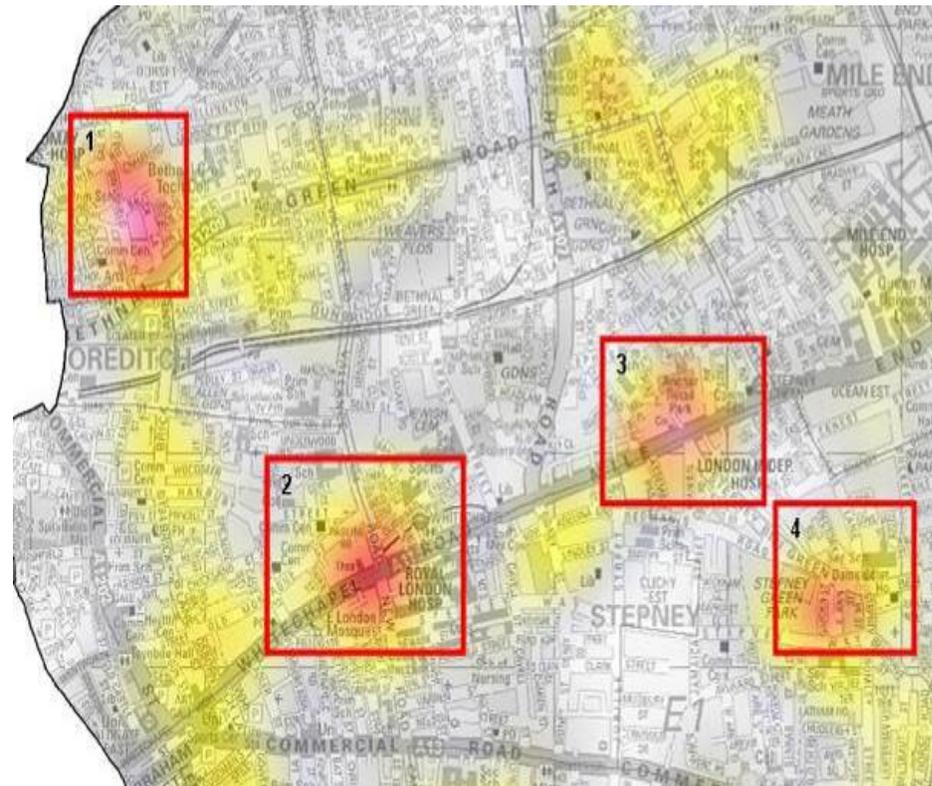
The Cardiff Model in London

Data reveal more violence hotspots

Metropolitan Police Data

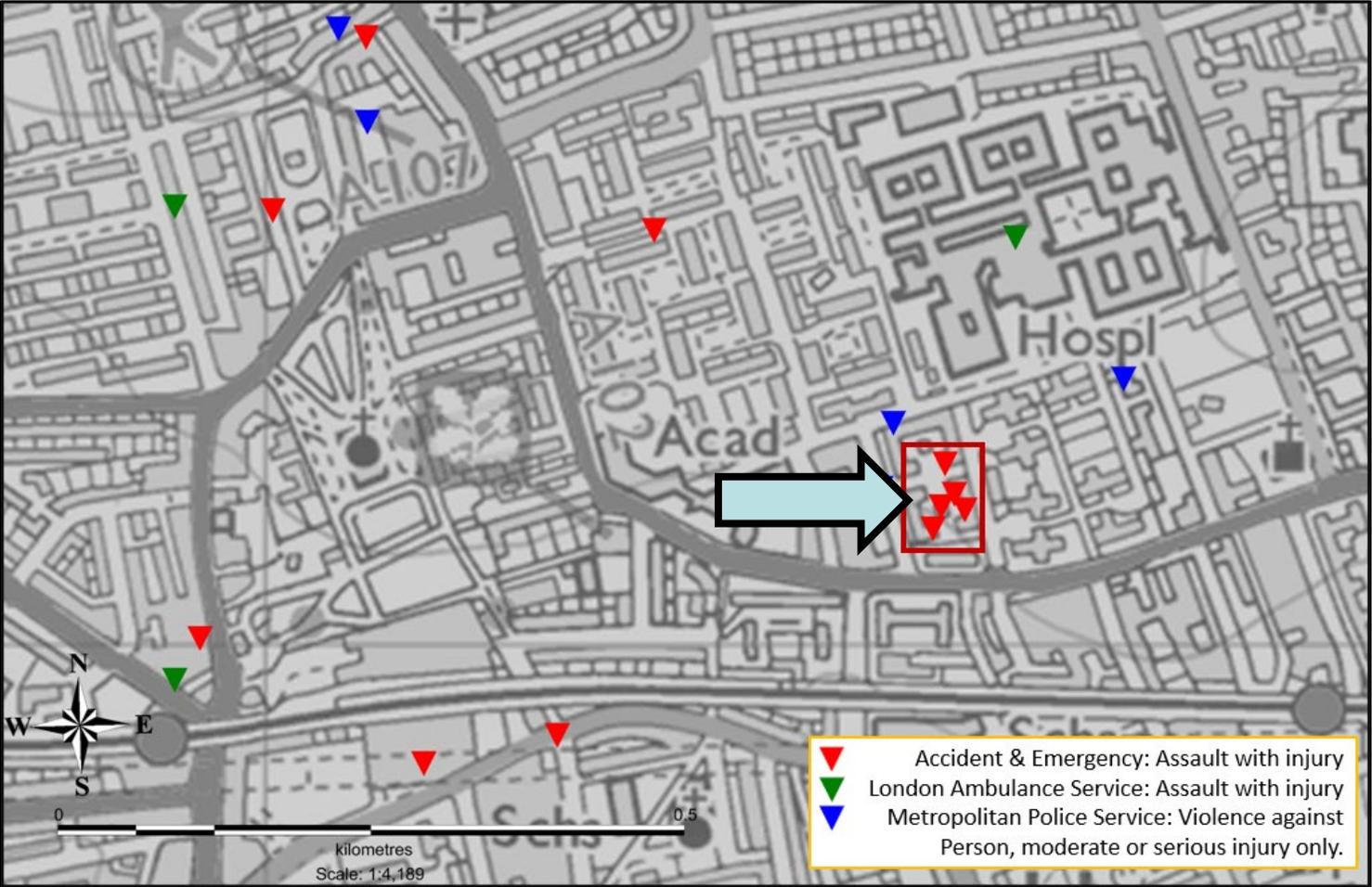


Emergency Department Data



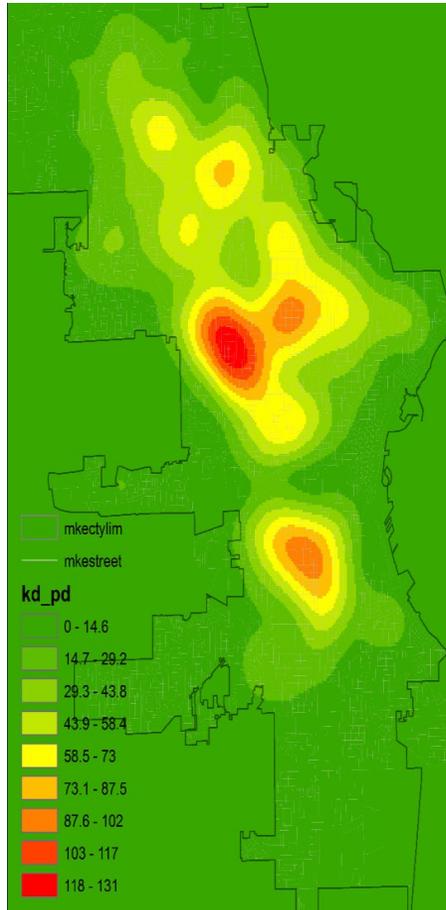
Source: *Shepherd et al, Police Professional 2016*

Data reveal drug markets and gang violence locations invisible to police

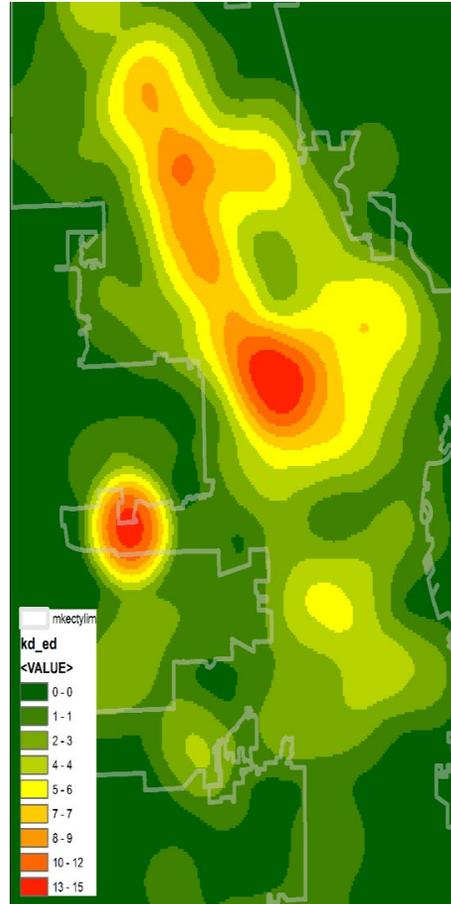


The Cardiff Model in the United States: Milwaukee

Police data



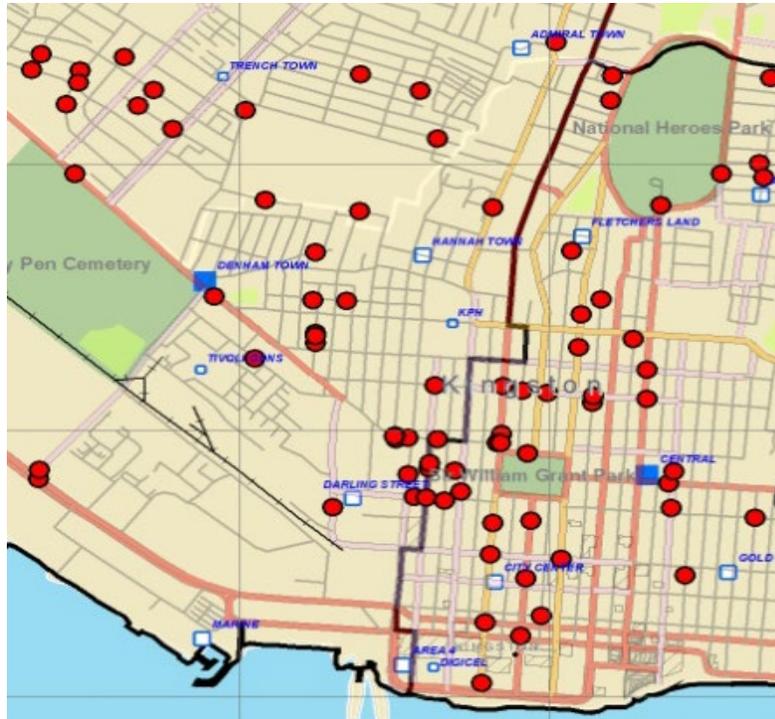
Children's Hospital data



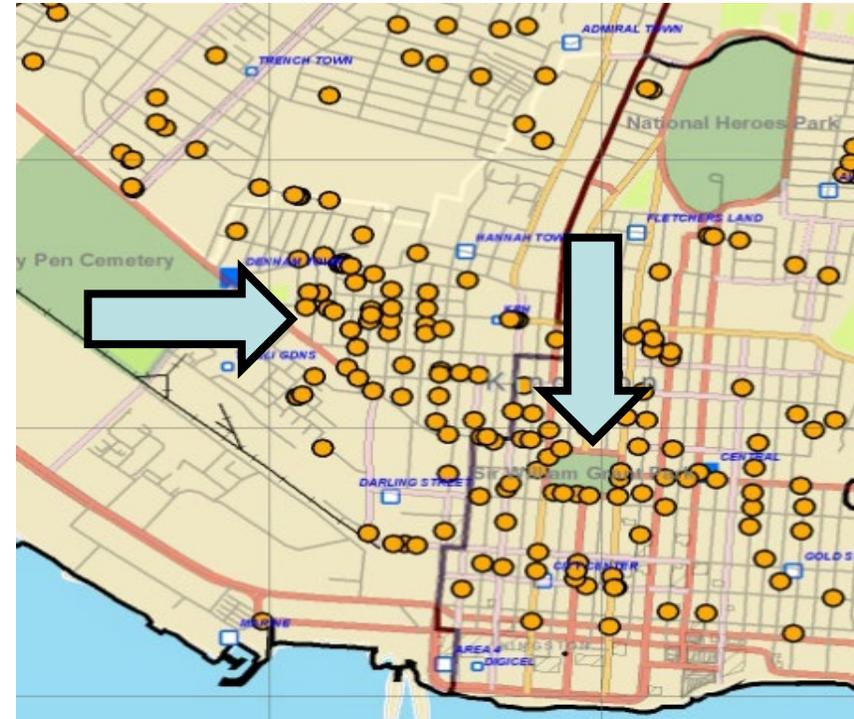
Source: Hernandez-Meier et al, Medical College of Wisconsin

The Cardiff Model in Kingston, Jamaica

Police data



ED data



Source: Lyew-Ayee, *Geoinformatics Institute, University of the West Indies*

Cardiff's Violence Prevention Board



Violence hotspot identification and action



Hotspot: Retail outlets
– ex Tiger Bay area
Partnership action:
CCTV camera installed



Hotspot: Castle grounds,
Cardiff city centre
Partnership action:
Shrubbery cut down to
increase natural surveillance

EFFECTIVE VIOLENCE PREVENTION

Targeted policing and CCTV

Disrupting drug supply and gang activity

Alcohol and entertainment licensing

Domestic violence interventions

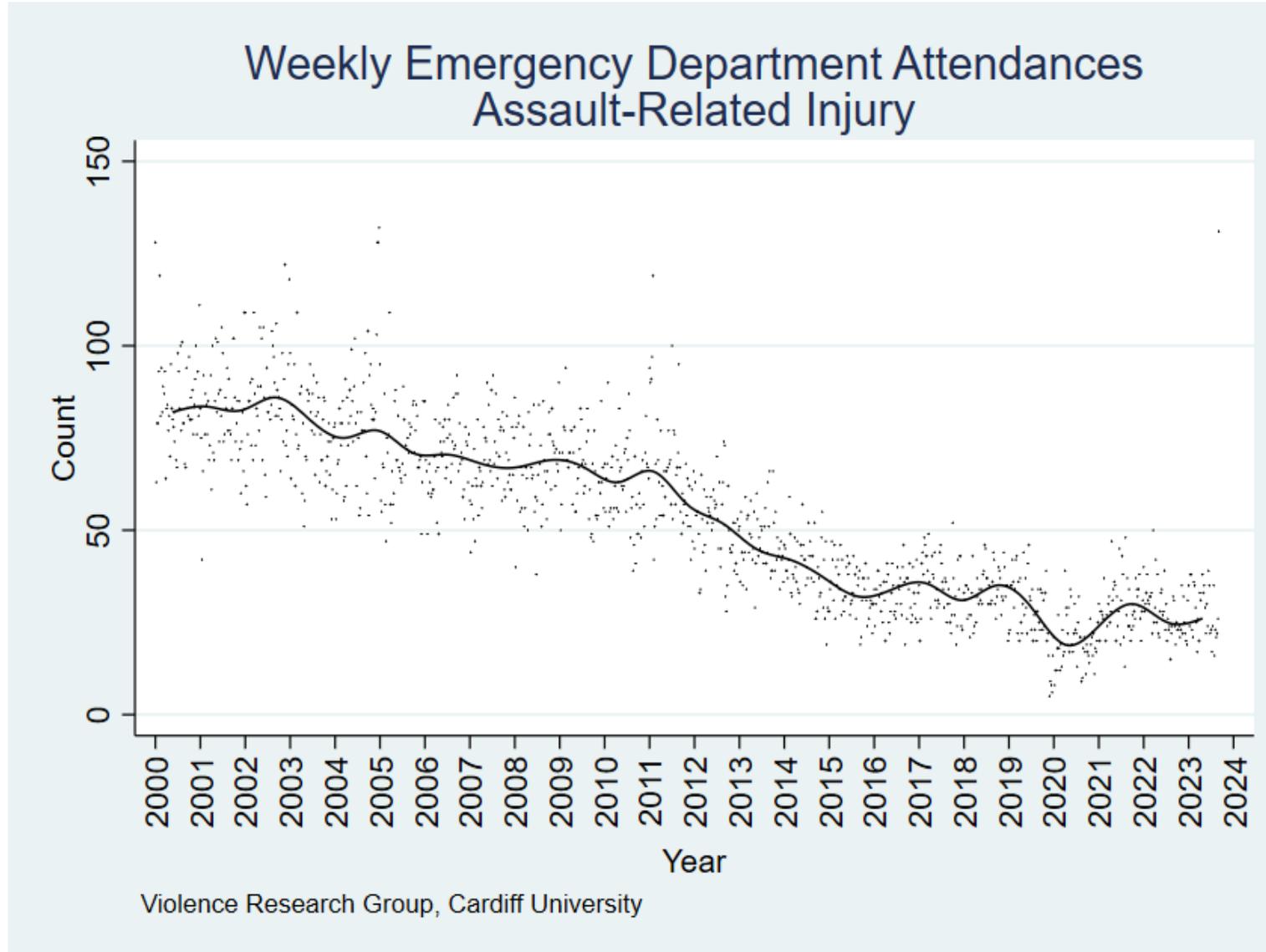
Situational interventions:

- Park redesign
- School based child safeguarding
- Pedestrianisation of entertainment streets

**For guidance refer to the Youth Endowment Fund
and Centre for Crime Reduction toolkits**

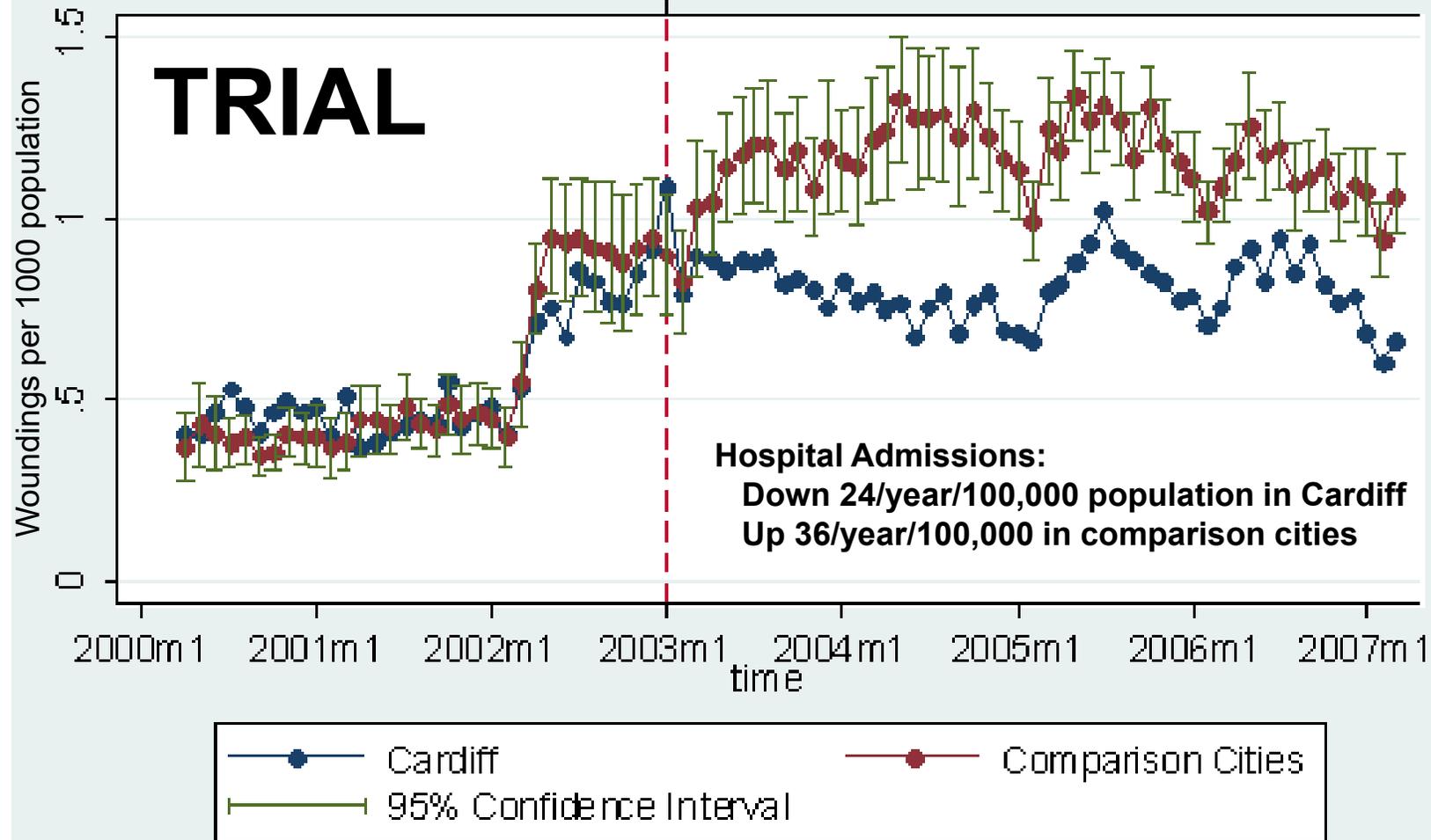
Is this approach effective?

Violence related Emergency Department attendances: Cardiff



Wounding Rates, by Month

CVPP Implemented



Source: Florence et al BMJ 2011

Cardiff Model effectiveness: Systematic review and Meta-analysis of evidence

A systematic review led by Deakin University concluded that **“All studies attempting to measure intervention effectiveness reported substantial reductions of assaults and ED attendances post-intervention, with one reporting no change”**.

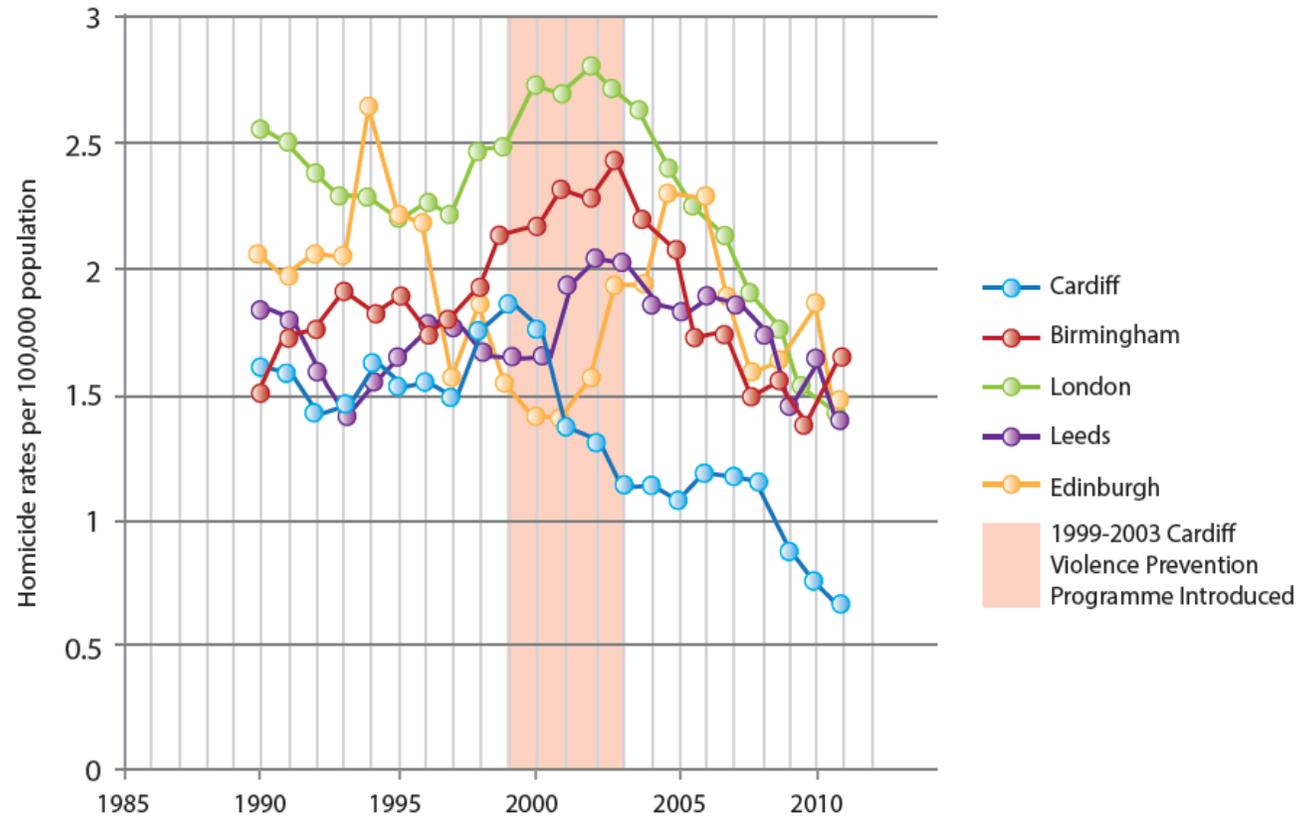
Source: Droste et al (2014). Emergency Medicine Australasia. doi: 10.1111/1742-6723.12247

A meta-analysis led by the University of Cape Town concluded that: **“...the introduction of (the Cardiff Model) showed significant results in reducing assault (Incidence rate ratio=0.80; 95% CI 0.71 to 0.91).”**

Source: Jabar et al (2019). BMJ Open. doi:10.1136/bmjopen-2018-027977

Homicide rates

Homicide rates in major UK cities



Source: Eisner 2015

Costs and benefits

- Annual cost of Intervention: £5k
- Annual cost of woundings avoided (benefits): £789k
- Cost/Benefit Ratio - total costs avoided = 1:82
- Cost/Benefit Ratio - criminal justice costs avoided = 1:19

Source: Florence et al. Injury Prevention 2014

2019 Home Office impact assessment:

- **Cost savings for each local authority area: £2.7m per annum**
- **Benefits: “If implemented in just 5% of LA areas cost savings estimated to be £858 million over 10 years.”**

Source: UK Home Office, Introducing Public Health Measures IA 2019 (IA No: HO0345)



The College of Emergency Medicine

Patron: HRH The Princess Royal

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CLINICAL EFFECTIVENESS COMMITTEE GUIDELINE FOR INFORMATION SHARING TO REDUCE COMMUNITY VIOLENCE

Summary of recommendations

1. Emergency departments should routinely collect, electronically wherever possible, data about assault victims at registration. Receptionists should collect the **date and time** of the assault, the **location** (name of pub, club, school, street etc) of the assault in free text and which **weapon** (fist, foot and so on was used.)
2. There is no need for a formal information sharing agreements between the Emergency department and the CDRP.
3. This data should be shared with the local CDRP and crime analysts in an anonymous and aggregate form.
4. Senior emergency physicians should be supported to participate in CDRP meetings.

HOW THE MODEL WORKS

- Earlier and more frequent police intervention –
The public health benefits of precision policing
- Identification of weapon trends – **informs weapon control**
- Identification of park, pedestrian and school violence locations – **informs local authority actions**
- Identification in Emergency Departments and support of people injured in domestic violence – **prevents repeat victimisation**

Steps in UK implementation

- **1998: Crime and Disorder Act creates Community Safety Partnerships**
- **2014: Cardiff Model (ISTV) data set published by NHS Digital – ISB1594**
- **2017: Data items included in the Emergency Care Data Set**
- **2022: Statutory Serious Violence Duty for specific authorities to collaborate to prevent violence**
- **2023: Free text field introduced for recording precise violence location**
- **2024: Introduction of Standard Operating Procedure for data recording in EDs**

Uptake is still not universal

International implementation of the Cardiff Model

WORLD HEALTH ORGANISATION

**Implementation of the recommendations of the
World Report on Violence and Health**
e.g. In the UK, Netherlands, United States (CDC),
Australia, Colombia, Jamaica, South Africa

Cardiff Network USA



Cardiff Model Essentials

- **Cardiff Model (ISTV) data items** – on violence date, time, precise location (free text field), weapon type, assailant numbers and relationship between the injured person and their assailant(s) - embedded in ED software.
- **ED receptionists and/or triage nurses** able to ask people injured in violence for this information and record it routinely and electronically.
- **Hospital IT unit** able to anonymise and share these data with authorities responsible for discharging the statutory duty to collaborate to prevent violence.
- **Analyst(s)** associated with the local Safety Partnership able to combine these data with police data and summarise and map them for the local violence prevention board.
- **City/local authority area violence prevention board** comprising police, local government, health (including a lead Emergency Medicine consultant) and education executives which meets at least once a quarter to choose and implement effective violence prevention interventions.

Cardiff Model resources

- [The Cardiff Model Toolkit |Violence Prevention|Injury Centre|CDC](#)
- [The Cardiff Model – Security, Crime and Intelligence Innovation Institute - Cardiff ...](#)
- [Information Sharing to Tackle Violence in knife crime ... - London.gov.uk](#)
- <https://www.cardiff.ac.uk/documents/2665796-the-cardiff-model-for-violence-prevention>

