

A stylized map of Cardiff, Wales, with a light beige background and a dark blue border. The map features several clusters of colored dots: dark blue, yellow, and brown. The dots are scattered across the map, with some clusters of five or six dots and others of two or three dots. The map is framed by a dark blue border.

# CARDIFF MODEL TOOLKIT

COMMUNITY GUIDANCE FOR VIOLENCE PREVENTION



# CARDIFF MODEL TOOLKIT

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2018

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## THE CARDIFF MODEL FOR VIOLENCE PREVENTION TOOLKIT: AN INTRODUCTION

More than half 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 where violence occurs, which limits the ability to develop successful solutions.

The Cardiff Violence Prevention Model 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.

But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.

The toolkit includes a printable poster, infographic, and these guidance materials:

- [What Is the Cardiff Model?](#)
- [Hospital Guidance](#)
- [Law Enforcement Guidance](#)
- [Legal, Technical, and Financial Considerations](#)
- [Building Partnerships](#)
- [External Communications and Media Relations](#)
- [Readiness Checklist](#)

All materials are available for download at [www.cdc.gov/violenceprevention/fundedprograms/cardiffmodel](http://www.cdc.gov/violenceprevention/fundedprograms/cardiffmodel).

The Cardiff Model is a promising solution to prevent violence. We encourage you to use these materials to create a broad partnership to prevent violence in your community.

Sincerely,  
James A. Mercy, PhD  
Director

Division of Violence Prevention  
National Center for Injury Prevention and Control



# WHAT IS THE CARDIFF MODEL?

## WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

More than half 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 where violence occurs, which limits the ability to develop successful solutions.

**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.

## HOW DOES IT WORK?

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 policing and community violence prevention programs.<sup>1</sup> The basis of the model is information sharing. In healthcare settings, violence-related injury data including location, time, date, and mechanism of injury are collected. These data are combined with information from law enforcement to help communities map where violence frequently occurs. No other personal 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 where violence occurs in public spaces such as bars, street corners, or subway stations.

The Cardiff Model relies on sustained partnerships between healthcare, law enforcement, public health agencies, other government agencies, and community organizations. The partnership uses local data to create effective injury and violence prevention policy, educate community leaders about the need for changes in the places people work and live, and encourage business owners and residents to prevent violence by using evidence-based solutions.

## HOW WAS THIS MODEL DEVELOPED?

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 who were injured through violence in his hospital's emergency department. Through his research he discovered that only a fraction of these injuries treated in emergency departments were reported to law enforcement.<sup>2</sup>

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 interventions. By 1998, the Cardiff Model became the primary approach for violence prevention across the United Kingdom. The model has helped to facilitate solutions to violence such as changes in the environment of violent places (increased street lighting and the creation of more pedestrian-friendly streets), policy change (switch from glass to plastic barware in taverns), and promotion of stronger community partnerships (increased programs partnering with clergy to assist violence prevention).



## WHAT IS THE EVIDENCE THAT THE CARDIFF MODEL IS EFFECTIVE FOR VIOLENCE PREVENTION?

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 local police to improve their strategies to prevent street violence.<sup>3</sup> 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. 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 model saved over \$19 in criminal justice costs and nearly \$15 in health system costs for every \$1 spent.<sup>4</sup>



32% REDUCTION IN POLICE-RECORDED INJURIES

42% REDUCTION IN HOSPITAL ADMISSIONS FOR VIOLENCE-RELATED INJURIES

1. Shepherd (2001). *Annals of Emergency Medicine*, 38(4), 430-437. DOI: <http://dx.doi.org/10.1067/mem.2001.114317>
2. Shepherd (2000). *BMJ*, 321(7275): 1481-1482. DOI: <https://doi.org/10.1136/bmj.321.7275>
3. Florence et al. (2011). *British Medical Journal*, 342, d3313. DOI: <https://doi.org/10.1136/bmj.d3313>
4. Florence et al. (2014). *Injury Prevention*, 20(2), 108-114. DOI: <http://dx.doi.org/10.1136/injuryprev-2012-040622>



## HOSPITAL GUIDANCE

### WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

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**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.



## WHO COLLECTS THE INFORMATION?

Nurses may be in the best position to collect violence-related injury information when asking general screening questions during intake or registration. If the registration process is completed by a non-nurse, this staff member could also be considered to be the primary point of contact for data collection.

## WHAT SPECIFIC INFORMATION IS COLLECTED?

Hospital and healthcare personnel collect violence-related injury information\* that can be used to track local violence trends and develop prevention programs. This information includes:

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

## WHEN IS THE INFORMATION COLLECTED?

Violence-related injury information 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 to prevent any disruption in the workflow.

## WHERE IN THE HOSPITAL IS THE INFORMATION COLLECTED?

It is recommended that data be collected in the emergency department (ED), including the trauma bay if the hospital is a trauma center. If the hospital has a separate, on-site urgent care clinic and/or trauma unit, these intake points may also be used to collect injury information.

## HOW IS THE INFORMATION COLLECTED?

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

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\* Violence-related injury data from hospitals in combination with law enforcement records are used to map where violence occurs. The U.K. Cardiff Model collects intentional injuries only; in the U.S., unintentional and/or intentional (violent) injuries have been collected and shared with the community safety partnership. Each hospital and community can decide whether to focus on violence or injuries more broadly.



## HOW OFTEN DOES VIOLENCE INFORMATION GET SHARED?

Violence information can be shared on any mutually agreeable timeframe within the community safety partnership (CSP). Past partnerships have found monthly sharing to be useful, although more frequent sharing could occur.

## CHALLENGES OF USING ELECTRONIC MEDICAL RECORDS (EMRS) 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 an injury location, date and time, and the weapon used. The 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 EMR 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" document.



## KEY STEPS TO ESTABLISHING THE CARDIFF MODEL IN YOUR HOSPITAL:

### 1. BUILDING RELATIONSHIPS

- a. Establish a violence prevention partnership with local law enforcement, a public health agency, and other applicable partners
- b. Determine the most useful injury information for the local partnership to collect, with a focus on keeping information 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. It is best to focus on the information that is most critical.
- c. Gain hospital leadership (e.g. management and nursing) and 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 EMR
- b. Establish procedures for collecting injury information
- c. Train nurses and other staff to collect injury information
- 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 information outside of the hospital or healthcare system
- f. Establish procedures for extracting and sharing injury information
- 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 broader community board to review the maps on 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 model when starting a new Cardiff Model program.

FORMAT	DELIVERY METHOD	ADVANTAGES	CHALLENGES
Self-study	E-mail, online, paper	<b>Easy and does not require significant personnel time or effort</b> , can be integrated into standard staff training and education platforms	Difficult to evaluate the extent and efficacy of training process
Staff In-service	Large group instruction	<b>Face-to-face</b> , provides the opportunity to ask questions	Requires on-site trainer until all staff have completed training; in-services may be infrequent and slow the initiation of project activities; training may not reach new staff
Regular staff or shift change meeting	Small group instruction	<b>Face-to-face</b> , 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	<b>Face-to-face</b> , opportunity to ask questions, able to assess knowledge	Requires on-site trainer; resource intensive



## LAW ENFORCEMENT GUIDANCE

### WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

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**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.



## WHY IS HOSPITAL INJURY INFORMATION IMPORTANT FOR LAW ENFORCEMENT?

According to a 2016 U.S. Department of Justice report, many crimes go unreported to law enforcement, including:

- **53% of violent crime** in 2015.
- **58% of simple assaults** in 2015.
- **43% of violent crime involving an injury** in 2015.

Hospitals treat individuals who are injured in violence incidents. If the time, date, and location of 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. The Cardiff Model is not intended to be used to investigate individual cases but rather improve understanding of geographic patterns of violence in the community.

## HOW DOES LAW ENFORCEMENT PARTICIPATE IN THE CARDIFF MODEL?

Law enforcement and area hospitals form a local community safety partnership where data are shared. This information includes:

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

No other personal information (i.e., name, date of birth, social security number) is collected, shared, or used.

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

Through the community safety partnership (CSP), law enforcement works hand-in-hand with the hospital and public health agency partner (at a minimum) to identify potentially new and existing violent injury hotspots. After identifying injury hotspots, the CSP develops innovative ways to address the specific hotspot needs.

In addition, law enforcement has historical knowledge of what type of prevention programming and current efforts have been directed in these areas. These critical elements will help guide CSP efforts and complement (not duplicate or interfere with) previous or ongoing work. The new maps may also be used to guide ongoing law enforcement violence prevention activities and patrol patterns.

## HOW OFTEN DOES VIOLENCE INFORMATION GET SHARED?

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



### THE CARDIFF MODEL

## IN ACTION

For example, in Cardiff, Wales, United Kingdom, the Violence Prevention Board (local name of the CSP) identified many violent assaults occurring in particular streets in the city's main entertainment district. After investigating this area, the Board realized that these assaults were largely due to alcohol-intoxicated individuals bumping into each other on the sidewalks after a night of drinking, resulting in fights breaking out. This risk was made worse by such people rapidly becoming frustrated while 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, and appoint taxi marshals (capable guardians), which helped decrease violent assaults in the area.

## KEY STEPS TO STARTING THE CARDIFF MODEL IN MY LAW ENFORCEMENT AGENCY:

### 1. RELATIONSHIP BUILDING

- a. Establish a violence prevention partnership with the local hospital and public health agency
- b. In collaboration with hospital partner, determine most useful injury information to collect and map

### 2. LAW ENFORCEMENT AGENCY BUY-IN AND SUPPORT

- a. Obtain law enforcement leadership buy-in and support
- b. Obtain permissions for sharing crime incident data with partners
- c. Provide support as need to assist public health agency or relevant partner in producing hotspot maps

### 3. TRAINING AND TECHNICAL PROCESSES

- a. Identify a lead point of contact for collecting law enforcement data
- b. Establish procedures for sharing data and maps

### 4. INJURY INFORMATION AND MAP SHARING

- a. Establish procedures for sharing injury information and maps
- b. If necessary, develop and sign a shared data use agreement with the partners

### 5. COMMUNITY SAFETY PARTNERSHIP ACTIVITIES\*

- a. Work with hospital and other partners to establish a broader community board to review the maps on 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

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\* Please see the "Building Partnerships" document for more information on how injury information is used within the partnership, relationships are expanded, and violence prevention programs are implemented.

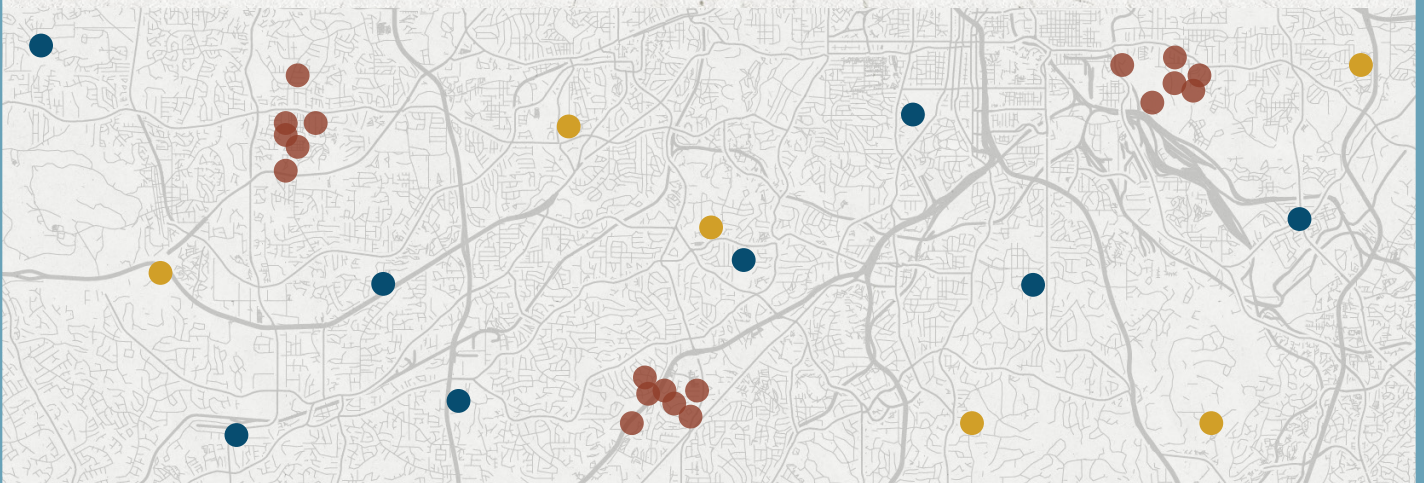


## LEGAL, TECHNICAL, AND FINANCIAL CONSIDERATIONS

### WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

More than half of violent crime (53%) in the United States (U.S.) is not reported to law enforcement according to the Department of Justice. Violence is a serious public health problem that affects people of all ages. This means that communities lack a complete understanding of where violence occurs and how to develop tailored programs for prevention.

**The Cardiff Violence Prevention Model** provides a way for communities to gain more information about where violence is occurring and how to prevent it by forming partnerships between hospitals, law enforcement, and others interested in violence prevention. These partnerships can help guide coordinated responses and violence prevention strategies.





Because the model requires that information about the context of violence-related injuries is shared, there are many legal, technical, and financial considerations that may be important in planning and maintaining a local community safety partnership. 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 the data elements collected and the partners involved in data sharing is likely to exist based on local prevention needs. The information below is intended to help clarify issues that are likely to arise about the HIPAA Privacy and Security Rules when the data sharing involves HIPAA "covered entities," such as hospitals or other health care providers, or their "business associates."<sup>2</sup>

## DATA SHARING MECHANISM AND HIPAA APPLICABILITY

### 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) mechanism of injury. Additional data elements may also be collected and shared based on the public health needs of the local partnership. 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.<sup>3</sup> We anticipate under this model that some health care providers 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 "[A]n 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."<sup>4</sup>

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 interventions for injury 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.<sup>5</sup> 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.<sup>6</sup>

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1. 45 C.F.R. § 160.102.

2. 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. See also <https://www.hhs.gov/hipaa/for-professionals/covered-entities/sample-business-associate-agreement-provisions/index.html>.

3. See 45 CFR § 160.103.

4. 45 CFR § 164.501

5. See 45 CFR § 512(b) and OCR's Public Health guidance, <https://www.hhs.gov/hipaa/for-professionals/special-topics/public-health/index.html>.

6. See 45 CFR § 164.502(b). If the disclosure is required by law, the HIPAA covered provider may disclose the amount of information required; if the disclosure is not required by law, the amount of information disclosed must be the minimum necessary to accomplish the public health purpose. HIPAA covered entities may rely on representations from public health officials that the amount of information requested is the minimum necessary. See <https://www.hhs.gov/hipaa/for-professionals/privacy/guidance/minimum-necessary-requirement/index.html>.

Public health agencies may join with other organizations to form initiatives or coalitions to achieve violence reduction, for example, by targeting interventions and resources to specific populations or geographic areas. In fact, standards<sup>7</sup> 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.<sup>8</sup>

Each local collaborative 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.<sup>9</sup> 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 public health partnership, 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, where applicable.

### **CARDIFF MODEL PARTNERSHIPS 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 collaboration. In these scenarios, hospitals, law enforcement agencies, and other municipal and community partners could seek to form partnerships; however, the nature and function of these partnerships 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.<sup>10</sup>

7. 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>.

8. See 45 CFR § 164.501, definition of Public health authority; and 45 CFR § 164.514(h), verification requirements.

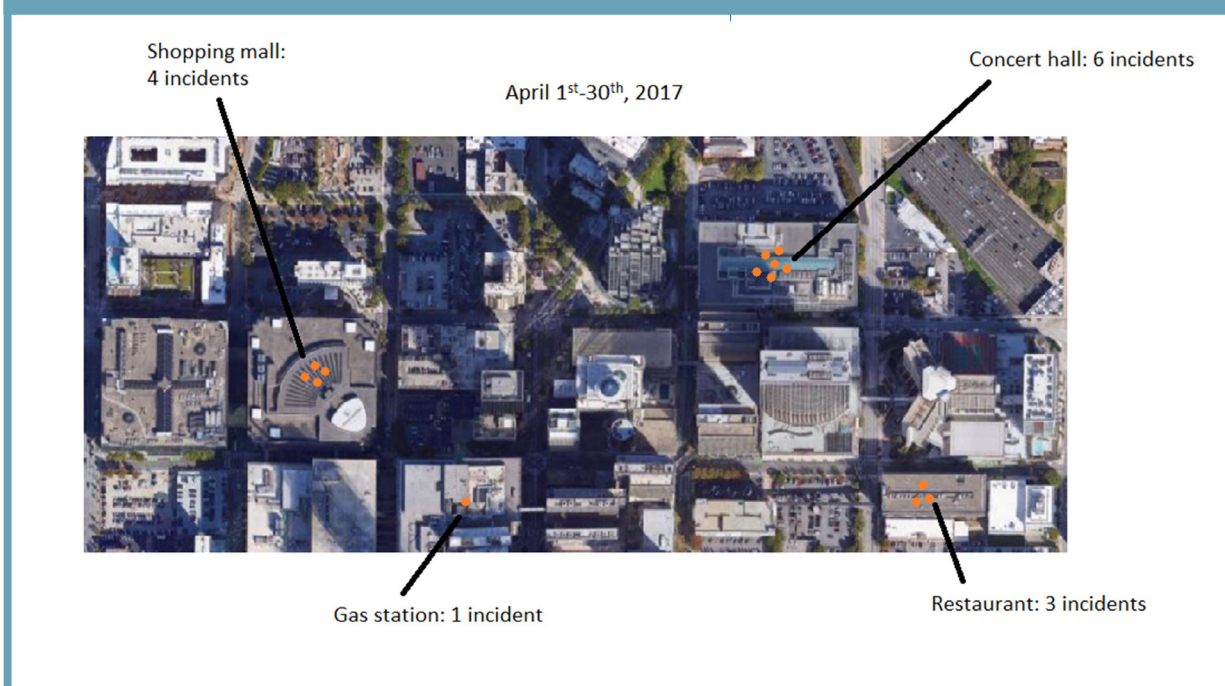
9. See 45 CFR § 164.502(e); 45 CFR § 504(e)

10. See 45 CFR § 164.502, 164.514(a) and (b), and 164.501 (definition of data aggregation).

## PUBLIC PRESENTATION OF INFORMATION FROM CARDIFF MODEL PARTNERSHIPS

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 partnerships 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 MAP OF INCIDENTS COLLECTED BY EMERGENCY DEPARTMENT



## 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.

11. See 45 CFR § 164.502(b).

### COLLECTING INFORMATION

Collecting injury information can be accomplished through separate data forms or integrated into a hospital's existing electronic medical record (EMR) system. Integration of injury information into the EMR is the most efficient process for collecting and extracting data.

### CLEANING INFORMATION

Once collected, injury information needs to be retrieved from the EMR and/or organized. Before a HIPAA covered entity can share this information, it needs to be reviewed and cleaned to ensure it does not contain more than the necessary data elements for the purposes of the project (most patient identifiable information will be excluded)<sup>11</sup> and that the information is entered in the correct data fields. This is also a good time to consider how to benchmark the extent and quality of the information that is collected.

### SHARING INFORMATION

The technical requirements for sharing information will depend on the data sharing agreement established by the local partnership. 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.

## 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. Cost-benefit analyses reveal that the model saves approximately **\$25 in criminal justice costs and \$19 in health system costs for every \$1 spent**.<sup>13</sup> Potential costs to bear in mind include:

### MAPPING

Mapping areas of violence (known as "hotspots" by law enforcement) can be accomplished by using a range of technologies. Partnerships 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 INFORMATION

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.<sup>12</sup> 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 injury information collected from the health system and law enforcement agencies is as accurate and complete as possible, and to monitor the changes that occur as the program progresses.

12. 45 CFR § 164.302.

13. 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

**PERSONNEL**

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

- Develop and sustain the community safety partnership
- Refine the information collection system (e.g., hospital IT staff time if integrated into an electronic medical record)
- 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 interventions
- Write and apply for grants

**HARDWARE AND SOFTWARE**

Will there be additional costs to:

- Collect, store, and manage violence-related injury information data
- Program data collection fields into an electronic medical record or other parallel database
- Create and maintain a process for data to be secured and securely shared
  - » Manual
  - » Automated
- Procure mapping software

**PARTNERSHIP FACILITATION**

Who pays and what will be the costs for:

- Partnership meetings
- Partnership materials (i.e. program promotion, local branding)
- 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?*



## BUILDING PARTNERSHIPS

### WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

More than half 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 where violence occurs, which limits the ability to develop successful solutions.

**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.



## WHO NEEDS TO PARTICIPATE IN THE CARDIFF MODEL TO CREATE A COMMUNITY SAFETY PARTNERSHIP (CSP)?\*

Strong Cardiff Model Community Safety Partnerships 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 to partner 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).

Partnership members are best guided by which locations the hospital and law enforcement maps reveal as areas of the greatest violence and partnering with agencies or organizations that serve those areas. Cardiff Model Potential Partnership Members may include:

- **Hospitals**
- **Law Enforcement Agencies**
- **Public Health Department**
- **City Planning/Zoning Officials**
- **Mayor's Office**
- **Faith Based Organizations**
- **Business Associations**
- **Other Community Organizations**

## 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<sup>†</sup> encourages violence prevention at a population level to provide data and interventions with the maximum benefit for the largest number of people.

For example, in Cardiff, Wales, United Kingdom, the Violence Prevention Board (local name of the CSP) identified many violent assaults occurring in particular streets in the city's main entertainment district. After investigating, the Board realized these assaults were largely due to alcohol-intoxicated individuals bumping into each other on the sidewalks after a night of drinking, resulting in fights. This risk was made worse by people becoming frustrated while waiting to be served at fast food outlets and for taxis. The Board worked with the city to make streets more pedestrian friendly, move taxi stands, and appoint taxi marshals (capable guardians), which helped decrease violent assaults in the area.

\* "Community Safety Partnership" is not intended to be prescriptive; local communities are encouraged to adopt a name, if they so choose, to represent their local collaboration.

† For more information about the public health approach please visit <https://www.cdc.gov/violenceprevention/overview/publichealthapproach.html>

## KEY STEPS TO STARTING THE CARDIFF MODEL CSP IN MY COMMUNITY:

### 1. RELATIONSHIP BUILDING

- a. Establish a CSP between law enforcement and local hospitals and a public health agency
- b. Determine the most useful injury information (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 information, 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 phone 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 "HOSPITAL GUIDANCE" FACT SHEET)

- a. Obtain hospital (emergency department/trauma) leadership buy-in and support
- b. Obtain permissions for collecting and sharing injury information
- c. Navigate HIPAA and privacy rules (see "Legal, Technical, and Financial Considerations" fact sheet)

### 3. LAW ENFORCEMENT BUY-IN AND SUPPORT (SEE "LAW ENFORCEMENT GUIDANCE" FACT SHEET)

- a. Obtain law enforcement leadership buy-in and support
- b. Obtain permissions for sharing law enforcement data with mapping partner

### 4. TRAINING AND TECHNICAL PROCESSES

- a. Identify, establish procedures, and train hospital staff to collect violence information
- b. Identify partner performing the mapping of combined data (likely public health agency) and establish technical procedures

### 5. VIOLENCE INFORMATION 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

### 6. INJURY PREVENTION INTERVENTION IDENTIFICATION, PLANNING, AND EXECUTION

- a. Review hospital violence and law enforcement information combined maps identifying areas of violence
- b. Identify an area or areas that the CSP would like to examine more closely to plan violence prevention activities
- c. Examine the types of violence occurring in the areas 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 interventions
  - CDC's Division of Violence Prevention has several technical packages on different topics (e.g. Child Abuse and Neglect, Sexual Violence, Youth 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/violenceprevention/pub/technical-packages.html>
- f. The partnership 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. Cardiff Model interventions have included strategies at multiple levels:
  - 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, increasing police patrols in high-violence areas, and creating more pedestrian-friendly streets
  - Individuals: Developing programs where "capable guardians," such as clergy, assist at-risk individuals



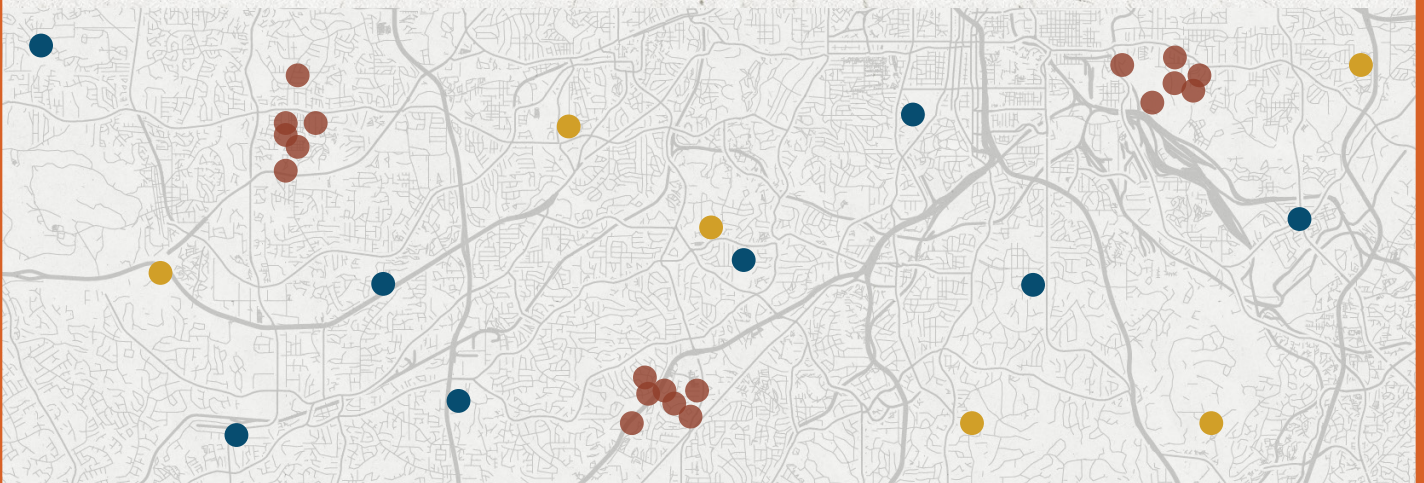


# EXTERNAL COMMUNICATIONS AND MEDIA RELATIONS

## WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

More than half 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 where violence occurs, which limits the ability to develop successful solutions.

**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.



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 Community Safety Partnership (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 partnership,
- 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 & Plan**
- **Goals and SMART Objectives**
- **Audience Analysis**
- **Risk Communication Plan**
- **Communication Channels**
- **Budget:** Financial resources, human resources, and in-kind resources
- **Products and Activities:** A work plan, including a time-line, is recommended to streamline needed inputs and desired outputs, roles and responsibilities, monitoring and evaluation

## MEDIA ENGAGEMENT AND STRATEGY DEVELOPMENT

Information about the project should be prepared by the media lead 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 collaboration), a general timeline for project implementation, a list of the organizations that are collaborating together and other relevant public information. Collaborators will need to review and approve all documents prior to dissemination.

## 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

## SAMPLE: CARDIFF MODEL PRESS RELEASE

**JANUARY 18, 2017** – Violence is a serious public health problem that affects people of all ages, but according to the U.S. Department of Justice, **more than half of violent crime (53 percent) in the United States is unreported to law enforcement.** Therefore, communities lack a complete understanding of where violence occurs and how to develop tailored prevention programs. The Cardiff Violence Prevention Model (Cardiff Model), developed by surgeon and Professor Jonathan Shepherd, M.D., of Cardiff University in the United Kingdom, provides a way for communities to gain more complete information as to where violence occurs and how to prevent it by forming partnerships between hospitals and law enforcement and others interested in violence prevention. Grady Memorial Hospital and DeKalb County Police Department have created a local Cardiff Model partnership.

The partnership, known locally as the United States Injury Prevention Partnership or USIPP, has worked since June 2015 to collect anonymous information on the location and timing of violent events and use that information with existing law enforcement records to create local maps of where violence occurs. Local maps have identified that the southern region of DeKalb County has a higher number of assaults and crimes than other areas of DeKalb County. This information and predictive analysis enhances law enforcement efforts and helps guide environmental improvements that can reduce crime, such as building repairs, safety improvements, and other USIPP-led ideas. Currently, USIPP is partnering with DeKalb Police Department's South Precinct and business group to develop public health strategies and environmental approaches to address violence and crime in the area.

The DeKalb County Police Department works with area businesses to improve public safety and seek new opportunities to prevent crime in DeKalb County. **"We welcome community involvement and partnerships to enhance**

**the quality of life for the residents of DeKalb County,"** said DeKalb County Police Chief J.W. Conroy. **"We are always looking for new and innovative ways to identify and reduce crime."** USIPP's support and community engagement have strengthened the interest of businesses to prevent crime by improving their properties using evidence-based environmental approaches such as property beautification and increased security measures.

Daniel Wu, M.D., associate professor of emergency medicine at Emory School of Medicine, says, **"The opportunity to work with DeKalb County Police Department allows the hospital [Grady Memorial Hospital] to prevent violence before it enters our doors. We are committed to improving the health of our communities by making them safer through innovative programs like the Cardiff Model and partnerships like ours with DeKalb County Police Department."**

USIPP also has been working closely with the Centers for Disease Control and Prevention's (CDC) Division of Violence Prevention, which has provided technical assistance and support for adapting the Cardiff Model to the United States and selecting public health approaches for violence prevention.

Preventing violence and making communities safer are key USIPP goals. DeKalb County Police Department and Grady Memorial Hospital hope to engage with more community groups, public health agencies, local governments, and others interested in violence prevention to scale up and sustain implementation of the Cardiff Model in the Atlanta metropolitan area. South DeKalb County businesses interested in learning more about how the local Cardiff model partnership could benefit their business and communities are welcome to attend the next business group meeting, scheduled for **Feb. 22, 2017, from 10:00-11:00a.m. ET at South DeKalb County Police Precinct, 2842 H F Shepard Drive, Decatur, GA 30024.**



# READINESS CHECKLIST

## WHAT IS THE CARDIFF VIOLENCE PREVENTION MODEL?

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**The Cardiff Violence Prevention Model** 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. But more than just an approach to map and understand violence, the Cardiff Model provides a straightforward framework for hospitals, law enforcement agencies, public health agencies, community groups, and others interested in violence prevention to work together and develop collaborative violence prevention strategies.

Below are a list of key steps and a checklist to determine the community's readiness to adopt the Cardiff Model. The organization leading the Community Safety Partnership (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 below, 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
<p>Establish a <b>Community Safety Partnership</b> (CSP). Key partners should include law enforcement, a public health agency, and hospital(s), and other key partners may include other government agencies, universities, and other local community organizations</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> HAVE NOT STARTED</li> <li><input type="checkbox"/> IN PROGRESS</li> <li><input type="checkbox"/> COMPLETED</li> </ul>		
<p>Establish where, when, and how often the CSP will meet</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> HAVE NOT STARTED</li> <li><input type="checkbox"/> IN PROGRESS</li> <li><input type="checkbox"/> COMPLETED</li> </ul>		
<p>Determine <b>most useful violence information to be collected</b>. Critical information includes: time, date, weapon used, and location of injury; other information may also be useful to address specific needs</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> HAVE NOT STARTED</li> <li><input type="checkbox"/> IN PROGRESS</li> <li><input type="checkbox"/> COMPLETED</li> </ul>		

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: <ul style="list-style-type: none"> <li>• Emergency Department - Physicians</li> <li>• Emergency Department - Nurses</li> <li>• Trauma Department (if applicable)</li> </ul>	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Determine who is able to regularly attend CSP meetings as a hospital representative (may be more than one individual)	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Establish process with appropriate hospital staff to determine ability to integrate Cardiff Model injury information into the electronic medical record (EMR) or planned record-keeping system	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Work with hospital departments to (1) integrate the injury information data collection fields into the EMR/record-keeping system, (2) identify and train appropriate hospital staff to collect violence information (e.g. nurses, registrars), and (3) extract violence information at regular intervals - established by the partnership - and share with an appropriate partner so they can combine data and create maps to share with the community safety partnership	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Develop a communication plan for the hospital, which may include: <ul style="list-style-type: none"> <li>• identifying a communication lead</li> <li>• developing internal communication materials</li> <li>• developing external communication materials</li> </ul>	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		

TOPIC: LAW ENFORCEMENT READINESS

TASK	READINESS LEVEL	NEXT STEPS	TARGET COMPLETION DATE
Work with law enforcement contacts to obtain buy-in, especially from: <ul style="list-style-type: none"> <li>• Command Staff/Leadership</li> <li>• Analysts</li> </ul>	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Determine who is able to regularly attend (CSP) meetings as a law enforcement representative (may be more than one individual)	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Identify a process for information sharing and mapping, this may include: <ul style="list-style-type: none"> <li>• Receiving hospital violence information</li> <li>• Combining violence information with law enforcement records</li> <li>• Creating maps with hospital violence information and law enforcement records</li> <li>• Sharing maps with the CSP</li> </ul>	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> 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	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Determine how data are shared and kept secure (see note)	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		
Determine costs and whether these can be supported internally or identify funding mechanisms	<input type="checkbox"/> HAVE NOT STARTED <input type="checkbox"/> IN PROGRESS <input type="checkbox"/> COMPLETED		

**NOTE:** Sharing injury information from hospital records in accordance with the local legal and regulatory environment may require collaboration with the local or state public health department.

LEARN MORE

about the Cardiff Model and how to start using it in your community's violence prevention efforts at [www.cdc.gov/violenceprevention/fundedprograms/cardiffmodel](http://www.cdc.gov/violenceprevention/fundedprograms/cardiffmodel)

This material was developed by the Centers for Disease Control and Prevention (CDC). The pilot of the Cardiff Violence Prevention Model was a collaboration between the CDC, DeKalb County Police Department, Grady Health System, the University of Pennsylvania, and the CDC Foundation. Support for this pilot was provided by the Robert Wood Johnson Foundation.

