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Effective Trauma Center Partnerships to Address Firearm Injury: A New Paradigm

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Abstract

Background: Firearm violence is the second leading cause of injury-related death. This study examined the use of local trauma centers as lead organizations in their communities to address firearm injury.

Methods: Three trauma centers in cities with populations less than 100,000 were linked with a university-based firearm injury research center. A trauma surgeon director and coordinator partnered with communities, recruited and directed advisory boards, established a local firearm injury surveillance system, and informed communities using community-specific profiles. Primary process and outcome measures included completeness of data, development of community-specific profiles, number of data-driven consumer media pieces, number of meetings to inform policy makers, and an analysis of problems encountered.

Results: Local trauma centers in smaller communities implemented a firearm injury surveillance system, produced community-specific injury profiles, and engaged community leaders and policy makers to address firearm injury. Community-specific profiles demonstrated consistent firearm suicide rates (6.58–6.82 per 100,000) but variation in firearm homicide rates (1.08–12.5 per 100,000) across sites. There were 63 data-driven media pieces and 18 forums to inform community leaders and policy makers. Completeness of data elements ranged from 57.1% to 100%. Problems experienced were disconnected data sources, multiple data owners, potential for political fallout, limited trauma center data, skills sets of medical professionals, and sustainability.

Conclusion: Trauma centers, when provided resources and support, with the model described, can function as lead organizations in partnering with the community to acquire and use community-specific data for local firearm injury prevention.

Keywords

Trauma center, Firearm injury, Surveillance, Community action, Injury prevention

Disciplines

Community Health and Preventive Medicine | Critical Care Nursing | Medicine and Health Sciences | Nursing

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Background: Firearm violence is the second leading cause of injury-related death. This case study examined the use of local trauma centers as lead organizations in their communities to address firearm injury.

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Firearm injury is the second leading cause of injury-related death, with a substantial national impact of 28,663 U.S. fatalities in 2000.¹ Although firearm injury is preventable,² minimal progress has been made in the study of firearm injury at the community level. This has occurred for several possible reasons: the highly politicized dialogue over gun rights;³ the lack of comprehensive data sources at national, state, and local levels;⁴ and the emphasis on firearm homicide, resulting in predominately urban, criminal justice approaches to preventing firearm injury in general.^{5,6}

The dialogue about guns in America is polarized and politically-charged, making scientific approaches to reducing firearm injury complicated. Inadequate data are one reason. Firearm injury surveillance lags behind the well-established data systems applied to motor vehicle crashes.⁷ Even though many national data systems compile information on firearm morbidity, mortality, and risk factors,⁴ they are incomplete with respect to shooting circumstances and the firearms themselves. The lack of a coordinated approach among these national data sets impedes the ability to provide data-driven information to individual communities and the development of data-driven interventions to reduce firearm injury.

Firearm violence is not restricted to urban areas and no community or trauma center is untouched by firearm injury.⁸⁻¹⁰ Trauma centers have been called the “motor end plate of violence,”¹¹ and it was in trauma centers located in smaller communities that surgeons became aware of an increasing trend of firearm injury in the early 1990’s. The growing problem of firearm injury in smaller communities and the fact that trauma centers located in non-urban areas were well-positioned to address firearm injury locally represented a potential resource in the community. In fact, designation and accreditation guidelines¹² require trauma centers to lead injury prevention activities, inform and collaborate with their communities, and monitor the effect of prevention programs. However, recent surveys demonstrate that physicians and surgeons recognize firearm

injury as an important public health issue, yet lack the necessary knowledge to intervene.¹³⁻¹⁸ There is a disconnect among commitment, knowledge and behavior, indicating that trauma center professionals need support to assume leadership in this area.

We undertook this project because of the magnitude and universality of firearm violence, and the call by the public health profession to focus on it as a health problem.¹⁹⁻²¹ We examined the effectiveness of implementing a new model using local trauma centers as lead organizations in their communities to study firearm injury. Our aims were to: 1) determine if trauma centers in smaller communities could function as lead organizations in acquiring community-specific firearm injury information; 2) evaluate if trauma center professionals could, in partnership with community leaders, frame firearm violence as a public health problem specific to their community; and 3) identify challenges specific to establishing a firearm injury prevention center in trauma centers located in smaller communities.

Material & Methods

This case study was designed to examine the implementation of a model using local trauma centers to study firearm injury and to determine if community-specific profiles could inform their communities. All work was approved by the relevant human subjects boards. This project drew conceptually on the World Health Organization's Safe Communities model, which advocates the value of building on structures and organizations that already exist in local communities.² We purposefully combined existing structures (the trauma centers) with standardized processes to minimize resource expenditure and increased transportability of the project.

An organizational meeting of selected trauma centers from eastern and north-central states was held to describe the project, explore interest, and identify potential barriers to participation. Trauma centers in three communities from different states were selected to establish Trauma Center-Community Partnerships (TC-CP) to address firearm injury. This selection was based on

information provided through a formal application that included community characteristics, basic mortality data, recognition of firearm injury as a community problem and the willingness to address it. Each community was relatively small in population and not contiguous to a major urban center (Table 1).

Implementation

Structure. Three TC-CP sites were established and guided by a university-housed Firearm Injury Center (FICAP; see Figure 1). The FICAP is an extramurally funded injury research center directed by an academic trauma surgeon and a nurse scientist (FICAP directors) with an epidemiologist and volunteer advisory board. FICAP directors provided intellectual leadership, strategic objectives, and fiscal oversight. A FICAP-based project manager coordinated and supervised the TC-CP sites daily, organized information flow between the sites, and supported standardization of processes.

TC-CP sites enlisted physician directors (at first 3 trauma surgeons, one of whom was replaced by an emergency physician) and site coordinators (hereafter referred to as site teams). Physician directors supervised site operation and established the local advisory board. FICAP and physician directors jointly recruited the site coordinators, a position created for and funded by this study. Site coordinators collected data, managed information, recruited community groups to develop coalitions, organized meetings, and established local plans and initiatives. All other support personnel were in place at TC-CP sites at project inception. Other resources, including space, computing, fringe benefits and allotment of dedicated director effort, came from the hospital. Crucial supporters included trauma program managers, Surgery Department chairs, hospital CEOs, administrators, and hospital boards.

Site teams created an operational plan to achieve project goals and were advised by FICAP on strategies to establish community advisory boards. Community advisory boards have been

shown to closely reflect the views of the communities they represent.²² Potential advisors were informed of the project goals in order to solicit support and commitment. These advisory boards created a cadre of regional leaders who rendered guidance, sought additional advisory board members, identified local funding sources, and developed interventions.

Likewise, each site formed coalitions with existing community groups (volunteer groups, organizations, foundations) with missions relevant to the project goals. Site coordinators were the ambassadors to these groups by establishing relationships, seeking common ground, and forming the foundation to develop community specific interventions. Diverse community perspectives were encouraged in order to broaden the dialogue on firearm injury.

Process. Working relationships among the TC-CP site teams and FICAP personnel were emphasized in order to standardize processes. An accepted framework for injury prevention was used to encourage consistent processes and approaches across sites.²³ (Table 2) Site teams were trained to frame firearm injury as a public health issue, using data, monographs and select peer-review publications. This helped them to assume a balanced and apolitical approach to firearm injury. Further, site teams were directed in site administration, local data collection, and strategic planning. The model capitalized on the intellectual resources of researchers from a variety of academic disciplines at FICAP (e.g. epidemiology, criminology, public health, demography) to complement the community expertise of the TC-CP sites.

Standardization of processes to increase efficiency was enhanced by on-site visits by the FICAP project manager and by frequent electronic or telephone discussions between the project manager and site coordinators. The project manager coached site teams to achieve project goals and address site-identified needs as a proactive means to expedite problem identification and solution development.

Because existing surveillance systems inadequately capture firearm injury at the community level,²⁴ each site implemented a data collection system by working with medical examiners /coroners, law enforcement agencies, and crime labs. For all deaths, a Firearm Injury Reporting System (FIRS)^{25,26} was used to capture information on the victim, the shooter, the context within which the shooting occurred, and the firearms and bullets involved in the shooting (Table 3). A suicide supplement to the FIRS that recorded narrative descriptors of suicide notes, family interviews and police investigations was also included. Linked data within the FIRS system was more comprehensive than those available public data from vital statistics²⁷, medical examiner or Uniform Crime Reports²⁸ alone. (Table 3)

Data extracted from the ME/coroner records were linked with police records to more completely capture information about circumstances, suspects, and firearm characteristics. Hand searches of police records were performed to validate that all available firearm fatalities were captured. If accessible, supplemental homicide reports were obtained and crime lab data were obtained on firearm make, model, and source. Six months were required to obtain clearances, gain support and begin to implement the collection phase.

Outcomes & Data Analysis

Two primary outcomes were used to evaluate if trauma centers could function as lead organizations in acquiring community-specific data. These were the completeness of data and the production of community-specific profiles. Data were submitted to FICAP for processing and analysis. The proportion of completeness (the ratio of complete/total n) for each core data element was calculated. Five-year community-specific profiles were based on counts and summary statistics and rates were calculated using the 1996 Census population estimates for each community. These profiles were used to educate and inform the community of the characteristics of firearm violence. Outcome and process measures were used to evaluate specific aim 2 – if trauma center

professionals could, in partnership with community leaders, frame firearm violence as a public health problem specific to the community. These included: a) size and composition of advisory board, number of meetings, workgroups, and strategies developed, b) number of data-driven media pieces, and c) number of meetings to inform policy. A process analysis of problems experienced by the sites, the problem indicators, and solutions was used to answer specific aim 3 – to identify challenges specific to establishing a firearm injury prevention center in trauma centers located in smaller communities.

Results

The completeness of community-specific firearm injury data varied by data element. (Table 3) Completeness of data elements ranged from 57.1% (firearm make) to 100% (police agency involved). The five data elements with the most incomplete data were firearm make, drug screen, alcohol level, education, and body system injured.

Community-specific profiles revealed a total of 1062 firearm fatalities over five years with suicides (59.2%) followed by homicide (38.1%), unintentional (2.5%) and unknown (0.2%). Because of the negligible numbers of unintentional and unknown deaths, further analysis of data were limited to suicides and homicides (Table 4). Profiles varied revealing distinct differences among communities, such as seen in the variable homicide rates between the Ohio site and the Pennsylvania and Iowa sites. Firearm suicide rates among all three sites were virtually identical.

Process and outcome measures describing the ability of the TC-CP sites to frame firearm injury as a public health problem are presented in table 5. Advisory boards consisted of community leaders who partnered with the physician director and site coordinator, ranged in size from 9 to 22 members and met from one to 12 times. Advisory board composition reflected the characteristics, needs, and resources of individual communities and consisted of representatives from health care, law and law enforcement, government, research, education and youths services, community groups,

local businesses and funding agencies. Sixty-three data-driven media articles appeared. These were generated through interviews, op-ed pieces, and media coverage of professional presentations. Eighteen events took place with a legislative or policy focus involving elected representatives or regulatory agencies.

To delineate challenges experienced in developing TC-CPs, a process analysis of problems, indicators, and solutions is presented in Table 6. Problems included disconnected data sources, multiple data owners, potential for political fallout, limited trauma center data, variability of skill sets and experience of medical professionals, and sustainability. Upon recognition of a challenge, strategies to resolve problems were developed, shared among sites, and monitored closely. Periodic reports specific to the problem were generated and distributed to all participants.

Discussion/Application

Surveillance is the cornerstone of public health, providing a system for understanding the nature of the injury. There is presently no comprehensive, nationwide surveillance system for firearm fatalities,²⁹ though the Centers for Disease Control has now implemented the National Violent Death Reporting System in a handful of states. Trauma centers located in small cities may serve as excellent partners to implement prevention programs if they can acquire or are provided with the community specific data.

This case study demonstrated that trauma centers, when provided resources and support, can function as local firearm injury prevention centers. Trauma centers can address firearm injury, become data-driven, and engage community leaders to address firearm injury. The ability of trauma centers to serve as catalysts in addressing the politically sensitive issue of firearm injury is a useful and cost-effective approach to injury prevention. While the communities we studied could have addressed firearm injury on their own, they had not done so prior to the establishment of the TC-CP. In part, this may be due to the fact that firearm injury is politically sensitive, has little quality

surveillance data and may be portrayed by the media only. The intensity of extremist responses frequently accompanying any discussion of firearms poses a special challenge and requires well-prepared medical professionals.

The development of the site teams (physician directors and site coordinators) in becoming data-driven leaders was an important early step. These teams needed preparation beyond what they had been given as part of their traditional education.³⁰ This preparation focused on supplementing the existing authoritative style honed in resuscitation and surgical environments with additional skills in consensus-building, conflict resolution, partnering with members of the community, coalition-building, cultivating involvement of community leaders, and working with media and legislators.³¹ The site teams became committed partners with the community³² and site directors became “quiet leaders”³³ who established credibility from reliable data and first-hand knowledge. Instead of creating turbulence around this politically-charged topic, site directors created calm by deliberately using local and concurrent data to address firearm violence as a public health problem.

Establishing community partnerships was central to move beyond data acquisition and spotlight firearm injury as a public health problem within the community. Initiatives cannot be imposed on communities that are neither prepared for change³⁴ nor aware that a problem exists.^{35,36} The development and dissemination of community-specific profiles helped to elevate awareness, support data-driven dialogue and stimulate local action, a proven approach in community action research.^{36,37} The TC-CP partners were responsible for placing information in the media and helped reporters access and interpret data, a strategy that has been shown to be effective in educating the community.³⁸

The advisory boards were the key partners in this project and were comprised of leaders in the community. Advisors were crucial to building political support³¹ and to reflect community values and beliefs.²² Characteristics of advisors included the ability to exert political or economic

influence, interest in a balanced, data-driven approach to firearm violence, and readiness to provide entrée to other key community members. Advisory boards were designed with the understanding that community-based approaches cannot occur without participation and intimate involvement and co-leadership of key community leaders and the preparation of these leaders to make evidence-based decisions.³⁹ The boards exemplified the partnership and were essential to maximize efficient use of limited resources, enhance community buy-in, reach target populations, and establish long-lasting community ownership of firearm injury prevention programs.^{31,40}

Most communities recognize firearm injury as a well-known problem in urban settings, however, this does not necessarily extend to smaller communities. An important byproduct of this study was the ability to characterize and quantify firearm fatalities in smaller communities. Firearm homicides occurred in each of our sites, with the rate in Ohio (12.5 per 100,000) far surpassing national rates or the other sites. Across all sites and consistent with urban areas,^{41,42} the handgun was the most common weapon involved in all fatalities; with pistols the predominant handgun used in homicides. Firearm suicide rates were comparable to or exceeded the national average. The revolver was the most frequently used weapon for suicide in Ohio and Pennsylvania. Long guns were the main weapons used for suicide in Iowa, confirming reports from other more rural settings.^{43,44}

Several issues should be considered when interpreting the results of this study. Data retrieved from the medical examiners/coroners, police and crime labs were at times incomplete. However, these data became more complete as the project progressed. Distributions of firearm injury by intent differ between fatal and non-fatal firearm injury,⁴⁵ with suicide attempts more likely to result in death and individuals with interpersonal and unintentional firearm injuries more likely to survive.⁴⁶ Therefore, the exclusive focus on fatalities can potentially misinform communities.

Although a case study limits generalizability, we believe that this model can be replicated in communities beyond our study sites. We purposefully standardized structures (i.e. using existing trauma centers) and processes. The FICAP project manager coached the TC-CP site teams building on their different backgrounds, knowledge, interests, and skills,³³ but held constant the importance of meeting project goals through the use of standardized processes. This coaching was complemented by the FICAP directors who assumed a more authoritative role as needed to guide and, at times, mandate actions to achieve expected outcomes.

Implementing local data collection required the site teams to establish new partnerships with medical examiners/coroners, police, and crime labs. Unlike most urban areas where data are centralized and computerized, this was not necessarily true in our sites. Data were often in paper format, in distant or unconventional locations, and in need of hand abstraction and linkage. Despite these challenges our study confirms that community-specific data can be retrieved and linked but does highlight that wider application of the TC-CP model is limited by the resources required to collect and link community-specific data, an essential ingredient that is important to local action.^{24,47}

Although death certificates provide important data cause of death and demographics, they provide only limited detailed information about the circumstances surrounding the event and information about the weapon and ammunition. Thus, the FIRS, designed to link data sources, has been an important step in examining the completeness of data that can be expected as the CDC moves towards a national violent death reporting system. The National Violent Death Reporting System currently operating in select states could provide local trauma centers with comparable data for use in their communities.⁴⁸ When this system is fully operational, the TC-CP model would be enhanced by accessing and using these data to serve as a foundation for addressing firearm injury in the community.

This case study demonstrated both the benefits and challenges of using local trauma centers to function as local firearm injury prevention centers. Trauma centers located in smaller communities would be well-served by following the ten steps for injury prevention available from the American Association for the Surgery of Trauma.²³ Our work in firearm injury prevention however, suggests that additional approaches should be considered when embarking on a firearm injury prevention program. (Table 7)

Summary

This study of local trauma centers in three diverse, smaller communities demonstrated the trauma centers could function as effective firearm injury prevention centers in their communities. Such efforts are in accordance with trauma center mandates to assume leadership for injury prevention. The TC-CP model was effective in acquiring and disseminating data and framing firearm injury as a public health problem specific to each community. Problems experienced during implementation of the TC-CP model were analyzed and lessons learned in this case study may improve the effectiveness of trauma centers to conduct community-based firearm injury prevention programs in the future.

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Table 1. Trauma Center-Community Partnership Communities, Population Characteristics, 1996

	PA	OH	IA
Characteristics of all counties included in project	Number of counties: 2	Number of counties: 2	Number of counties: 20
Total population ^a (home city & catchment area)	554,162	486,187	834,347
Age distribution (%)			
< 18	23	24	25
18-64	61	59	61
65+	16	17	14
Racial distribution (%)			
White	96	88	96
Black	3	11	2
Trauma Center home city^b:	Bethlehem	Youngstown	Iowa City
Population	71,428	95,752	59,738
Percent Persons below Poverty	13%	29%	23%
Median Household Income	\$28,375	\$17,060	\$24,565

PA = Pennsylvania

OH = Ohio

IA = Iowa

^a Based on Census projections for 1994-1996, (Estimated population data from Claritas.com)^b 1990 Census data for home cities; Factfinder.census.gov (1990 Summary Tape File 3 for poverty and HH income)

Table 2: Steps for Injury Prevention²³

1. Gather & analyze data
2. Select the target injury and population
3. Determine intervention strategies
4. Develop an implementation plan
5. Identify, select and commit community agencies to implement the program
6. Develop an action plan
7. Orient & train agencies/individuals implementing the intervention plan
8. Implement the program
9. Monitor & support the program
10. Evaluate & revise the program

Table 3: Completeness of Data Elements Collected

	Public, Available Data, by Source			Data Collected	
	Vital Statistics ²⁷	Medical Examiner	Police / UCR Data ²⁸	FIRS ²⁶ (linked)	% Complete
HOST					
Intent of death	X	X	X	X	99.8
Gender	X	X	X	X	98.8
Age	X	X	X	X	99.0
Marital Status	X	X		X	91.7
Education	X	X		X	78.0
Race	X	X	X	X	97.9
Occupation	X ^a	X		X	96.0
Alcohol level				X	66.3
Drug Screen				X	64.3
Body system injured	X	X		X	81.5
ENVIRONMENT					
Location of shooting	X ^b	X	X	X	97.3
Time of shooting	X ^c	X	X	X	87.2
Police agency involved		X		X	100
Neighborhood of shooting	X	X		X	96.4
AGENT / FIREARM					
Firearms recovered			X	X	99.2
Firearm type			X	X	91.1
Firearm make		X		X	57.1
Bullet caliber		X		X	87.0

^a Listed as “usual occupation” in *U.S. Vital Statistics System: Major Activities & Developments, 1950-1995*

^b Specified as the level of “city, town, or location”

^c Listed as “time of injury”

Table 4: Example of Community-Specific Data for Firearm Homicides & Suicides (1994-1998)

	Homicide			Suicide		
1994 –1998 Death Rate^a per 100,000 Population	PA (n=56)	OH (n=304)	IA (n=45)	PA (n=189)	OH (n=160)	IA (n=280)
Total	2.02	12.5	1.08	6.82	6.58	6.72
Race White	1.36	2.92	0.84	6.96	6.8	6.8
Black	15.9	77.48	10.8	2.64	5.42	3.92
Gender Male	3.26	21.86	1.58	12.24	11.94	13.16
Female	0.7	3.46	0.68	1.46	1.66	1.06
Ratio of Firearm Deaths to Intentional Deaths by other means	66.7%	92.2%	60.9%	50.0%	55.2%	51.5%
Deaths – Characteristics (%)						
Total firearm fatalities ^b	(n=56)	(n=304)	(n=45)	(n=189)	(n=160)	(n=280)
% identified firearm(s), by type	94.6	89.5	95.6	95.8	96.9	97.5
Of total firearm fatalities, % involving:						
Long Gun(s)						
Rifle(s)	21	14	36	42	29	58
Shotgun(s)	13	5	13	23	9	16
Handgun(s)	11	10	31	19	21	42
Revolver(s)	77	80	69	58	71	42
Pistol(s)	11	12	22	28	41	17
Handgun type(s) not further specified	45	45	44	22	25	18
	5	11	4	8	5	7
Total deaths with known location of injury	(n=53)	(n=287)	(n=44)	(n=185)	(n=160)	(n=280)
% In-Home	32	29	50	82	68	77
% Out-of-Home	68	71	50	18	51	23

^a Rates calculated using average annual 1994-1998 deaths and 1996 estimated population from census data

^b FIRS data on numbers of weapons identified for all incidents. Can include multiple firearms per incident thus may add up to more than 100%.

Table 5: Characteristics of Local Advisory Boards

Local Advisory Boards	PA	OH	IA
Advisory Board Established	12/1999	2/2000	3/2000
Activities:			
• # of Meetings	8	12	1
• # of Workgroups	3	0	0
• # Strategies developed	3	4	0
Advisory Board Size			
• Initial Number of Members	22	13	9
• Members per capita (100,000)	3.96	2.67	1.07
Composition: Initial Membership Expertise			
• Healthcare	2	2	-
• Law/ Justice/ Enforcement	3	3	2
• Government	2	-	2
• Research, Data (includes coroner/medical)	3	-	2
• Education and Youth Services	5	2	-
• Community Groups (Faith-based, Nonprofit...)	4	4	2
• Funders and Local Business	3	2	1

Table 6: Problems Encountered & Effective Solutions of the TC-CP Model

Problem	Indicators	Immediate Strategies	Long-term Solutions
Disconnected Data Sources	<ul style="list-style-type: none"> Multiple sources: state police, multiple local police and ME/coroners in one catchment area Lack of uniformity in collected data Data sources often in paper format & in unconventional locations 	<ul style="list-style-type: none"> Hired & trained a data abstractor Provided a uniform data set 	<ul style="list-style-type: none"> Implement statewide violent death reporting system, using uniform data elements
Multiple Data Owners	<ul style="list-style-type: none"> Wary about sharing data Suspicious about use of data Concern about release of data to media without their knowledge 	<ul style="list-style-type: none"> Provided continuous interaction between TCs & data owners Developed positive rapport with stakeholders 	<ul style="list-style-type: none"> State health department participates in a national violent death reporting system and mandates reporting by all data owners
Political Fallout	<ul style="list-style-type: none"> High risk for issue to be viewed as pro-gun/anti-gun Medical Professionals became targets for negative feedback from individuals misperceiving intent of project 	<ul style="list-style-type: none"> Developed educational offerings for site teams about addressing firearm violence as a health issue. Reached out & identified antagonists who can share the common goal of decreasing injury Repeated training and coaching to interact with community & media to frame firearm injury as a health issue. 	<ul style="list-style-type: none"> Use professional societies to educate medical & health care professionals in addressing firearm violence as a public health issue. Build public health approach to firearm injury into curricula of medical & allied health schools.
Limitations of Trauma Centers Data	<ul style="list-style-type: none"> Trauma center statistics provide only limited information on firearm injury in the community 	<ul style="list-style-type: none"> None undertaken 	<ul style="list-style-type: none"> Implement mandatory reporting of all of firearm injuries to the state from all hospitals, ME/coroners
Limitations of Medical Professionals	<ul style="list-style-type: none"> Trauma Surgeons & Emergency Physicians not typically viewed as leaders on community health issues Competing demands of busy clinical practice and community leadership 	<ul style="list-style-type: none"> Provided infrastructure with site coordinator to commit to project Educated site directors and coordinators 	<ul style="list-style-type: none"> Standardize simple self-directed learning for leadership and advocacy using a public health model as the core structure Provide infrastructure support for TC-CP
Sustainability <ul style="list-style-type: none"> Personnel Financial 	<ul style="list-style-type: none"> Community partners were stable, but TC personnel turnover due to professional opportunities in all sites was problematic Grant provided initial start-up costs; sustainability depends on hospital support & ability to secure local funding 	<ul style="list-style-type: none"> Identified and recruited other motivated medical professionals in the hospital community to assume director role Used local advisory boards to identify local sources to finance project 	<ul style="list-style-type: none"> Develop standard job descriptions and training templates to prepare for change in personnel Develop training template to guide sites in acquiring long-term financial support

Table 7: Supplementary Steps for Community-based Firearm Injury Prevention Programs

1. Partner with an existing academic center, preferably one with experience with firearm injury, to capitalize on resources and expertise.
2. Seek out existing data from a diverse group of owners, including medical examiners/coroners, law enforcement, and health departments. If the National Violent Death Reporting System is operational within the state, explore how to access these data.
3. Recruit 2-3 community leaders to help develop an advisory board and procure political guidance within the community.
4. Educate the advisory board as spokespersons for the program in order to seek additional funding.
5. Frame firearm injury as a public health problem through continuous public education.

Figure 1: Trauma Center-Community Partnership Model

