GUIDANCE FOR COMMUNITY VIOLENCE PREVENTION

TOOLKIT: U.S. TRANSLATION OF THE CARDIFF MODEL

The 2024 ***Toolkit: U.S. Translation of the Cardiff Model*** updates and expands on the 2018 ***Cardiff Model Toolkit***. It is one among a suite of violence prevention resources developed by the Division of Violence Prevention within the National Center for Injury Prevention and Control to help communities make use of the best available evidence. We extend our gratitude to all the authors, contributors, partners, and reviewers for their helpful feedback and support in the development of this resource.

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THE CARDIFF MODEL TOOLKIT: AN INTRODUCTION

Approximately 58% of violent crime in the United States is not reported to law enforcement, according to the U.S. Department of Justice. That means cities and communities lack a complete understanding of the locations, frequency, and types of violence, which limits the ability to develop and deliver successful solutions.

The Cardiff Model for Violence Prevention ("the Cardiff Model") is a data-driven cross-sectoral partnership that collects and shares community violence data to develop location-specific violence prevention strategies and approaches. It provides a way for communities to gain a clearer picture about where violence is occurring by combining and mapping both hospital and police data on violence.

More than just a method to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups (including but not limited to businesses, schools, and policymakers), and others interested in violence prevention to work together and implement collaborative violence prevention strategies.

The Cardiff Model has a strong evidence base in the U.K. and is recognized as one of the World Health Organization's INSPIRE strategies for preventing violence against children. It represents a promising approach to preventing violence in the U.S. We encourage you to use these materials to create a broad partnership to prevent violence in your community.

Sincerely,

CDC's National Center for Injury Prevention and Control

WHAT IS THE CARDIFF MODEL?

WHAT IS THE CARDIFF MODEL FOR VIOLENCE PREVENTION?

The Cardiff Model is a multi-agency approach to violence prevention that relies on the strategic use of information from health and law enforcement organizations to improve public safety and community violence prevention programs.[1] The basis of the Cardiff Model is information sharing. In healthcare settings, de-identified violence-related injury data, including location, time, date, and mechanism of injury, are collected. These data can be combined with data from law enforcement to help fill in the gaps and provide a better picture for communities to understand where violence is occurring. No personal identifying information (i.e., name, date of birth, social security number) is collected, shared, or used. The community violence maps can be used to identify the specific locations, time of day, day of the week, where violence occurs in public spaces such as bars, street corners, or subway stations.

FUNDAMENTALS OF THE CARDIFF MODEL

The Cardiff Model relies on sustained partnerships between healthcare, law enforcement, public health agencies, other government agencies, and community organizations. Partnerships use local data to lead and make changes in the places where people work and live, and encourage business owners, local government, communities, and residents to prevent violence by using evidence-based solutions. Violence is influenced by factors at all levels of the social-ecological model, which is a model used to better understand violence by showing how individual, relationship, community, and societal factors influence one another. Prevention efforts require action across multiple levels, and the Cardiff Model informs and complements those efforts. For more information on the social-ecological model, the framework CDC uses to better understand and prevent violence, visit CDC's About Violence Prevention webpage.

WHY USE THE CARDIFF MODEL FOR VIOLENCE PREVENTION?

The Cardiff Model for Violence Prevention is:

- evidence-based
- cost effective
- being implemented in countries across the globe
- used to inform communities about where violence is occurring

ORIGINS OF THE CARDIFF MODEL

The Cardiff Model was created by Dr. Jonathan Shepherd, a surgeon and professor at Cardiff University in Wales, United Kingdom. Dr. Shepherd frequently treated people in his hospital's emergency department who had been injured by violence. Through his research, he discovered that only a fraction of the violent incidents that caused these injuries were reported to law enforcement.[2]

In 1996, Dr. Shepherd gathered healthcare providers, law enforcement leadership, and other community stakeholders to discuss the concept of data sharing and the development of violence prevention strategies and approaches. In 1998, with legislation which created community safety partnerships throughout the country, the Cardiff Model became a primary approach to violence prevention across the United Kingdom. It has been implemented in several countries across the globe, including Jamaica and Australia.

EVIDENCE OF THE CARDIFF MODEL'S EFFECTIVENESS

Since its development in 1996, the Cardiff Model has shown that sharing anonymous data describing the location of violence, weapon use, assailants, and time of violence can allow communities to strengthen their strategies to prevent violence.[3] CDC collaborated with Dr. Shepherd to conduct a multi-year evaluation that compared violence outcomes in Cardiff, Wales to the experience in 14 similar cities in the UK. The results indicated a 32% reduction in police-recorded injuries (comparable to aggravated assaults in the U.S.) and a 42% reduction in hospital admissions for violence-related injuries. The Cardiff Model saved over $19 in criminal justice costs and nearly $15 in health system costs for every $1 spent from 2003 to 2007.[4]

32% REDUCTION IN POLICE-RECORDED INJURIES

42% REDUCTION IN HOSPITAL ADMISSIONS FOR VIOLENCE-RELATED INJURIES

THE NEED FOR THE CARDIFF MODEL FOR VIOLENCE PREVENTION

Community violence happens between unrelated individuals, who may or may not know each other, generally outside of the home. Examples include assaults or fights among groups and shootings in public places, such as schools and on the streets. The negative impacts of community violence are long-lasting. Preventing community violence can:

- Save lives
- Create safer, healthier communities
- Help build stable, thriving communities

1. Shepherd (2001). Annals of Emergency Medicine, 38(4), 430-437.
2. Shepherd (2000). BMJ, 321(7275): 1481-1482.
3. Florence et al. (2011). British Medical Journal, 342, d3313.
4. Florence et al. (2014). Injury Prevention, 20(2), 108-114.

THE CARDIFF MODEL ESSENTIAL ELEMENTS

While the U.S.-based Cardiff Model is tailored to the distinctive characteristics and structures of each community,* there are several essential elements that are commonly found in communities implementing the Cardiff Model. These elements are the key "what," "how," and "who" that likely lead to desired outcomes. For example, a community implementing the Cardiff Model will need sustained multisectoral partnerships to help collect data in order to identify where violence is happening, and then share the data to inform evidence-based injury and violence prevention policies and interventions. Essential elements can help guide decisions about how to adapt the Cardiff Model to fit your community needs and local context, though they are not intended to be prescriptive.

To estimate the essential elements of the U.S.-based Cardiff Model, a qualitative thematic analysis was conducted in 2023 from 23 semi-structured interviews with key partners in communities at various stages of implementing the Cardiff Model. The full list of proposed essential elements is in the table on the next page.

Essential elements include WHAT should be delivered, HOW it should be delivered, and characteristics of WHO should be involved in an approach. Essential elements are not discrete activities or components of an approach; rather, they are characteristics of approach activities and components that define how an approach is intended to influence risk and protective factors and violence outcomes. For more information about essential elements, visit Veto Violence "Select, Adapt, Evaluate"

PROPOSED ESSENTIAL ELEMENTS OF U.S.-BASED CARDIFF MODEL

WHAT?

WHAT IS IT?

- A public health framework for community violence prevention
- A data-driven model that generates unique surveillance data with specific data elements
- A collaborative data to action process that informs tailored, community-level violence prevention strategies and approaches*, including place-based approaches
- A site-specific process that is adapted to each city/community the model is implemented in

HOW?

HOW DOES IT WORK?

- The Cardiff Model framework helps build relationships between institutions (i.e., hospitals, government, law enforcement) and community throughout the process. Meaningful engagement and collaboration builds trust, buy-in, and positive relationships with the community
- Data generates buy-in from funders, partners, and organizational and political decision-makers
- Data collection, analysis, and geospatial mapping are accomplished through a collaborative, multi-sectoral approach
- An honest data broker makes data accessible (e.g., local and/or state health department)
- Cardiff Model data are used to identify locations within the community that require a violence prevention intervention, and to inform the selection of the most relevant prevention strategies and approaches
- Cardiff Model data are continuously shared for community use to collectively impact violence

WHO?

WHO NEEDS TO BE INVOLVED?

- Partners and champions from across the community and sectors (e.g., community members and leaders; government; healthcare/hospitals; policymakers; law enforcement agencies; academic institutions; funders; faith-based organizations; community organizations). This is not only essential for implementation, but also for sustainability and funding.

* In the context of CDC's Prevention Resources for Action, a **strategy** lays out the direction or actions to achieve the goal of prevention violence; an **approach** includes the specific ways to advance the strategy, which can be accomplished through programs, policies, or practices with the best available evidence.

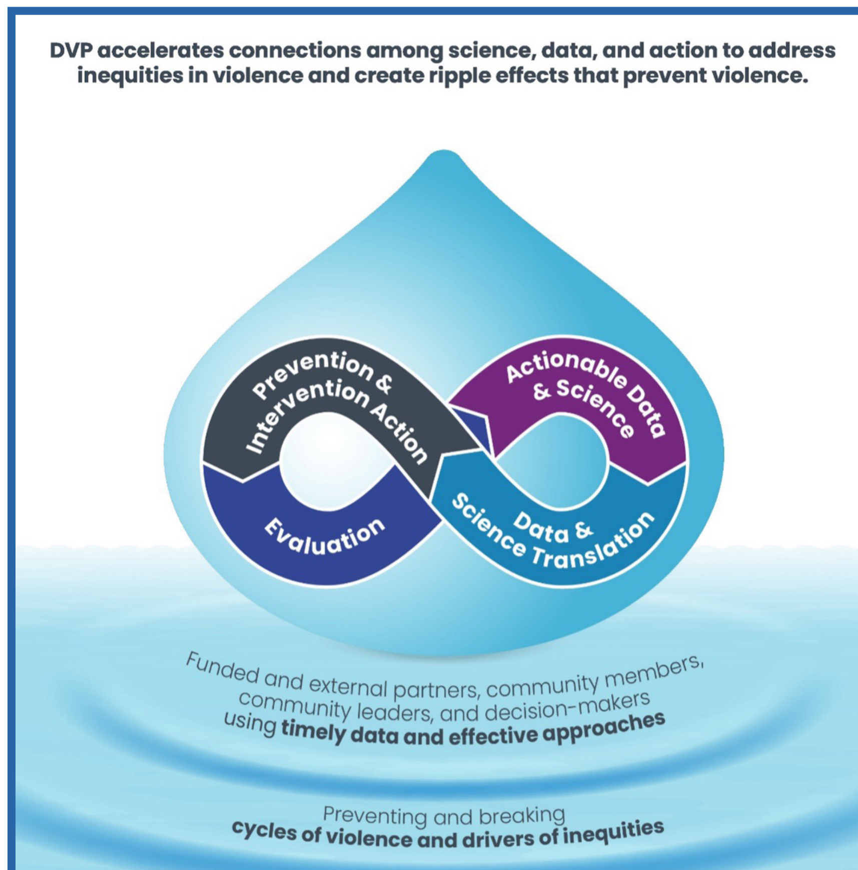
WHAT IS AN HONEST DATA BROKER?

An honest data broker is an organization or entity that agrees to act as a data custodian to store data. In the case of the Cardiff Model, the honest data broker is typically a state public health agency which stores data from hospitals and law enforcement agencies. The honest data broker then geocodes the data and shares maps with the de-identified data with the community safety partnership (CSP) to inform violence prevention strategies.

SCIENCE-AND-DATA-TO-ACTION

Science and data can be used to help inform public health action. A science-and-data-to-action approach involves collecting high quality, comprehensive data on violence and injuries stemming from violent incidents. This approach prioritizes science and data that enable timely and effective decision making to help communities increase the impact of their violence prevention efforts. Applying a science-and-data-to-action framework that supports sharing timely, accurate, and local violence data with community partners can inform strategies to prevent violence. Sometimes science-and-data-to-action is conceptualized as unidirectional, from data or science to action. However, science-and-data-to-action should be a feedback loop in which action reciprocally informs data and science. Information gleaned from this feedback loop can be used to increase the impact of violence prevention efforts. The Cardiff Model is one example of an approach that exemplifies the science-and-data-to-action framework.

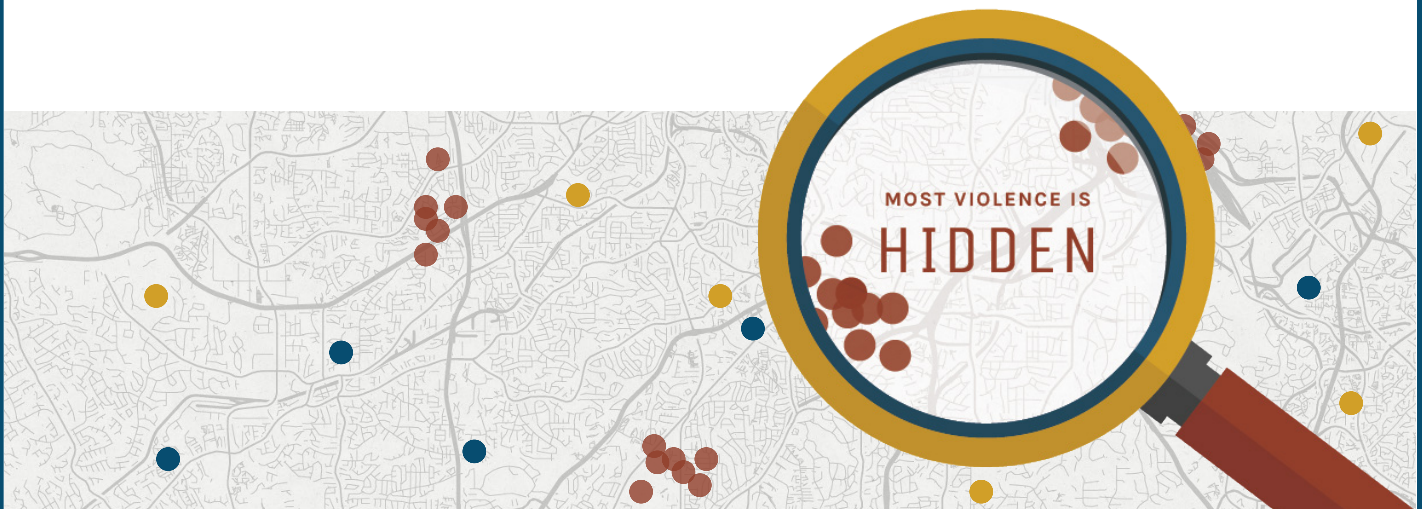
DIVISION OF VIOLENCE PREVENTION'S SCIENCE-AND-DATA-TO-ACTION (SD2A) FRAMEWORK



HIGHLIGHTED CARDIFF MODEL SCIENCE-AND-DATA-TO-ACTION EXAMPLE

CARDIFF, WALES, UK: ENTERTAINMENT DISTRICT IMPROVEMENTS

In Cardiff, Wales, the local Violence Prevention Board identified many violent assaults occurring on the streets of the city's main entertainment district. After using data collected via the Cardiff Model, the Board investigated this area and realized that these assaults were largely due to alcohol-intoxicated individuals bumping into each other on the sidewalks and breaking out into fights after a night of drinking, especially when waiting to be served at fast food outlets and for taxis. The Board worked with the city to make the streets more pedestrian friendly, move taxi stands, appoint taxi marshals (capable guardians), and bring in faith-based leaders (e.g., street pastors) in the city center late at night, which helped decrease violent assaults in the area. The Cardiff Model has also helped to facilitate other solutions to violence in Cardiff, such as changes in the built environment of places where violence occurs (e.g., increased street lighting and the creation of more pedestrian-friendly streets), policy changes (e.g., policies mandating a switch from glass to plastic barware in taverns to avoid broken bottles and glasses being used as weapons) and promotion of stronger community partnerships (e.g., by increasing the number of programs partnering with the religious community to assist violence prevention).



CONSIDERATIONS FOR PUBLIC HEALTH

Public health agencies can play a valuable role in translating data to action and implementing models, strategies, and initiatives to prevent and reduce violence. Public health agencies' major roles as part of the Cardiff Model may include the following:

1. BUILDING THE CARDIFF MODEL COMMUNITY SAFETY PARTNERSHIP (CSP)

Public health agencies that engage in the Cardiff Model can build and sustain partnerships between healthcare providers, law enforcement agencies, and community leaders and partners. Public health agencies can play an important role in identifying local champions during the initial phase of setting up the Cardiff model. Some examples of local champions include hospital leadership, city/county level officials, and community leaders, such as religious leaders, school leaders, leaders of neighborhood organizations, and leaders of additional community-based organizations.

WHAT IS A CSP?

Central to the Cardiff model in the U.S., a CSP is a structured partnership between different institutions (namely, healthcare/ hospitals, law enforcement, and public health agencies) to convene, collect, and share data and develop violence prevention strategies and approaches based on the data. These partnerships are broadly referred to as "community safety partnerships" (CSPs), the term commonly used in the U.K. "CSP" is not intended to be prescriptive; local communities are encouraged to adopt a name, if they so choose, to represent their local collaboration.

2. SERVING AS A DATA REPOSITORY

Public health agencies can serve as an "honest data broker" for data collected by both law enforcement and healthcare partners. Core data elements collected by the Cardiff Model include the location of the violent incident, the date and time of the incident, and the mechanism of injury. Some data elements may be individually identifiable and considered "protected health information" (PHI) which may be covered under the U.S. Health Insurance Portability and Accountability Act of 1996 (HIPAA). Data protected by HIPAA must be properly handled by designated public health authorities, though HIPAA allows for sharing PHI with public health agencies for public health purposes. This could include writing and managing data sharing/use agreements between Cardiff Model partners. In addition to storing data, public health agencies may also map and analyze the data for communities. The data should be geocoded to identify areas with increased rates of violent incidents, known as hotspots.

3. WORKING WITH THE COMMUNITY TO IMPLEMENT VIOLENCE PREVENTION ACTIVITIES BASED ON INFORMATION LEARNED FROM THE DATA

Once the Cardiff Model is adopted and data are being collected, mapped, and shared, the public health agency preferably works with the CSP and the community to identify appropriate strategies and approaches to reduce and prevent violence. Using various data sources to monitor indicators of violence can help CSPs understand rates and trends in violence over time, enabling them to determine appropriate strategies and approaches for a community. Engaging community members and young people with lived experience adds valuable experiential data that complements Cardiff Model data; they may also help select the most appropriate prevention strategies and approaches for their community based on the best evidence. Further, assessing the contextual factors of a community can aid in determining what strengths and opportunities exist. Though the Cardiff Model's evidence base has only been established for place-based violence prevention strategies and approaches, additional types of community-level strategies and approaches can be considered depending upon the identified strengths and opportunities. After appropriate strategies and approaches have been identified, the public health agency may assist in their implementation, support, and evaluation.

RESOURCES ON VIOLENCE PREVENTION STRATEGIES AND APPROACHES

CDC hosts a multitude of resources that support CSPs and communities with implementing strategies and approaches to prevent violence, including the following:

- VetoViolence is an online hub that provides communities with trainings, tools, and resources to prevent violence and implement prevention efforts.
- CDC's Prevention Resources for Action provide communities with strategies based on the best available evidence to prevent or reduce public health problems like violence. The Community Violence Prevention Resource for Action contains a number of strategies and approaches applicable to the Cardiff Model and the goal of preventing and reducing community violence.
- Violence Prevention in Practice is an Implementation Guide that focuses on taking action to select and implement the strategies presented in the Prevention Resources for Action.

4. SUSTAINING THE CARDIFF MODEL

Sustainability is a critical component to the long-term success of the Cardiff Model in a community. Identifying continuous funding streams as early as possible is important to ensure the Cardiff Model's continuation through budgetary and staffing changes, as well as continued support for the community to implement and evaluate violence prevention and intervention programs. It is also important to build a strong infrastructure within the public health agency and clearly identify roles and responsibilities for staff members to ensure that duties and functions within the Cardiff Model are carried out. Continuous monitoring and evaluation of Cardiff Model data, the maps which detail the location of violent incidents, as well as program and intervention efforts are necessary because of the changing nature of violence trends and locations.

ESSENTIAL ELEMENT IN ACTION: ENGAGING AN HONEST DATA BROKER

HOW?

Location: Metro-Atlanta, Georgia

Honest data broker: Georgia Department of Public Health

Essential element: The Cardiff Model works by partnering with an honest data broker to make data accessible

Metro-Atlanta was one of the first sites to implement Cardiff Model in the U.S. When navigating HIPAA, the team worked with CDC to get a ruling from the U.S. Department of Health and Human Services Office for Civil Rights to determine how to best share Cardiff Model data in a compliant manner. Based upon the ruling, the site recruited its state public health agency, Georgia Department of Public Health (GA DPH), to house, analyze, and share Cardiff Model data. With its extensive experience as a neutral party collecting data from many hospitals in compliance with HIPAA, GA DPH is well-positioned to serve as an honest data broker for any Cardiff Model sites in the state of Georgia.

Takeaways: Identifying a state or local public health department to serve as the honest data broker of data is one strategy to achieve the "HOW" of enabling secure, effective, and compliant data-sharing practices.

ADDITIONAL RESOURCES

The Association of State and Territorial Health Officials (ASTHO) has created a detailed step-by-step implementation guide for public health agencies interested in implementing the Cardiff Model in their community. The guide includes, but is not limited to, a possible management structure, roles and responsibilities, implementation enablers and barriers, and sample language for data sharing agreements which public health agencies would spearhead.

HEALTH AGENCY IMPLEMENTATION GUIDANCE: CARDIFF MODEL FOR VIOLENCE PREVENTION | ASTHO

CONSIDERATIONS FOR HOSPITALS

WHO COLLECTS THE DATA?

Who collects the data and how it will be collected is based upon the structure and resources of hospitals. Data may be collected by nurses, medical technicians, volunteer students, researchers, or self-reported (such as through patient portals, surveys, or kiosks). In several U.S. translations of the Cardiff model, nurses have collected violence-related injury data when asking general screening questions during intake or registration. Sites can determine for themselves which staff who interact with patients at their hospital are best suited to collect data, or whether self-reported data collection may be preferable.

WHAT SPECIFIC DATA ARE COLLECTED?

Hospital and healthcare personnel collect violence-related injury data* that can be used to track local violence trends and develop or select violence prevention strategies and approaches. These data include:

- **When** the violence occurred (date and time)
- **Where** the violence took place (exact location: business name and/or street address or intersection)
- **How** the violence-related injury happened and/or weapon used (e.g., hit, stabbed with a knife)

WHEN ARE THE DATA COLLECTED?

Violence-related injury data may be collected at any point during the patient visit. For example, the U.K. Cardiff Model and U.S. pilot sites collected data during registration or initial triage in the ED to prevent any disruption in the workflow.

WHERE IN THE HOSPITAL ARE THE DATA COLLECTED?

It is recommended that data be collected in the emergency department. If the hospital has a separate, on-site urgent care clinic and/or trauma unit, these intake points may also be used to collect violence-related injury data.

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* Violence-related injury data from hospitals, in combination with law enforcement data, are used to map where violence occurs. Only the use of violence injury data have an established evidence base in the U.K. Cardiff Model, though several U.S. sites have explored collecting data on additional types of injuries using the Cardiff Model. Efforts to collect additional injury data using the Cardiff Model should be evaluated for effectiveness.

HOW ARE THE DATA COLLECTED?

The violence-related injury data can be integrated into the existing electronic health record (EHR) or collected via separate data forms and databases. Integration of violence-related injury data into the EHR permits the most efficient data collection and data extraction process.

HOW OFTEN DO ANONYMOUS VIOLENCE DATA GET SHARED?

Violence data can be shared on any mutually agreeable time frame within the CSP. Past partnerships have found monthly sharing to be useful, although more frequent sharing could occur.

CHALLENGES OF USING EHRs TO COLLECT AND SHARE DATA

Protection of private patient information is a major consideration in the implementation of the Cardiff Model. The Cardiff Model shares information that captures the location, date and time, and the weapon used in violence-related injuries. The Cardiff Model uses real-time hospital and law enforcement data to help communities identify and map areas where violence frequently occurs such as in public spaces like street corners or bus stops and businesses.

In some hospitals or healthcare facilities, using the EHR or other forms of a patient medical record to collect data that will be shared outside of the institution may raise privacy concerns. These concerns are addressed in the "Legal, Technical, and Financial Considerations" section of this document.

ESSENTIAL ELEMENT IN ACTION: UNIQUE VIOLENT INJURY DATA

Location: St. Louis, Missouri

Cardiff Model data: Hospital EHRs

Essential element: The Cardiff Model is a data-driven model that generates unique data such as location of violent injuries.

After encountering difficulties in effectively and accurately identifying the location of violent injuries in emergency departments (EDs), the Cardiff Model implementation team in St. Louis streamlined the data collection process. They integrated Cardiff Model-specific fields into their electronic health records (EHRs) and trained nurses to collect these data from emergency department patients who were victims of violence.

Takeaways: Modifying hospital EHRs to collect violent injury data and training staff on the screening process is an effective data collection method.

OTHER HOSPITAL DATA ON VIOLENCE-RELATED INJURIES

Data on violence-related injuries can be obtained via multiple sources. One such source is syndromic surveillance data. Syndromic surveillance methods can be applied to EHR data to identify health care visits (most often emergency department visits) for specific outcomes of interest. Syndromic surveillance relies on a combination of keywords from chief complaints and discharge diagnosis codes (i.e., International Classification of Diseases, Ninth/Tenth Revision, Clinical Modification and SNOMED CT) to identify emergency department (ED) visits that are classified based on developed syndrome definitions. CDC, in conjunction with state and local jurisdictions, has developed several violence-related syndrome definitions which allow public health officials to examine state and local trends, detect and monitor events, and validate other data sources. Additionally, local jurisdictions may deploy definitions they develop and use specific to their jurisdiction. By tracking symptoms and diagnoses of patients in emergency departments in near real-time, public health officials can detect unusual levels of illness or injury to determine whether a response is warranted. Syndromic surveillance also allows for monitoring trends in injury and violence, and identifying populations that may be at increased risk for violence (e.g., specific age groups), as well as a host of other communicable and chronic diseases.

How do data on violence-related injuries obtained from the Cardiff Model compare to syndromic surveillance data? Additionally, what factors should be considered when selecting and using data from one or both sources? The two offer seemingly similar information, so how would a site or jurisdiction determine which one best suit their needs, especially if resources are limited? The overlapping and unique components of the Cardiff Model and syndromic surveillance are described in the Appendix to aid in answering these questions and more. Some frequently asked questions (FAQs) can be found below.

FREQUENTLY ASKED QUESTIONS

ARE THE CARDIFF MODEL AND SYNDROMIC SURVEILLANCE SEPARATE SYSTEMS?

Yes, the Cardiff Model and syndromic surveillance are separate systems. In the Cardiff Model, hospital data on violence-related injuries are manually collected via a violence screener in the emergency department. Syndromic surveillance data on violence-related injuries are obtained by querying a system that uses hospital discharge diagnosis codes (i.e., ICD-9-CM, ICD-10-CM, SNOMED CT) and chief complaint terms to identify visits that match a specific violence syndrome definition.

WHICH DATA SOURCE PROVIDES INFORMATION ABOUT THE LOCATION OF THE INJURY?

One of the key features of the Cardiff Model is geospatial data which includes the address of the location where the injury occurred, as well as information on the date and time of the injury. This information is combined with reported law enforcement incidents to produce maps which provide a more complete picture for communities about where violence is occurring. Syndromic surveillance collects the date and time when the injury was treated, which may or may not be closely related to when the injury occurred, but it does not collect information on the location, date, or time of injury. However, some information about the injury location may be included in the chief complaint field or triage notes.

FREQUENTLY ASKED QUESTIONS (CONTINUED)

WHAT IS UNIQUE ABOUT EACH DATA SOURCE AND SYSTEM?

The Cardiff Model provides information about the location where a violence-related injury occurred. This information is not actively collected in syndromic surveillance data. The Cardiff Model then uses the data obtained from the hospital violence screener and combines and overlays it with law enforcement data to create maps and uncover hidden violence. A multi-sector partnership then uses the maps to inform decisions about violence prevention programs and strategies. While a jurisdiction that participates in syndromic surveillance may choose to examine the data and share it with law enforcement, the community and other sectors, there is no required commitment. Syndromic surveillance allows users to monitor trends in injury and violence and examine overlap in other diseases and injuries.

WHICH DATA SOURCE/SYSTEM IS BEST?

The Cardiff Model and syndromic surveillance data each have strengths and weaknesses that should be carefully considered. Resources may be limited in communities; thus, each site should reflect on their intended goals and select the approach system(s).

KEY STEPS TO ESTABLISH THE CARDIFF MODEL IN A HOSPITAL

1. BUILDING RELATIONSHIPS

a. Establish a CSP with the local community, a public health agency, law enforcement, and other applicable partners

b. Determine the most useful data for the CSP to collect, with a focus on keeping data collection brief. It is important to weigh the advantages of including the information that stakeholders might like to have against the consequences of making the screening process too long and raising privacy concerns. It is best to focus on the data that are most critical. Please note that violent injury data has an established evidence base in the U.K. Cardiff Model, though several U.S. sites have explored collecting data on additional types of injuries using the Cardiff Model.

c. Gain hospital leadership (e.g., management and nursing) support

2. COLLECTING AND SHARING DATA

a. Identify the personnel or departments with the capacity to integrate Cardiff Model fields in the health record or EHR

b. Establish procedures for collecting violence data

c. Train nurses and other staff to collect violence data

d. Determine strategies to monitor and improve data quality

e. Find out what laws and regulations must be considered in order to collect and share violence data outside of the hospital or healthcare system

f. Establish procedures for extracting and sharing violence data

g. Identify hospital information technology/data quality team to set up a data sharing process

h. If necessary, develop and sign a shared data use agreement to protect the information that is shared

3. BUILDING A COMMUNITY SAFETY PARTNERSHIP

a. Work with law enforcement and public health partners to establish a CSP to review and act on the maps of violent injury

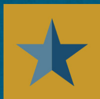
b. Help to develop a culture of decision-making based on real-time data

c. Assist in implementing multi-agency prevention programs and initiatives at locations identified in the mapping of the data

TRAINING OPTIONS FOR HOSPITAL STAFF

Training can be delivered in many different formats. Below are some of the advantages and challenges with different training formats. The U.S. Cardiff Model pilot sites tested multiple methods of training; in-person training is most helpful for rapid scale-up and close adherence to the Cardiff Model when starting the program.

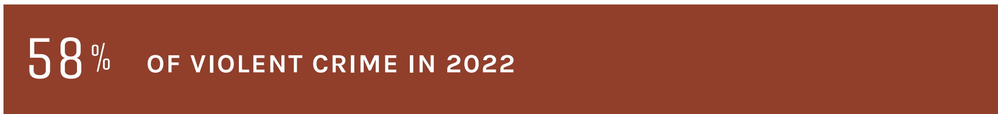
FORMAT	DELIVERY METHOD	ADVANTAGES	CHALLENGES
Self-study	E-mail, online, paper	**Easy and does not require significant personnel time or effort**, can be integrated into standard staff training and education platforms	Difficult to evaluate the extent and efficacy of training process; staff uptake may be a challenge, but requiring completion with proof of a training certificate can address some of these challenges.
Staff in-service	Large group instruction	**Face-to-face**, provides the opportunity to ask questions	Requires on-site trainer until all staff have completed training; in-service may be infrequent and slow the initiation of project activities; training may not reach new staff
EHR orientation for new hires	Large group instruction	**Face-to-face**, provides the opportunity to ask questions, reaches new staff	Requires on-site trainer until all staff have completed training
Regular staff or shift change meeting	Small group instruction	**Face-to-face**, provides the opportunity to ask questions	Requires trainer or project champion on shift until everyone is trained and in continuation to educate new staff
One-on-one training	Individual	**Face-to-face**, opportunity to ask questions, able to assess knowledge	Requires on-site trainer; resource intensive

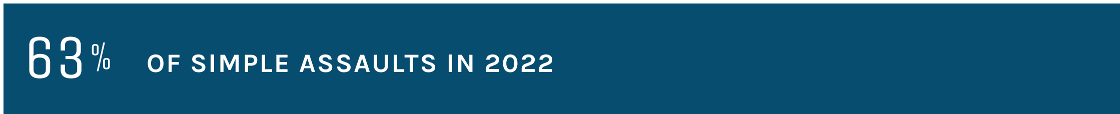


CONSIDERATIONS FOR LAW ENFORCEMENT

WHY ARE HOSPITAL VIOLENCE DATA IMPORTANT FOR LAW ENFORCEMENT?

According to a 2023 U.S. Department of Justice report, many violent crimes go unreported to law enforcement, including:





Similarly, a 2019 study of emergency department-police data matching found that **89% of violence incidents** that led to emergency department treatment in the state of Georgia were not known to police.[5]

Hospitals treat individuals who are injured in violent incidents. If the time, date, location, and weapon used in violent incidents are captured through the Cardiff Model, a community can develop a greater understanding of how and when violence is occurring. Mapping areas of where violence occurs from hospital and police information (known as hotspot mapping) is critical to understanding and developing violence prevention programs and strategies within the community.

HOW DOES LAW ENFORCEMENT PARTICIPATE IN THE CARDIFF MODEL?

Law enforcement and area hospitals form a CSP where data are shared. This information includes:

- **When** the injury occurred (date and time)
- **Where** the injury took place (business name and/or street address)
- **How** the injury happened and/or weapon used (e.g., hit, stabbed with a knife)

5. Wu et al. (2019). JAMA Internal Medicine, 179(1), 111–112.

ESSENTIAL ELEMENT IN ACTION: UNIQUE VIOLENT INJURY DATA

Location: Las Vegas, Nevada
Cardiff Model data: Open-source law enforcement data
Essential element: The Cardiff Model is a data-driven model that generates unique data such as location of violent injuries

The Las Vegas Cardiff Model committee is leveraging open-source law enforcement data to identify areas with high rates of violence and engage community members. They are engaging with local leaders in police, public health, hospitals, parks and schools, and city and county agencies to share data to prevent injuries due to public violence and develop effective prevention strategies. Because the data are open-source, they can be easily accessed without the need for a legal agreement.

Takeaways: Check to see if your community has an open data portal for law enforcement data. Open-source data can be easily accessed without a legal agreement.

WHAT IS LAW ENFORCEMENT'S ROLE IN THE COMMUNITY SAFETY PARTNERSHIP?

Through the CSP, law enforcement provides violence data, which is combined with violence data from hospitals collected via the Cardiff Model. The CSP uses these combined data to identify existing or new violence hotspots. In addition, law enforcement has historical knowledge of what type of prevention programming and current efforts are being directed in these areas. These critical elements of providing violence data and historical knowledge will help guide CSP efforts and complement (not duplicate or interfere with) previous or ongoing work.

HOW OFTEN DO ANONYMOUS VIOLENCE DATA GET SHARED?

Violence data can be shared on any mutually agreeable timeframe within the CSP.
Past CSPs have found monthly sharing to be useful, although more frequent sharing could occur.

MY ORGANIZATION DOES NOT HAVE THE CAPACITY TO PRODUCE AND PROVIDE HOTSPOT MAPPING IN-HOUSE. CAN THE CSP STILL WORK?

Yes! While the basis of the CSP's work and prevention activities should be guided by sharing current data on where violence is happening, there are many alternatives to producing the maps in-house. Public health departments, colleges, and universities may be interested in participating in the CSP and can add value by providing mapping services and statistical analysis of program effectiveness. There are also many private geospatial data service agencies that provide mapping of governmental data. Please note that data sharing agreements will need to be in place for third parties to provide mapping services.

KEY STEPS TO STARTING THE CARDIFF MODEL IN A LAW ENFORCEMENT AGENCY

1. **RELATIONSHIP BUILDING AND COMMUNITY TRUST**
    a. Establish a CSP with a hospital and public health agency
    b. In collaboration with the CSP, determine the most useful violence data to collect and map. Keep in mind that violent injury data has an established evidence base in the U.K. Cardiff Model, though efforts in the U.S. to collect additional types of data via the Cardiff Model show promise

2. **LAW ENFORCEMENT AGENCY BUY-IN AND SUPPORT**
    a. Obtain law enforcement leadership buy-in and support
    b. Obtain any necessary permissions for sharing violence data with partners
    c. Ensure hotspot maps can be created from law enforcement and hospital data sources

3. **VIOLENCE DATA AND MAP SHARING**
    a. Establish procedures for sharing violence data and maps
    b. Develop and sign any necessary data use agreements

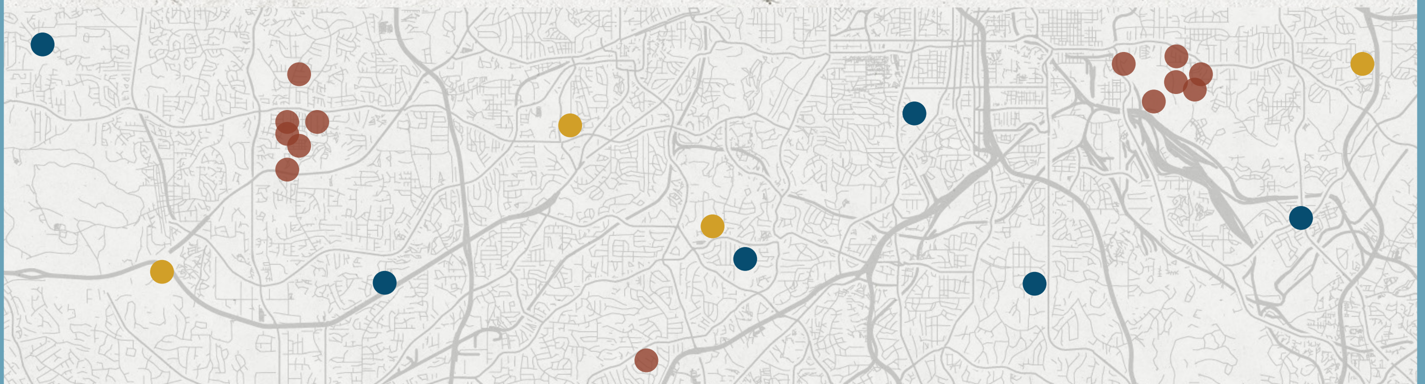
4. **CSP ACTIVITIES***
    a. Work with partners in the CSP to review the maps on violent injury
    b. Make decisions based on real-time data
    c. Assist in implementing multi-agency prevention programs and initiatives at locations identified in the mapping of the data

Please see the "Building Partnerships" section for more information on how violence data are used within the CSP, relationships are expanded, and violence prevention programs are implemented.

LEGAL, TECHNICAL, AND FINANCIAL CONSIDERATIONS

Because the Cardiff Model requires that data on violence-related injuries is shared, there are many legal, technical, and financial considerations that may be important in planning and maintaining a local CSP. These considerations should be addressed before any program activities begin or early in implementation.

The Cardiff Model is intended to be implemented as a local public health program. Consequently, variation in how data are collected and the partners involved in data sharing may occur based on local prevention needs. The information below is intended to help clarify issues that are likely to arise about the U.S. HIPAA Privacy and Security Rules when the data sharing involves HIPAA "covered entities,"[6] such as hospitals or other health care providers, or their "business associates"[7] for covered entities in the U.S. and its territories.



6. 45 C.F.R. § 160.102.
7. See 45 C.F.R. § 160.103. A "business associate" is a person or entity who performs functions or activities on behalf of a covered entity that involve access by the business associate to protected health information. A "business associate" also is a subcontractor that creates, receives, maintains, or transmits protected health information on behalf of another business associate.

DATA SHARING MECHANISM AND HIPAA APPLICABILITY

This information is for educational purposes only and is not intended as a substitute for professional legal advice. Always seek the advice of an attorney or other qualified professionals with any questions you regarding a legal matter.

CARDIFF MODEL PARTNERSHIPS INVOLVING PUBLIC HEALTH AUTHORITIES

The core data elements to be collected under the Cardiff Model include: 1) location of the violent incident, 2) date/time of the violent incident, and 3) weapon used. While data on additional types of injuries may also be collected and shared based on the public health needs of the community, the Cardiff Model's evidence base has only been established for the collection of violent injury data.

Certain data elements may be individually identifiable, and thus considered "protected health information" under HIPAA, when created, received, maintained, or transmitted by a HIPAA covered health care provider.[8] We anticipate under this model that health care providers, which are subject to HIPAA, may be sharing these data elements with state or local health departments and agencies, which typically meet the HIPAA definition of a "public health authority."

The HIPAA Rules define "public health authority" as "An agency or authority of the United States, a state, a territory, a political subdivision of a state or territory, or an Indian tribe, or a person or entity acting under a delegation of authority from or contract with such public agency, including the employees or agents of such public agency or its contractors or persons or entities to whom it has granted authority, that is responsible for public health matters as part of its official mandate."[9]

HIPAA permits a covered entity, such as a health care provider, to disclose "protected health" information to a public health authority for the purpose of preventing or controlling disease, injury, or disability, including but not limited to, for public health surveillance, investigations, and strategies and approaches for violence prevention. Authorization is not needed from the individual to whom the protected information pertains, and a covered provider is not required to establish a data sharing agreement to disclose "protected health information" to the authorized public health authority for public health purposes.[10] However, a disclosure to a public health authority must be the "minimum necessary" information to achieve the public health objective, and a covered entity may rely on the representation of the public health authority to determine what constitutes the minimum necessary.[11]

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8. See 45 CFR § 160.103.
9. 45 CFR § 164.501
10. See 45 CFR § 512(b) and OCR's Public Health guidance, https://www.hhs.gov/hipaa/for-professionals/special-topics/public-health/index.html.
11. See 45 CFR § 164.502(b). When using or disclosing protected health information or when requesting protected health information from another covered entity or business associate, a covered entity or business associate must make reasonable efforts to limit protected health information to the minimum necessary to accomplish the intended purpose of the use, disclosure, or request. HIPAA covered entities may rely on representations from public health officials that the amount of information requested is the minimum necessary. See HIPAA Guidance Materials on Covered Entities and Business Associates for more information.

Public health agencies may join with other organizations to form CSPs to achieve violence reduction, for example, by targeting violence prevention strategies, approaches, and resources to specific populations or geographic areas. In fact, standards[12] for national voluntary accreditation of state, local, tribal, and territorial health departments envision health departments that lead collaborative efforts to assess and address public health issues facing the community.

In a public health initiative, a public health agency can delegate authority to multiple types of organizations to carry out its official public health mandate. When an organization is acting under such a delegation from a public health authority, a HIPAA covered provider, such as a hospital, may disclose protected health information without patient authorization to the organization in the same manner as it could disclose to a public health authority.[13]

Each CSP will need to determine which entities will carry out the data-handling functions and determine how HIPAA applies. For example, a hospital may collect the data and disclose it to a third party for the purpose of removing unnecessary identifiers before disclosing the information to the public health authority. In this case, the third party would be acting as a business associate for the hospital with a business associate agreement. The business associate agreement would specify the activities the third party is doing on behalf of the covered provider.[14] In another example, the covered provider may disclose the data directly to the public health authority, which may then format it and aggregate the data with other information, such as law enforcement data. A disclosure from covered provider to public health authority for public health activities would not require a business associate agreement or consent.

In a Cardiff Model CSP, collaborating organizations may use the data received from the public health authorities or organizations acting under a delegation of authority to create maps for the partnership or to develop local violence prevention solutions. Local public health agencies should ensure compliance with applicable local and state laws in addition to HIPAA.

CARDIFF MODEL CSPs WITHOUT INVOLVEMENT OF A PUBLIC HEALTH AUTHORITY

It is possible that some communities wishing to implement the Cardiff Model may not have a public health authority able to engage in the CSP. In these scenarios, hospitals, law enforcement agencies, and other municipal and community partners could seek to form CSPs; however, the nature and function of these CSPs may be more limited than when a public health authority is involved. For example, a HIPAA covered entity, such as a hospital, may share information with a third party acting as a business associate for the hospital pursuant to a business associate agreement. If specified in the business associate agreement, the business associate could perform data analysis, mapping, or data processing functions on behalf of the hospital; however, all functions performed by the business associate must be consistent with the terms set forth in the business associate agreement. Business associates who use the data or disclose the data to third parties must comply with the terms of the business associate agreement and all applicable HIPAA requirements, including those related to data aggregation and de-identification as applicable.[15]

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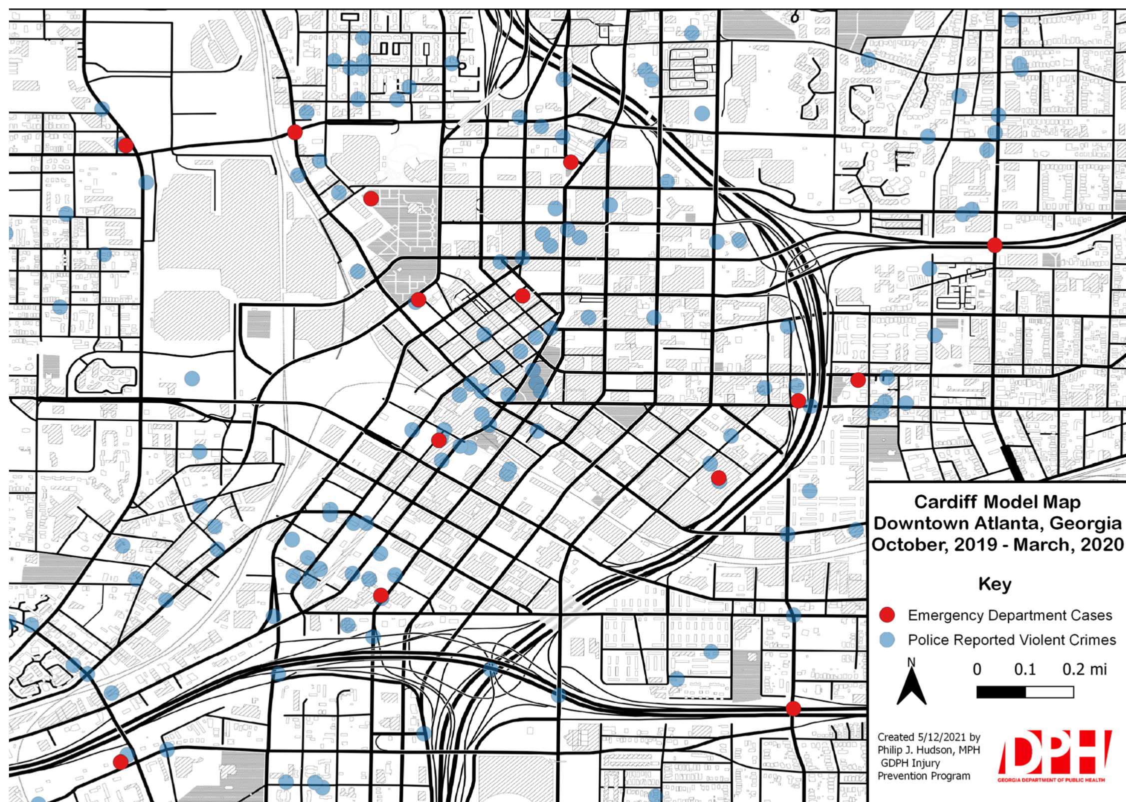
12. Public Health Accreditation Board (PHAB), Standards & Measures for Domain 1: Conduct and Disseminate Assessments Focused on Population Health Status and Public Health Issues Facing the Community, and Domain 4: Engage with the community to identify and address health problems, available at http://www.phaboard.org/wp-content/uploads/SM-Version-1.5-Board-adopted-FINAL-01-24-2014.docx.pdf.
13. See 45 CFR § 164.501, definition of Public health authority; and 45 CFR § 164.514(h), verification requirements.
14. See 45 CFR § 164.502(e); 45 CFR § 504(e)
15. See 45 CFR § 164.502, 164.514(a) and (b), and 164.501 (definition of data aggregation).

PUBLIC PRESENTATION OF INFORMATION FROM CARDIFF MODEL CSPs

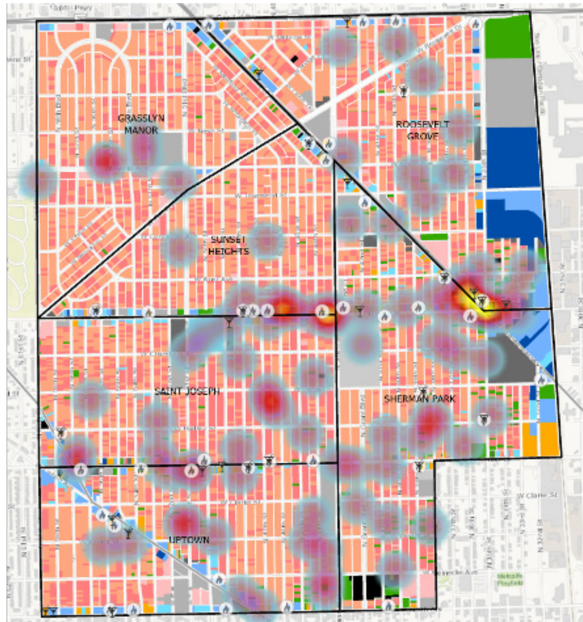
Lastly, the Cardiff Model program may raise questions about what injury incident data can be shared, presented, or discussed with the public. For example, Cardiff Model CSPs in other countries have benefitted from presenting maps at community forums or among a broad set of municipal partners. Health care providers that provide data for this program may have concerns about disclosing information that may ultimately be shared publicly. To allay these concerns, maps showing the locations of violent incidents occurring in public or commercial spaces and treated at a hospital may be presented by aggregating incident information over time such that the information could not be used to identify an individual. An example map is presented below. The minimum time period for aggregation should be one month. Summary descriptive information, such as listing the businesses experiencing the highest counts of violent injuries in a city, can also be presented.

EXAMPLE MAPS OF INCIDENTS COLLECTED BY EMERGENCY DEPARTMENT

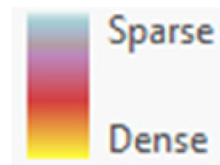


Example Maps of Incidents Collected in Milwaukee, Wisconsin

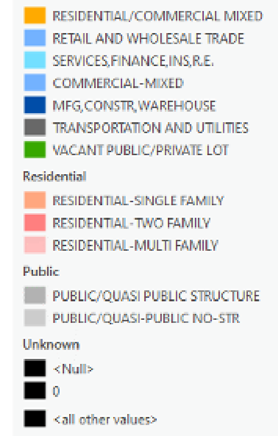
July 2023, Sherman Park Community Association Focus Area



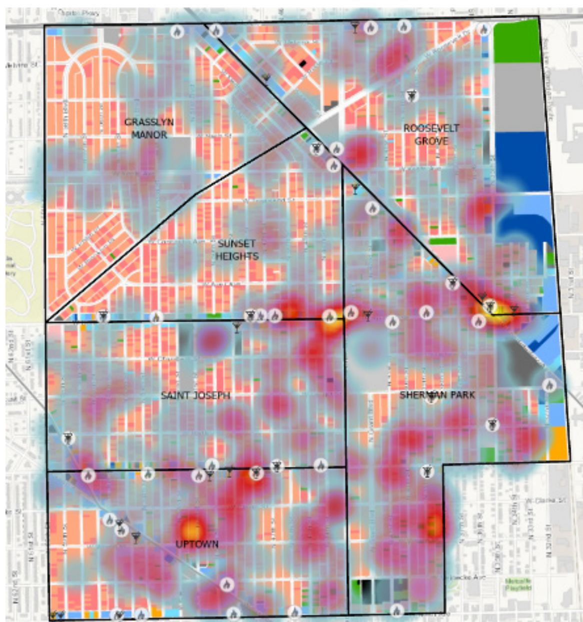
Heat Map



Parcel Layer



6 Months, February – July 2023, Sherman Park Community Association Focus Area



TECHNICAL CONSIDERATIONS

The Cardiff Model does not require any specific technologies for implementation. Efficient capturing, comparing, and mapping of violent incidents can be done with minimal technological inputs or advanced technological support. However, there are several components of the Cardiff Model that require consideration of current and future technological capacity.

COLLECTING DATA

Collecting violence data can be accomplished through separate data forms or integrated into a hospital's EHR system. Currently, integration of violence data into the EHR is the most efficient process for collecting and extracting data. If collecting data using a separate data form, those data need to be entered into a database or a data system and verified to prevent errors during the transition.

CLEANING DATA

Once collected, violence data need to be retrieved from the EHR and/or organized. Before a HIPAA covered entity can share these data, they need to be reviewed and cleaned to ensure they do not contain more than the necessary data elements for the purposes of the project (most patient identifiable information will be excluded)[16] and that the data are entered in the correct data fields. This is also a good time to consider how to benchmark the extent and quality of the data that are collected.

SHARING DATA

The technical requirements for sharing information will depend on the data sharing agreement established by the CSP. Important considerations include the data format (i.e., structure and file type), the security of data transfers, frequency of data transfers, and potential for computer automated sharing.

MAPPING

Mapping areas of violence (known as "hotspots" by law enforcement) can be accomplished by using a range of methods. CSPs may have the capacity to use advanced mapping processes to create maps. There are also a range of mapping resources, including free and open source software, such as R or QGIS, for producing maps and managing geospatial data.

SECURING DATA

Any electronic protected health information created, received, maintained or transmitted by a HIPAA covered entity or its business associate must be used or disclosed consistent with the HIPAA Security Rule.[17] Participating organizations that are not subject to HIPAA should also consider the use of protective mechanisms such as data encryption or other forms of web-based data transfer security for data sharing.

MONITORING AND EVALUATING

Regular monitoring and evaluation of the data collection system is important, especially during the early stages of implementation. Collaborating institutions should consider the technological inputs required to ensure that the violence data collected from the health system and law enforcement agencies are as accurate and complete as possible, and to monitor the changes that occur as the program progresses.

16. See 45 CFR § 164.502(b).
17. 45 CFR § 164.302.

FINANCIAL CONSIDERATIONS

Initiation and maintenance of the Cardiff Model may be based on volunteer effort or supported through municipal, foundation, or federal/state grants. However, the Cardiff Model can be feasibly implemented without external funding (e.g., grants) if there is institutional support for dedicating staff time to work on the initiative, as staff time is the major input. Small amounts of funding to support data collection, data collection system development, and incentives to support program activities are helpful. While cost-benefit analyses have not yet been conducted in the United States, analyses in U.K. revealed that the Cardiff Model saved over **$19 in criminal justice costs and nearly $15 in health system costs for every $1 spent from 2003 to 2007.**[18]
Potential costs to bear in mind include:

PERSONNEL

What financial or other compensation (if any) are required to:

- Develop and sustain the CSP
- Refine the information collection system (e.g., hospital IT staff time if integrated into an EHR)
- Collect information
- Conduct trainings and promote the program among staff and within the community
- Clean, transfer, and map data
- Attend partnership meetings and other program activities
- Develop and implement violence prevention strategies and approaches
- Write and apply for grants

HARDWARE AND SOFTWARE

Will there be additional costs to:

- Collect, store, and manage violence-related injury data
- Incorporate data collection fields into an EHR or other parallel database
- Create and maintain a process for data to be secured and securely shared
- Procure mapping software

PARTNERSHIP FACILITATION

Who pays and what will be the costs for:

- Partnership meetings
- Partnership materials (i.e. program promotion, local branding)
- Implementing violence prevention strategies and approaches informed by Cardiff Model data
- Public events

PROGRAM EVALUATION

What support is required for the monitoring and evaluation of:

- Program Effectiveness
  How will the evaluation of process or outcome effectiveness of a local program be supported?
- Cost-benefits
  How will the evaluation of cost savings associated with local prevention of violence and violent injuries relative to program inputs be supported?

18. Florence, Curtis, et al. "An economic evaluation of anonymised information sharing in a partnership between health services, police and local government for preventing violence-related injury." Injury prevention 20.2 (2014): 108-114

EVALUATING THE CARDIFF MODEL

WHY EVALUATE CARDIFF MODEL IMPLEMENTATION?

Evaluation plays a critical role in any community violence prevention approach. As described in CDC's VetoViolence EvaluACTION resource, evaluation is a "systematic method for collecting, analyzing, and using data to examine the effectiveness and efficiency of programs, and as importantly, to contribute to continuous program improvement." Evaluation results can also be used to inform future resource investments and programming, build an evidence base, learn from findings early and course correct as needed, and more broadly measure the impact of a program or intervention (e.g., measurable reductions in violence). Designing an evaluation approach from the outset will enable a more rigorous, efficient, and intentional approach to data collection and evaluation.

Given the changing nature of trends in violence, evaluation serves as an important aspect of Cardiff Model implementation to understand barriers, strengths, and impact for each unique community and context. For example, in Cardiff, Wales, where the Cardiff Model was originally founded, the health care system and nature of violence are different from those in the U.S. Even within the U.S., implementation will look different at each site, and evaluation allows sites to better understand shared and unique aspects. Importantly, building an evidence base through evaluation can make the case for additional resources and funding to expand implementation.

WHAT TYPE OF EVALUATION SHOULD I USE?

Depending on the stage of implementation, different types of evaluation may be more useful than others. Formative or process evaluations can be helpful early in the process to inform and course-correct implementation of the Cardiff Model. For example, CDC conducted a process evaluation in 2023 with eight sites at various stages of implementation across the U.S. to understand each site's successes and challenges. Sites including Atlanta, GA, Milwaukee and West Allis, WI, St. Louis, MO, and Las Vegas, NV, have also conducted more focused evaluations and research on specific aspects of implementation such as data collection and quality. More information on evaluation and research conducted by U.S. sites is available in the Cardiff Model Resources, Presentations, Reports, and Manuscripts on page 46. Summative evaluations, such as outcome evaluations, are useful once implementation is complete to document the impact of the Cardiff Model on violence prevention.

HOW DO I GET STARTED?

CDC's VetoViolence webpage offers the EvaluACTION resource as a step-by-step guide to program evaluation. The resource begins with the basics of evaluation, offers steps for preparing for evaluation, and walks through the Framework for Evaluation. The site also offers a Resource Checklist that can be used to document each component. While EvaluACTION details each step, a few milestones are noted below:

1. Develop a logic model to document how your program aims to achieve the intended objectives. Identify short-term, intermediate, and long-term outcomes.
2. Create an evaluation plan to document your approach, using the logic model as an input.
3. Regularly monitor and evaluate your Cardiff Model implementation, especially during the early stages, to determine program effectiveness.
4. Make appropriate changes to the implementation based on monitoring and evaluation findings, as well as new Cardiff Model data.
5. Document and share evaluation findings with relevant audiences, community members, and other sites to provide lessons learned and contribute to the evidence base. Conference presentations and peer-reviewed articles are great ways to disseminate findings to larger audiences.

BUILDING PARTNERSHIPS

CSP PARTICIPANTS

Strong Cardiff Model CSPs will likely involve, at minimum, public health agencies, hospitals, and law enforcement organizations. Based on where maps are showing that violence is occurring, the CSP may bring in other government agencies and community organizations, partners, and leaders to collaborate on violence prevention programs and activities.

It is important to have designated hospital, public health, and law enforcement representatives, and multiple individuals if possible from each agency, participating in the CSP. Key hospital members may include emergency department physicians, charge nurses, or senior trauma staff. Key law enforcement individuals may include senior officers who report directly to command staff, those within leadership positions, and those who produce or assist in producing maps of where violence occurs (referred to as "hotspot" maps in the law enforcement community). Additionally, some law enforcement agencies have units that engage in community policing and work with citizens collaboratively to address problems. Engaging these units might be helpful because they have developed trust with residents and have an understanding of conditions in specific communities.

Cardiff Model partners will likely be agencies and organizations serving areas with the highest concentration of violence, based on hospital and law enforcement map data. Cardiff Model partnership members may include:

- Hospitals
- Law Enforcement Agencies
- Public Health Department
- Policymakers
- Academic institutions
- City Planning/Zoning Officials
- Faith Based Organizations
- Business Associations
- Community Organizations, Partners, and Leaders

ESSENTIAL ELEMENT IN ACTION: BUILDING MULTI-SECTORAL PARTNERSHIPS

WHO?

Location: Milwaukee, Wisconsin

Name of partnership: Violence Free West Allis Collaborative (VFWAC)

Essential element: Partners and champions across the community and sectors need to be involved in the Cardiff Model.

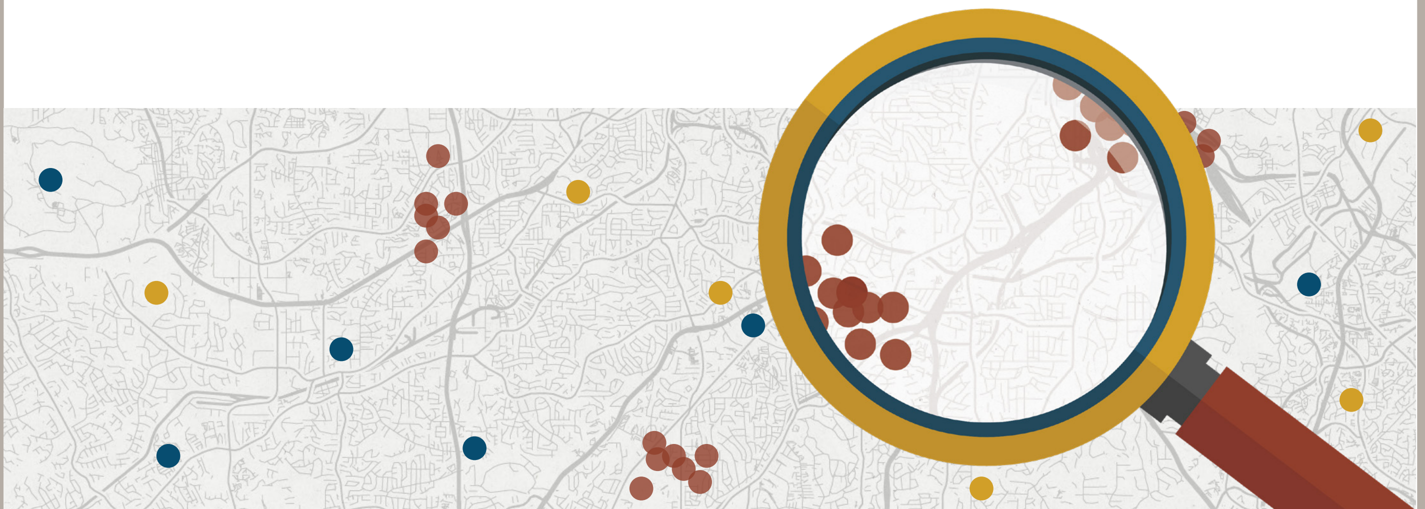
Milwaukee, WI, began implementing the Cardiff Model in 2015. Today, VFWAC consists of over two dozen partners, including hospitals, police departments, EMS, school district, Mayor's office, local businesses, and community-based organizations.

Takeaways: Central to the Cardiff Model is convening partners across sectors that may not typically work together to collaboratively implement violence prevention strategies.

WHY IS A MULTI-AGENCY CSP IMPORTANT FOR VIOLENCE PREVENTION?

Multi-agency CSPs provide an opportunity to (1) frame violence prevention as a law enforcement strategy to reduce crime and (2) address violence prevention using a public health approach. The public health approach† encourages violence prevention at a population level to provide data and violence prevention strategies and approaches with the maximum benefit for the largest number of people.

In the Atlanta, GA, pilot of the Cardiff Model, the United States Injury Prevention Partnership (USIPP), which is the CSP local to the Atlanta site, aggregated and mapped hospital and law enforcement data to identify violence hot spots. Subsequently, USIPP engaged a local law enforcement precinct commander and staff, an active community representative, and a local business group to pilot a Safety Improvement Project. Activities included improving law enforcement patrols, supporting a youth basketball team, cleaning a vacant lot, adding plants, and increasing lights and security cameras around the identified hotspot.



For more information about the public health approach, please visit About The Public Health Approach to Violence Prevention | Violence Prevention | CDC.

KEY STEPS TO STARTING THE CARDIFF MODEL CSP IN A COMMUNITY

1. RELATIONSHIP BUILDING

a. Establish a CSP between law enforcement, hospitals, and public health agencies

b. Determine the most useful violence data (time, date, and location are critical elements) for the CSP

c. Establish regular intervals (e.g., monthly) for the CSP to meet and discuss violence data, maps identifying areas of violence, and other relevant issues. In-person meetings focused on violence prevention are a great way to build relationships between individuals and the organizations they represent.

- *Face-to-face meetings are important to develop relationships within the partnership, although virtual meetings may sometimes be more convenient*
- *CSPs are also encouraged to have opportunities for informal meeting settings such as over breakfast/lunch/coffee or having a meeting followed by some time for socializing*

2. HOSPITAL BUY-IN AND SUPPORT (SEE "CONSIDERATIONS FOR HOSPITALS")

a. Obtain hospital (emergency department/trauma) leadership buy-in and support

b. Obtain permissions for collecting and sharing violence data

c. Navigate HIPAA and privacy rules which may require the involvement of a government public health agency to facilitate the exchange of information (see "Legal, Technical, and Financial Considerations")

3. LAW ENFORCEMENT BUY-IN AND SUPPORT (SEE "CONSIDERATIONS FOR LAW ENFORCEMENT")

a. Obtain law enforcement leadership buy-in and support

b. Obtain permissions for sharing violence data

4. TRAINING AND TECHNICAL PROCESSES

a. Identify, establish procedures, and train hospital staff to collect violence data

b. Identify, establish procedures, and, if appropriate, train CSP members to combine hospital violence data with existing law enforcement data to produce maps

c. Identify and establish procedures to share information and produce maps if a third party is producing the maps

5. VIOLENCE DATA AND MAP SHARING

a. Identify hospital information technology/data quality team to set up data sharing

b. Establish procedures for sharing violence information and maps

c. If necessary, develop and sign a shared data use agreement

KEY STEPS TO STARTING THE CARDIFF MODEL CSP IN A COMMUNITY (CONT.)

6. IDENTIFICATION, PLANNING, AND EXECUTION OF VIOLENCE PREVENTION STRATEGIES AND APPROACHES

a. Review hospital violence and law enforcement data combined maps identifying areas of violence

b. Identify an area or areas that the CSP would like to examine more closely to plan evidence-based violence prevention strategies and approaches

c. Examine the types of violence occurring in the area and consider all aspects of the area, such as: geographic area features (roads/intersections, lighting, transportation options, etc.), businesses (bars, clubs, restaurants, lounges, gas stations, etc.), and other factors that may contribute to violence and injury

d. Recruit appropriate partners to the CSP based on the patterns of violence (e.g., other government agencies such as alcohol licensing or code enforcement, business associations, or community leaders)

e. Identify and review any existing evidence-based strategies that could be appropriate for this area (e.g., address risk and/or protective factors that are particularly relevant to the community or make use of unique opportunities in the community)
   - *Evidence-based strategies used in other communities, including the U.K., serve as important resources to help guide implementation of violence prevention strategies and approaches.*
   - *CDC's Division of Violence Prevention has several prevention resources for action on different topics (e.g., child abuse and neglect, sexual violence, community violence, suicide) that may serve as a resource for identifying strategies that are based on the best available evidence. Available here: https://www.cdc.gov/violence-prevention/php/resources-for-action/*

f. The CSP should determine next steps which may include: reviewing crime report narratives, visiting the area, examining the types of violence and injuries, talking with business/community leaders to see if they are willing to work with the CSP, and any other ideas that are driven by the maps.

g. Consider Cardiff Model interventions at multiple levels, such as:
   - *Policy: Switching to toughened glass in bars and enforcing alcohol-related ordinances*
   - *Community: Repairing the appearance of buildings and vacant lots to improve lighting and visibility, and creating more pedestrian-friendly streets*
   - *Individuals: Developing programs where "capable guardians," such as clergy or "credible messengers", assist at-risk individuals by de-escalating conflicts and providing access to resources (e.g., food, housing, employment, etc.)*

7. PROGRAM MONITORING AND EVALUATION

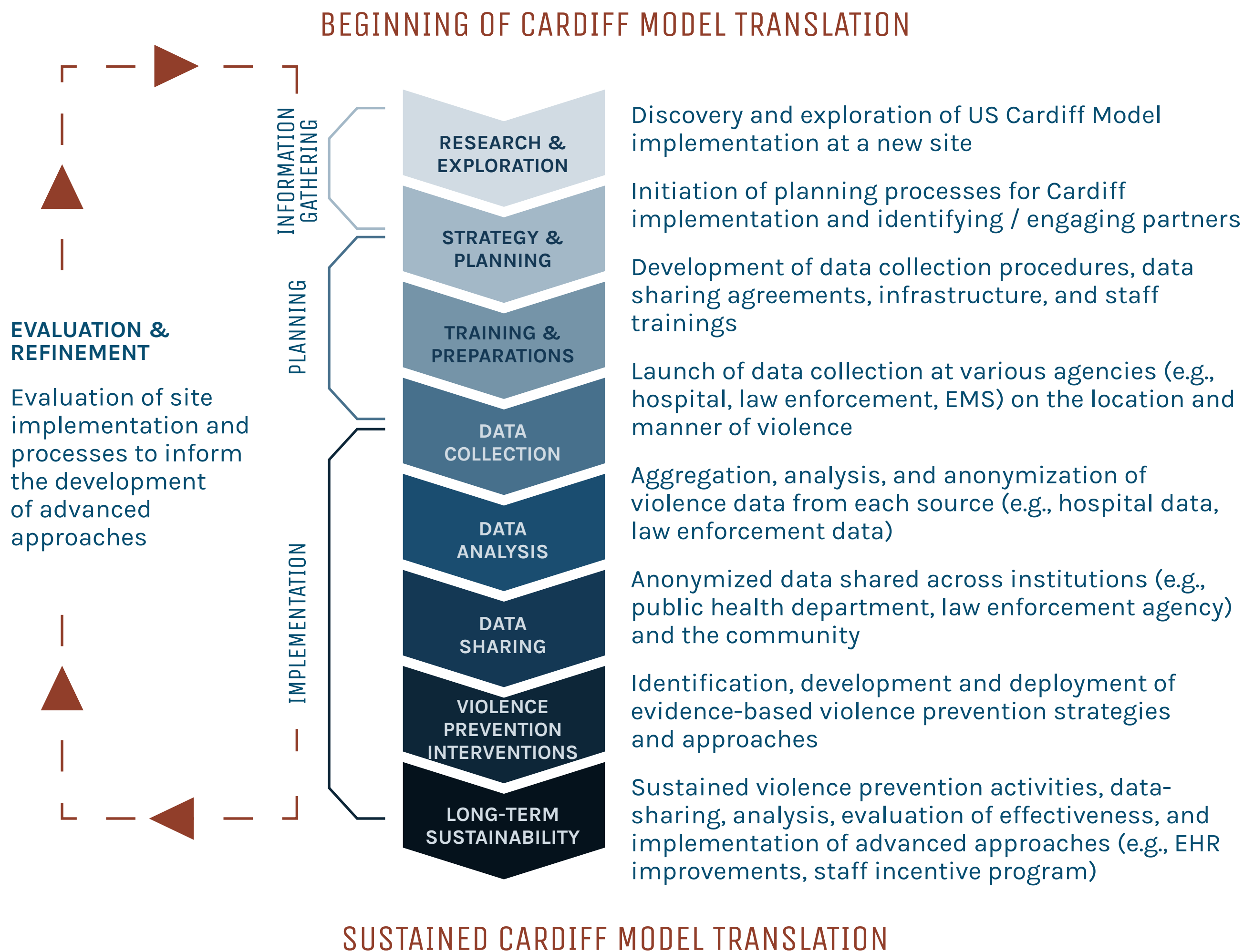
a. Create an evaluation plan. Step-by-step guidance can be found on CDC's VetoViolence webpage: EvaluACTION | VetoViolence (cdc.gov).

b. Regularly monitor and evaluate your Cardiff Model implementation, especially during the early stages, to determine program effectiveness.

c. Make appropriate changes to prevention or intervention programs based on monitoring and evaluation findings, as well as new Cardiff Model data. Refer to step 6e above for resources on evidence-based strategies to inform changes.

CARDIFF MODEL IMPLEMENTATION SPECTRUM

For interested partners, the Cardiff Model Implementation Spectrum below is intended to provide a high-level visual overview of what information-gathering, planning, and implementation of the Cardiff Model can entail. The components of the spectrum are intended to be iterative and overlapping, and the spectrum is not intended to be prescriptive.



EXTERNAL COMMUNICATIONS AND MEDIA RELATIONS

The greatest benefit to implementing a Cardiff Model communications plan is to ensure transparency and trust with local communities. The Cardiff Model is intended to benefit the community. The CSP should designate a centralized point of contact to serve as the lead on all communications and media. This person should:

- Take the lead on developing a communications and media strategy for the CSP,
- Draft communications materials,
- Provide expert guidance on strategic communications and develop decision-making processes for reviewing communications materials under consideration by CSP members, and
- Coordinate with media relations staff who serve within the collaborating members' individual organizations, as needed.

Planning for communications and media should be done collectively and in tandem with all other project planning, and may include some or all of the following activities:

- **Communications strategy and plan**
- **Media outreach and strategy**
- **Goals and SMART objectives**
- **Audience analysis**
- **Communication channel selection**
- **Communication evaluation**
- **Budget**: Financial resources, human resources, and in-kind resources
- **Products and Activities**: A work plan, including a timeline, is recommended to streamline needed inputs and desired outputs, roles and responsibilities, monitoring and evaluation

SMART OBJECTIVES ARE:

SPECIFIC
Concrete, detailed, and well defined so that you know where you are going and what to expect when you arrive

MEASURABLE
Numbers and quantities provide means of measurement and comparison

ACHIEVABLE
Feasible and easy to put into action

REALISTIC
Considers constraints such as resources, personnel, cost, and time frame

TIME-BOUND
A time frame helps to set boundaries around the objective

MEDIA ENGAGEMENT AND STRATEGY DEVELOPMENT

Information about the project should be prepared by a media lead from at least one of the partners in the CSP, regardless of whether the CSP intends to engage the media. The information should include the development of talking points about the project (frequently asked questions, history of the Cardiff Model, information about the local CSP), a general timeline for project implementation, a list of the organizations that are collaborating, and other relevant public information. Collaborators will need to review and approve all documents prior to dissemination.

TWO-PAGER ABOUT THE CARDIFF MODEL NATIONAL NETWORK

The two-pager below is intended to provide interested partners brief, introductory information to both the Cardiff Model National Network and context on the Cardiff Model itself. A standalone PDF version of the document is available on the National Network's website.

The Cardiff Model for Violence Prevention National Network

Published 2024

What is the Cardiff Model for Violence Prevention National Network?

The Cardiff Model for Violence Prevention National Network (the "National Network") is a hub for resources, support, and networking for groups and individuals interested in implementing the Cardiff Model for Violence Prevention (the "Cardiff Model") in the U.S.

The National Network convenes every other month and provides a space for participants to share updates regarding their local Cardiff Model planning and implementation, present research findings, attend trainings, discuss innovative strategies and tools, and announce funding opportunities. National Network participants are at various stages in their Cardiff Model implementation in the U.S.

The National Network also offers technical assistance (TA) to groups or individuals interested in or already implementing the Cardiff Model. Please contact us-cardiff-ta@gaggle.email to request TA and connect with a subject matter expert from the National Network.

This map highlights the locations of National Network participants who are engaged in the National Network and Cardiff Model implementation to varying degrees. Should you wish to connect with a participating organization or individual, please contact the National Network at us-cardiff-ta@gaggle.email for assistance.

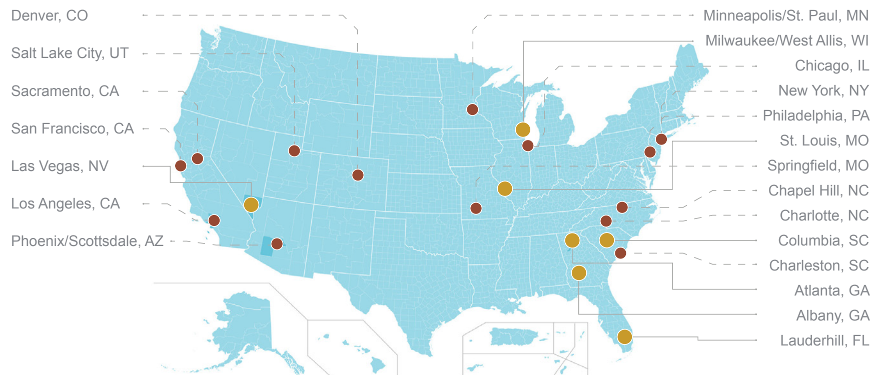


Figure A. Map of Cardiff Model National Network participants
● Indicates the locations of the most actively engaged National Network participants
● Indicates the locations of participants who have engaged with the National Network but are not currently active
(n=21) (2024)

Learn More and Join Us

The Cardiff Model for Violence Prevention National Network is a volunteer-led group that requires no fee to join.

To learn more about the National Network, access resources, and how to join upcoming meetings, reach us at us-cardiff-ta@gaggle.email. Please include your contact information, location, and current state of planning or implementation (if applicable). We look forward to hearing from you!

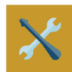
Why Join the Cardiff Model National Network?

Networking Opportunities

Resource Repository

Peer-to-Peer Support

Network Newsletter

 Training and Technical Assistance

Mailing List

What is the Cardiff Model for Violence Prevention?

More than half of violent crimes in the U.S. are not reported to law enforcement. That means cities and communities may not fully understand where and how frequently violence occurs, which limits their ability to develop effective solutions.

Initially developed and implemented in Cardiff, Wales, the Cardiff Model for Violence Prevention is a multi-agency, public health approach to violence prevention. The Model combines and maps violent injury data from hospitals, emergency medical services, and law enforcement to assist people and agencies in preventing violence in their communities. This method of sharing and mapping data helps communities more effectively identify where violence frequently occurs. More than just an approach to map violence, the Cardiff Model also provides a straightforward framework for sustained partnership between hospitals, law enforcements agencies, public health agencies, community groups, and others to develop, deliver, and monitor collaborative, place-based violence prevention strategies. In Cardiff, Wales, the Cardiff Model has proven effective in reducing hospital admissions for violent injuries.

For more information on the Cardiff Model, please see CDC's Cardiff Model Toolkit.

58% Violent Crimes Not Reported

In 2022, the U.S. Department of Justice found that 58% of violent victimizations were not reported to law enforcement. For adolescents (ages 12-17), this figure was even higher, at 69%.
Bureau of Justice Statistics, 2022

Up to 93% Disparity in Reporting

In two police jurisdictions in the Atlanta, GA area, 93% and 83% of violent injuries seen in the emergency room were not known to law enforcement.
Wu et al., 2019

42% Reduction in Injury

Cardiff, Wales saw a 42% reduction in hospital admissions for violent injuries in the full implementation of the Model.
Florence et al., 2011

READINESS CHECKLIST

The following pages include a list of key steps and a checklist to determine the community's readiness to adopt the Cardiff Model. The organization leading the CSP can vary (e.g., law enforcement, hospital, university, health department). It is critical to have an individual within the organization who can assume a leadership role in convening and organizing the group.

For each topic, a task is outlined along with identifying the readiness level. There is space to write in next steps and identify a target completion date. This Readiness Checklist is intended to identify high-level tasks and establish due dates. Please note that each task may have several sub-tasks that must be completed to achieve the task listed on this checklist, and note that this list is not exhaustive. For example, under "Establish a CSP," this task may include (1) reaching out to area partners (area hospitals, area law enforcement agencies), (2) convening a conference call or in-person meeting to discuss the Cardiff Model and forming a CSP, and (3) talking internally within each organization to ensure that each organization is interested in joining the CSP and engaging in local violence prevention activities.

TOPIC: COMMUNITY SAFETY PARTNERSHIP READINESS

TASK	READINESS LEVEL	NEXT STEPS	TARGET COMPLETION DATE
Establish a **CSP**. Key partners must include law enforcement, public health departments, and hospital(s), and other key partners may include other government agencies, universities, and other local community organizations.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Establish where, when, and how often the CSP will meet.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Determine the **most useful violence data to be collected**. Critical information includes: time, date, weapon used, and location of violent injury; other data may also be useful to address specific needs, though the Cardiff Model's evidence base has only been established for the collection of violent injury data.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Identify a process for data sharing, analysis, and mapping, which may include: • Combining violence data collected in hospitals with law enforcement data* • Creating maps with hospital violence data and law enforcement violence data • Sharing maps with the CSP and the broader community	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		

TOPIC: HOSPITAL READINESS

TASK	READINESS LEVEL	NEXT STEPS	TARGET COMPLETION DATE
Work with hospital leadership to obtain buy-in and support, especially among these groups: • Emergency Department – Physicians • Emergency Department – Nurses • Trauma Department (if applicable)	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Determine who is able to regularly attend CSP meetings as a hospital representative (may be more than one individual).	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Establish process with appropriate hospital staff to determine ability to integrate Cardiff Model violence data into the electronic health record (EHR) or planned record-keeping system.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Work with hospital departments to (1) integrate the violence data collection fields into the EHR/record-keeping system, (2) identify and train appropriate hospital staff to collect violence data or develop tools and a protocol for self-reporting, (3) extract violence data at regular intervals established by the CSP, and (4) share data with the CSP, which will combine data and create maps.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Develop a communication plan for the hospital, which may include: • Identifying a communication lead • Developing internal communication materials • Developing external communication materials	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		

TOPIC: LAW ENFORCEMENT READINESS

TASK	READINESS LEVEL	NEXT STEPS	TARGET COMPLETION DATE
Work with law enforcement contacts to obtain buy-in, especially from: • Command Staff/Leadership • Analysts	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Determine who is able to regularly attend CSP meetings as a law enforcement representative (may be more than one individual).	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		

TOPIC: FINANCIAL, LEGAL, AND TECHNICAL READINESS

TASK	READINESS LEVEL	NEXT STEPS	TARGET COMPLETION DATE
Identify legal and regulatory considerations, including institutional review boards or institutional legal departments.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Determine how data are shared and kept secure*	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Determine costs and whether these can be supported internally or identify funding mechanisms.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		
Visit VetoViolence's EvaluACTION website and use the EvaluACTION Resource Checklist to understand, track, and implement all of the steps required to evaluate your Cardiff Model implementation.	☐ HAVE NOT STARTED ☐ IN PROGRESS ☐ COMPLETED		

* Sharing violence data from hospital records in accordance with the local legal and regulatory environment may require collaboration with the local or state public health department. See "Essential Element in Action: Engaging an Honest Data Broker."

APPENDIX: HOSPITAL DATA ON VIOLENCE-RELATED INJURIES: THE CARDIFF MODEL IN COMPARISON TO SYNDROMIC SURVEILLANCE

Syndromic surveillance provides public health officials with a timely system for detecting, understanding, and monitoring health events. By tracking symptoms and diagnoses of patients in emergency departments using EHR data in near real-time, public health agencies can detect unusual levels of illness or injury to determine whether a response is warranted. Syndromic surveillance also allows for monitoring trends in injury and violence, as well as a host of other communicable and chronic diseases. Syndromic surveillance data most applicable to Cardiff Model efforts are local syndromic surveillance data which states and local jurisdictions collect. These data can be accessed and examined via local and/or state health departments. Local and state health departments then submit these data to the National Syndromic Surveillance Program (NSSP) where it is integrated into the BioSense Platform for broader use.

WHAT IS THE NATIONAL SYNDROMIC SURVEILLANCE PROGRAM?

The National Syndromic Surveillance Program (NSSP), a collaboration among CDC, local and state health departments, collects, shares, and analyzes these automated electronic healthcare data in near-real time and has grown exponentially since it was first launched as BioSense in 2003.[19] The NSSP BioSense platform is a secure set of systems and software that store syndromic surveillance data and enable users to collect, evaluate, and share those data. Syndrome definitions are developed that include a combination of keywords from chief complaints and discharge diagnosis codes (i.e., International Classification of Diseases, Ninth/Tenth Revision, Clinical Modification and SNOMED CT) to identify violence-related emergency department visits. These syndrome definitions allow users to examine state and local trends, detect and monitor unusual levels that may warrant a response, and validate other data sources. The BioSense platform is updated daily, so past or current trends may be examined (e.g., emergency department visits that occurred yesterday are available).

† **For more information on CDC's NSSP and BioSense, visit CDC'S NSSP Web page.**

19. Gould, D. W., Walker, D., & Yoon, P. W. (2017). The Evolution of BioSense: Lessons Learned and Future Directions. Public Health Reports , 132(1_suppl), 7S-11S.

As both the Cardiff Model and syndromic surveillance expand, what factors should be considered when selecting one or both? Given that the two offer seemingly similar information, how would a site or jurisdiction determine which one best suits their needs, especially if resources are limited?

TABLE 1. DATA* COMPONENTS PROVIDED BY THE CARDIFF MODEL AND SYNDROMIC SURVEILLANCE

COMPONENT DESCRIPTION	THE CARDIFF MODEL	SYNDROMIC SURVEILLANCE
Provides near real-time data on injuries	x	x
Level of data: Patient-level**	x	
Level of data: Visit-level		x
Includes data from a violence screener	x	
Captures data from violence-related injuries	x	x
Includes geospatial data - address of the location where the injury occurred	x	
Includes information on date and time injury occurred	x	
Chief complaint terms that describe why the patient is seeking medical attention		x
Hospital discharge diagnosis codes, including ICD-9-CM, ICD-10-CM, or SNOMED CT		x
Discrete forms of violence can be identified	x	x
Data can be used to alert interested communities/cities about increases in violence	x	x
Actionable data: Can indicate if violence occurred and where it occurred; when combined with law enforcement data, can indicate if that violence was reported to police; can uncover hidden violence	x	
After data are deidentified, it is shared with a community safety partnership where decisions are made about how it should be used to inform violence prevention programs and strategies	x	
Fulfills criteria for Level I Trauma designation	x	
Data can be used to inform violence prevention efforts	x	x

* Data described in this table refer to emergency department data. The Cardiff Model overlays law enforcement data with emergency department data, but law enforcement data components are not included in the comparison.
**These data are collected at the patient-level, but data analysts can aggregate data at the community-level to share with members of the community safety partnership and the public.

ADDITIONAL CONSIDERATIONS AND LIMITATIONS OF SYNDROMIC SURVEILLANCE AND THE CARDIFF MODEL

It is worth noting that the different forms of emergency department data may provide different levels of sensitivity and specificity and may vary based on the specific form of violence examined. Each data component has its strengths and weaknesses. For example, there are many documented challenges with ICD-CM codes, particularly with intentional violence-related injuries (Clery et al., 2021). The ICD-CM codes captured in a patient visit are dependent on multiple factors including who is entering the code (e.g., physician treating the patient, nurse, hospital coder, etc.), at what point in the patient encounter codes are entered, and whether codes are updated once the patient visit is complete. Overall, the National Syndromic Surveillance Program has developed a strong infrastructure since implementation in 2003, and as of 2024, the system covers 80% of emergency departments across the United States.[20] The Cardiff Model is still in its infancy, fully operating in only a handful of U.S. cities, but has the potential to make changes, adapt, and incorporate new ideas around monitoring violence before scaling up to additional cities in the U.S.

The Cardiff Model uniquely connects law enforcement, healthcare, public health, and the community; moreover, it aids in elevating violence prevention at a local-level, building cross-sectoral relationships, and increasing capacity for violence prevention. A community that chooses to implement the Cardiff Model has an inherent desire to use the data in an actionable way to address community violence prevention needs. Conversely, there is no commitment required for a jurisdiction participating in syndromic surveillance to examine the data, share the findings with law enforcement, the community, and other sectors, or use the data to inform prevention efforts. The intent of syndromic surveillance is to serve as an early warning system for public health concerns and allow for mobilization of a rapid response. The overall goal of both systems is to reduce morbidity and mortality.

The Cardiff Model and syndromic surveillance are unique systems but are complementary in many ways. The two sources of data are not mutually exclusive and may fill gaps in the opposing system. While it may be tempting to make determinations about which system is preferred, instead interested hospitals/cities/jurisdictions/states should carefully consider their intended goals and select the appropriate system(s). Both systems speak to an important aspect of public health which is ensuring surveillance data will be used to effectively create and deploy local resources for public health prevention.

20. National Syndromic Surveillance Program. (2024). U.S. Centers for Disease Control and Prevention, Office of Public Health Data, Surveillance, and Technology.

HIGHLIGHTED CARDIFF MODEL RESOURCES, PRESENTATIONS, REPORTS, AND MANUSCRIPTS

FOR THE MOST UP-TO-DATE COMPILATION OF HIGHLIGHTED CARDIFF MODEL RESOURCES, VISIT THE CARDIFF MODEL NATIONAL NETWORK'S WEBSITE.

PRIMARY GEOGRAPHIC AFFILIATION	RESOURCE TYPE	YEAR *IF AVAILABLE*	AUTHOR(S) *IF AVAILABLE*	TITLE	FULL CITATION *APA FORMAT*
Atlanta, GA Metropolitan area	Journal Article	2021	Clery et al.	Exploring injury intentionality and mechanism via ICD-10-CM injury codes and self-reported injury in a large, urban emergency department	Clery, M. J., Hudson, P. J., Moore, J. C., Kollar, L. M. M., & Wu, D. T. (2021). Exploring injury intentionality and mechanism via ICD-10-CM injury codes and self-reported injury in a large, urban emergency department. Injury Prevention, 27(Suppl 1), i62–i65.
Atlanta, GA Metropolitan area	Journal Article	2020	Kollar et al.	Building Capacity for Injury Prevention: A Process Evaluation of a Replication of the Cardiff Violence Prevention Program in the Southeastern United States	Kollar, L. M. M., Sumner, S. A., Bartholow, B., Wu, D. T., Moore, J. C., Mays, E. W., & Shepherd, J. P. (2020). Building Capacity for Injury Prevention: A Process Evaluation of a Replication of the Cardiff Violence Prevention Program in the Southeastern United States. Injury prevention: journal of the International Society for Child and Adolescent Injury Prevention, 26(3), 221.
Atlanta, GA Metropolitan area	Journal Article	2019	Wu et al.	Proportion of Violent Injuries Unreported to Law Enforcement	Wu, D. T., Moore, J. C., Bowen, D. A., Mercer Kollar, L. M., Mays, E. W., Simon, T. R., & Sumner, S. A. (2019). Proportion of Violent Injuries Unreported to Law Enforcement. JAMA Internal Medicine, 179(1), 111–112.

PRIMARY GEOGRAPHIC AFFILIATION	RESOURCE TYPE	YEAR *IF AVAILABLE*	AUTHOR(S) *IF AVAILABLE*	TITLE	FULL CITATION *APA FORMAT*
Las Vegas, NV metropolitan area	Journal Article	2022	Soh et al.	Exploring injury intentionality and mechanism via ICD-10-CM injury codes and self-reported injury in a large, urban emergency department	VonPaays Soh, S., Herman, K. L., Papesh, C., Musgrove, T., & Zhang, Y. (2022). Identifying Locations of Violent Injuries in Las Vegas to Implement the Cardiff Violence Prevention Model. SMU Data Science Review, 6(1), 1.
Milwaukee and West Allis, WI	Journal Article	2023	Hernandez-Meier et al.	Linking emergency care and police department data to strengthen timely information on violence-related paediatric injuries	Jennifer Hernandez-Meier, Zengwang Xu, Sara A Kohlbeck, Michael Levas, Jonathan Shepherd, & Stephen Hargarten. (2023). Linking emergency care and police department data to strengthen timely information on violence-related paediatric injuries. Emergency Medicine Journal, 40(9), 653.
Milwaukee and West Allis, WI	Journal Article	2022	Nguyen et al.	Implementation and initial analysis of Cardiff Model data collection procedures in a level I trauma adult emergency department	Nguyen, P., Kohlbeck, S. A., Levas, M., & Hernandez-Meier, J. (2022). Implementation and initial analysis of Cardiff Model data collection procedures in a level I trauma adult emergency department. BMJ Open, 12(1), e052344.
Milwaukee and West Allis, WI	Journal Article	2022	Kohlbeck et al.	Implementing the Cardiff Model for violence prevention: Using the diffusion of innovation theory to understand facilitators and barriers to implementation	Kohlbeck, S., Levas, M., Hernandez-Meier, J., & Hargarten, S. (2022). Implementing the Cardiff Model for violence prevention: Using the diffusion of innovation theory to understand facilitators and barriers to implementation. Injury Prevention, 28(1), 49–53.

PRIMARY GEOGRAPHIC AFFILIATION	RESOURCE TYPE	YEAR *IF AVAILABLE*	AUTHOR(S) *IF AVAILABLE*	TITLE	FULL CITATION *APA FORMAT*
St. Louis, MO	Journal Article	2021	Dribben et al.	Improving Cardiff Model Data Collection in the Emergency Department	Dribben, S., Curtis, M. P., Foraker, R., Kush, C., & Trolard, A. (2021). Improving Cardiff Model Data Collection in the Emergency Department. CIN: Computers, Informatics, Nursing, 39(7), 341–344.
U.S.	Toolkit or Guidance	2022		Health Agency Implementation Guidance: Cardiff Model for Violence Prevention	Health Agency Implementation Guidance: Cardiff Model for Violence Prevention. (2022). Association of State and Territorial Health Officials (ASTHO).
U.S.	Webpage and video	2018	Rachna Chandora (CDC Foundation)	Cardiff Model Toolkit: Community Guidance for Violence Prevention	Chandora, R. (2018, November 13). Cardiff Model toolkit: Community guidance for violence prevention.
Cardiff, Wales, U.K.	Report	2023	Shepherd	The Cardiff Model for Violence Prevention	Shepherd, J. P. (2023). The Cardiff Model for Violence Prevention. Cardiff University.

PRIMARY GEOGRAPHIC AFFILIATION	RESOURCE TYPE	YEAR *IF AVAILABLE*	AUTHOR(S) *IF AVAILABLE*	TITLE	FULL CITATION *APA FORMAT*
Cardiff, Wales, U.K.	Report	2023	Shepherd	The Cardiff Model for Violence Prevention	Shepherd, J. P. (2023). The Cardiff Model for Violence Prevention. Cardiff University.
Cardiff, Wales, U.K.	Journal Article	2014	Florence et al.	An economic evaluation of anonymised information sharing in a partnership between health services, police and local government for preventing violence-related injury	Florence, C., Shepherd, J., Brennan, I., & Simon, T. R. (2014). An economic evaluation of anonymised information sharing in a partnership between health services, police and local government for preventing violence-related injury. Injury Prevention, 20(2), 108–114.
Cardiff, Wales, U.K	Journal Article	2001	Shepherd	Emergency medicine and police collaboration to prevent community violence	Shepherd, J. P. (2001). Emergency medicine and police collaboration to prevent community violence. Annals of Emergency Medicine, 38(4), 430–437.
Cardiff, Wales, U.K	Journal Article	2011	Florence et al.	Effectiveness of anonymised information sharing and use in health service, police, and local government partnership for preventing violence related injury: experimental study and time series analysis	Florence, C., Shepherd, J., Brennan, I., & Simon, T. (2011). Effectiveness of anonymised information sharing and use in health service, police, and local government partnership for preventing violence related injury: experimental study and time series analysis. BMJ (Clinical research ed.), 342, d3313.

LEARN MORE

about the Cardiff Model and how to start using it in your community's violence prevention efforts on CDC's Cardiff Model web page.