Hospital–Based Injury Prevention Components

The Governor's EMS and Trauma Advisory Council (GETAC) Injury Prevention Committee developed this document to assist hospital-based injury prevention programs enhance injury prevention program capacity by defining essential core components and providing supporting materials to achieve those core components.

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Governor's EMS and Trauma Advisory Council Injury Prevention Committee

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Injury is the leading cause of death in Texas between the ages of 1 and 44 and the third leading cause of death for residents of all ages. As a result, there are numerous injury and violence prevention activities occurring in Texas. The Texas Department of State Health Services (DSHS) has implemented a broad array of injury/violence prevention and control programs over the years. Additionally, a number of hospitals in Texas conduct injury and violence prevention activities.

Numerous groups have recognized a need for overall leadership for and coordination among injury/violence prevention programs in Texas. In 2002, the Governor's Emergency Medical Services and Trauma Advisory Council (GETAC) Injury Prevention Committee developed the "Texas Injury Prevention Plan." In 2008, DSHS requested that the Safe States Alliance conduct a State Technical Assessment Team (STAT) visit to help formulate a concerted plan of action. The STAT report included several recommendations to improve the quality of injury prevention programming in Texas, including:

- Make data-driven decisions when planning and implementing injury/violence prevention interventions.
- Ensure that evaluation is an integral part of any injury/violence prevention program.
- Implement injury/violence prevention programs that are comprehensive and go beyond awareness and information dissemination activities to approach behavioral, social, and environmental change.
- Provide training on the core components of a public health approach to injury/violence prevention for local and regional colleagues, in concert with external partners.
- Conduct a statewide environmental scan of injury/violence prevention programs, training opportunities, and educational materials that would be of value to stakeholders.

In response to the STAT report, Dell Children's Medical Center in Austin conducted a study in 2009 to describe the Texas injury and violence prevention workforce, including demographic characteristics, educational backgrounds, areas of focus, funding, practice characteristics and training needs. This study identified several areas of need among injury prevention programs in Texas, particularly in evaluation of program strategies and formal injury prevention/public health training of staff conducting programs. More than half (57.5%) of respondents reported using only process outcomes (e.g., number of people served, etc.) to measure success; 12.6% of respondents reported doing no evaluation of their injury prevention activities. Less than half (48.8%) of the participants reported having received any injury prevention training. Of these, many had received training at a conference (76.6%) or through an in-service provided by their organization (68.9%).

Component 1

Use Data to Identify/Determine Program Focus Areas

- **Youth Risk Behavior Surveillance System (YRBSS)** - The Youth Risk Behavior Surveillance System (YRBSS) monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults, including behaviors that contribute to unintentional injuries and violence, sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection, alcohol and other drug use, tobacco use, unhealthy dietary behaviors, inadequate physical activity, and the prevalence of obesity and asthma among youth and young adults.
    - Centers for Disease Control. (2014, March 20). "Youth Risk Behavior Surveillance System. http://www.cdc.gov/HealthyYouth/yrbs/index.htm?s_cid=tw_cdc16
- **Inventory of National Injury Data Systems** – a list of 45 different federal data systems operated by 16 different agencies and 3 private injury registry systems that provide nationwide injury-related data
    - Centers for Disease Control. (2014, March 19). "Inventory of National Injury Data Systems." www.cdc.gov/Injury/wisqars/InventoryInjuryDataSys.html.
- **Texas Department of State Health Services, Center for Health Statistics** – provides direct links to health-related data including but not limited to child fatalities, death data, hospital discharge data, major trauma, and population data
    - Texas Department of State Health Services. (2014, April 30). "Direct Links to Health-Related Data." http://www.dshs.state.tx.us/chs/datalist.shtm
- **National Center for Health Statistics** – provide statistical information that will guide actions and policies to improve the health of the American people: Health, United States; Healthy People 2010; International Collaborative Effort (ICE) on Injury Statistics
    - Centers for Disease Control. (2014, March 27). "National Center for Health Statistics." www.cdc.gov/nchs/index.html
- **Fatal Accident Reporting System (FARS)** - contains data on an annual census of fatal traffic crashes. To be included in FARS, a crash must involve a motor vehicle traveling on a traffic way customarily open to the public, and must result in the death of an occupant of a vehicle or a non-motorist within 30 days of the crash. Data collected by FARS includes details about the crash, the vehicles involved, and the persons (including

Hospital-Based Injury Program Example Using Data

Dell Children's Medical Center requested a community project with the City of Austin Transportation Department to help identify areas of concern in the community for child injury specific to motor vehicle crashes involving children, restraint use, child pedestrian and cyclist injuries. Maps identifying incident locations were created using data from local emergency medical service, the trauma registry, and local law enforcement. This data was used to inform law enforcement for future enforcement, organize locations for driver safety education and car seat outreach programs, strategic placement of public awareness campaigns and guide improvements to the environment by visually identifying high risk areas. Data was analyzed in the fall of 2010 and again in spring of 2014.

Component 2
Engage Partners for Collaboration

- Consumer Product Safety Council
- Local coalitions – specific to certain injury causes
- Retail establishments
- Day Care Centers (child and adult)
- Churches and other religious institutions
- Realtors
- Financial Institutions
- Philanthropic Foundations

Additional Resources

Developing Effective Coalitions: An Eight Step Guide developed by the Prevention Institute is a step-by-step guide to coalition building that helps partnerships launch and stabilize successfully. It supports advocates and practitioners determine the appropriateness of a coalition, as well as providing guidance in selecting members, defining key elements, maintaining vitality, and conducting ongoing evaluations.
http://www.preventioninstitute.org/component/jlibrary/article/id-104/127.html

The Tension of Turf: Making it Work for the Coalition is the companion piece to *Developing Effective Coalitions: An Eight Step Guide.* Tension of Turf offers practical support for managing the dynamic tension that often arises when people collaborate. The guide helps coalitions derive authentic constructive power from their varying perspectives, skills, and mandates.
http://www.preventioninstitute.org/component/jlibrary/article/id-103/127.html

"Community How To Guide on Coalition Building," To assist communities in sustaining their underage drinking prevention coalition or organization, this booklet discusses ways to overcome obstacles and gives specific ideas on how to keep the effort going. In addition, the reader will learn how coalitions can support critical programs in the community including enforcement and education, thereby making the effort even more relevant to the key target groups.
http://www.nhtsa.gov/people/injury/alcohol/community%20guides%20html/Book1_CoalitionBldg.html

References:

1. *Building Safer States: Core Components of State Public Health Injury and Violence Prevention Programs.* (2013). Atlanta (GA): Safe States Alliance.

2. National Center on Shaken Baby Syndrome. Retrieved from URL: http://www.dontshake.org/ (accessed 25 June 25, 2014).

Component 3

Provide Formal Injury and Violence Prevention Training Opportunities for the Injury Prevention Coordinator

- The **WHO** Violence and Injury Prevention internet based programs, including courses on data collection, violence, and other injury topics.
  www.who.int/violence_injury_prevention/violence/en/.
- GETAC Trainings: check on www.dshs.state.tx.us/emstraumasystems then click the left page on Governors EMS & Trauma Advisory Council, and under Injury Prevention Committee you will find various documents, recommendations and tools addressing injury prevention.

Suggested Reference Books

- Prevention is Primary Strategies for Community Well-Being Jossey-Bass A Wiley Imprint: 2010. Second Edition. Editors: Larry Cohen, Vivian Chabez, and Sana Chehimi
- Self-study/book review: The Guide to Community Preventive Services *What Works to Promote Health* Task Force on Community Preventive Services; Oxford University Press: 2005. Edited by: Stephanie Zaza, Project Co-Director, Peter A. Briss, Project Co-Director and Kate W. Harris, Managing Editor
- Epidemiology *fourth edition* by Leon Gordis Saunders Elsevier 2009.
- The Guide to Community Preventive Services What Works to Promote Health?.Oxford University Press 2005. Editors: Stephanie Zaza, Peter A. Briss and KateW. Harris

Suggested Training Courses:

- Johns Hopkins University Center for Injury Research and Policy's 2014 Summer Institute, "Principles and Practice of Injury Prevention"
  Current dates of sessions/classes: www.jhsph.edu/ and search for Summer Institute

Component 4

Select and Implement Evidence-Informed Prevention Strategies

- What might effective interventions cost; what is the likely return on investment? (http://www.thecommunityguide.org/about/conclusionreport.html)

- **Harborview Injury Prevention Center Best Practices Guide** – provides information on what works and what doesn't work for the prevention of injuries to children and adolescents. (http://depts.washington.edu/hiprc/practices/)

- **National Center for Injury Prevention and Control/Centers for Disease Control and Prevention (CDC)** – researches the best ways to prevent violence and injuries, using science to create real-world solutions to keep people safe, healthy, and productive. CDC's Injury Center functions as the focal point for the public health approach to preventing violence and injuries and their consequences, by moving from science into action. (http://www.cdc.gov/injury/)

- **Substance Abuse and Mental Health Services Administration (SAMHSA)** – is the agency within the U.S. Department of Health and Human Services that leads public health efforts to reduce the impact of substance abuse and mental illness on America's communities. (http://www.samhsa.gov/)

- **Cochrane Collaboration Reviews** – produces and disseminates systematic reviews of healthcare and public health interventions. (http://www.cochrane.org/cochrane-reviews)

- **Campbell Collaboration Reviews** – is an international research network that produces systematic reviews of the effects of social interventions. (http://www.campbellcollaboration.org/)

- **Countermeasures that Work: A Highway Safety Countermeasure Guide** – is a guide to assist in selecting effective, science-based traffic safety countermeasures for major highway safety problem areas. The guide: 1) describes major strategies and countermeasures that are relevant; 2) summarizes their use, effectiveness, costs, and implementation time; and 3) provides references to the most important research summaries and individual studies. The latest edition available can be found by typing the title of the publication into a search engine.

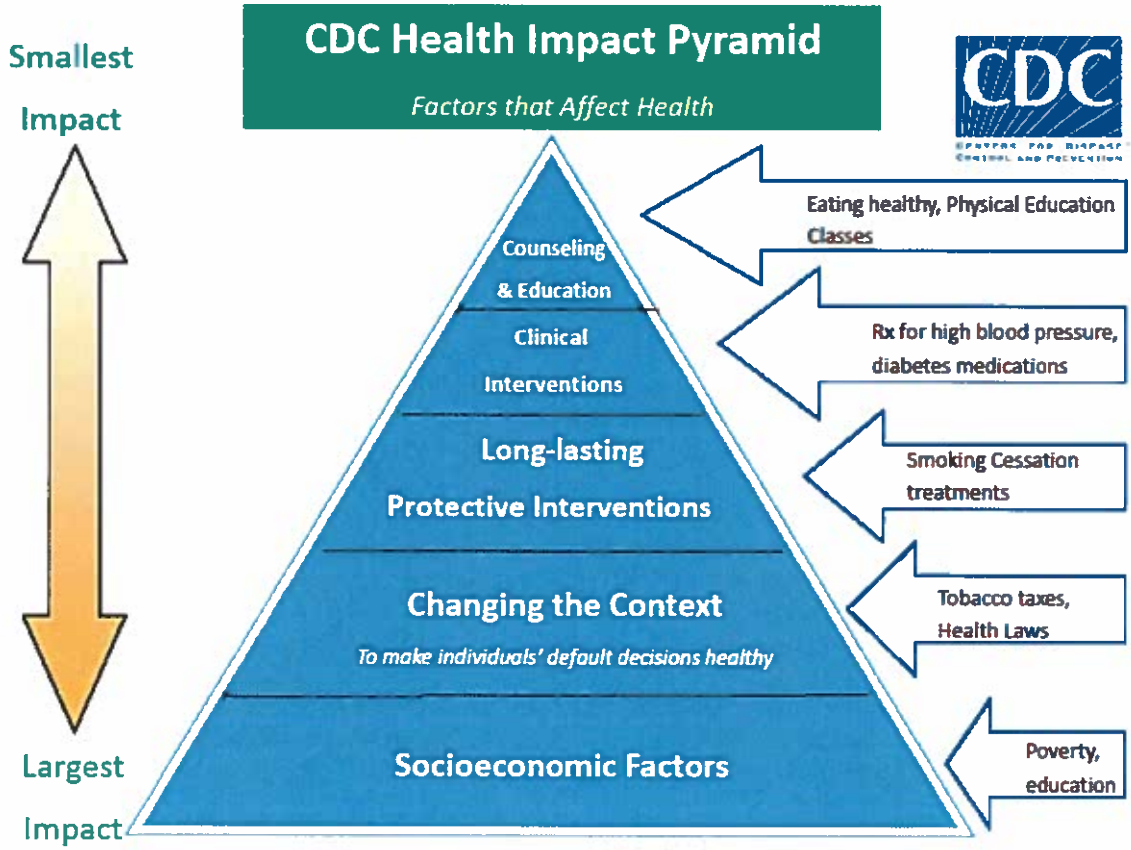
- **Google Scholar** – is a search engine for scholarly literature, such as research articles, theses, and books. (http://scholar.google.com/)

- There are also books available that provide information on how to design, implement, and evaluate injury and violence prevention programs. These books are listed under Additional Resources in this section.

How do we select strategies for topic areas that don't have much research?

If there are no systematic reviews about a topic area, or if it is an area that doesn't have much research, there are tools and frameworks that can be used to design, implement and evaluate strategies. Although evaluation is important for any strategy that is implemented, it is critically important that these strategies have a properly designed and executed evaluation component. *For more information about Evaluation, see the Evaluation section of this document.*

Health Impact Pyramid was developed by the Centers for Disease Control and Prevention (CDC). Like the Spectrum of Prevention, the CDC Health Impact Pyramid shows that interventions that require the least amount of effort by an individual have the greatest impact because they reach broader segments of society. This includes strategies that change the environment to make safe and healthy options the easy or default choice for persons regardless of societal factors such as education and income.[4] An example of this is the dramatic decline in motor vehicle-related deaths over the past 50 years in spite of the huge increase in the number of automobiles and automobile travel. Policies requiring changes in the way vehicles and roads are designed, as well as enactment and enforcement of laws requiring seat belt use, child safety-seat use and motorcycle helmet use, and laws against driving while intoxicated (DWI) and underage drinking, have led to significant reductions in traffic-related deaths.[5]



Source: Frieden, T. A Framework for Public Heath Action: The Health Impact Pyramid. Am J Public Health. 2010; April; 100(4): 590–595.

Appendix 1: Spectrum of Prevention Example for hospital-based injury/trauma program on older adult falls

Influencing Policy & Legislation

- Support statewide legislation to establish programs and appropriate funds to address falls in the elderly
- Encourage state and local governments to promote policies and programs that help reduce the incidence and risk of falls among older adults
- Support legislation to incorporate fall prevention guidelines into state and local planning documents that affect housing, transportation, parks, recreational facilities, and other public facilities
- Support legislation relating to osteoporosis prevention
- Support legislation to increase funding for rehabilitation facilities to prevent long-term disability
- Support legislation to increase funding to improve rehabilitation outcomes

Changing Organizational Practices

- Support changes to the Texas Trauma Registry System to improve available data on falls
- Work with hospitals and geriatric healthcare providers to implement the CDC Stopping Elderly Accidents, Deaths & Injuries (STEADI) Toolkit
- Work with Regional Trauma Advisory Councils to track older adults with multiple falls/admissions
- Work with retail stores such as Walmart, Target, Lowes, etc. in the community to display all items pertinent to older adults in one area of the store to provide "one stop shopping" similar to displays for babies

Fostering Coalitions & Networks

- Participate in local coalitions (i.e., Area Agency on Aging, church groups, etc.).
- Promote multidisciplinary RAC membership including recruitment of community members
- Identify other physician groups (e.g., cardiology, internal medicine, geriatrics, etc.) that are caring for older adults to prevent duplicity of medications/interactions, and increase medication compliance

Educating Providers

- Work with hospital staff to provide educational materials to nursing home staff of fall risk factors and prevention strategies
- Coordinate education of fall prevention strategies (home safety, medication review, eye exams, and exercise) to primary care physicians
- Educate healthcare providers about the the CDC Stopping Elderly Accidents, Deaths & Injuries (STEADI) Tool Kit
- Provide education to pre-hospital providers about what conditions require definitive care at an emergency room
- Provide regular education classes (including CE credits) and updates for nurses and nurses aids to prevent falls within older adult care facilities

Promoting Community Education

- Participate in Fall Prevention Week with organized community activities and outreach

Appendix 2: Revised Intervention Decision Matrix.

The Revised Intervention Decision Matrix is a simple tool designed to help people identify intervention options and choose between them. It can also help identify long term goals and intervention options which may support each other.

The Revised Intervention Decision Matrix ©

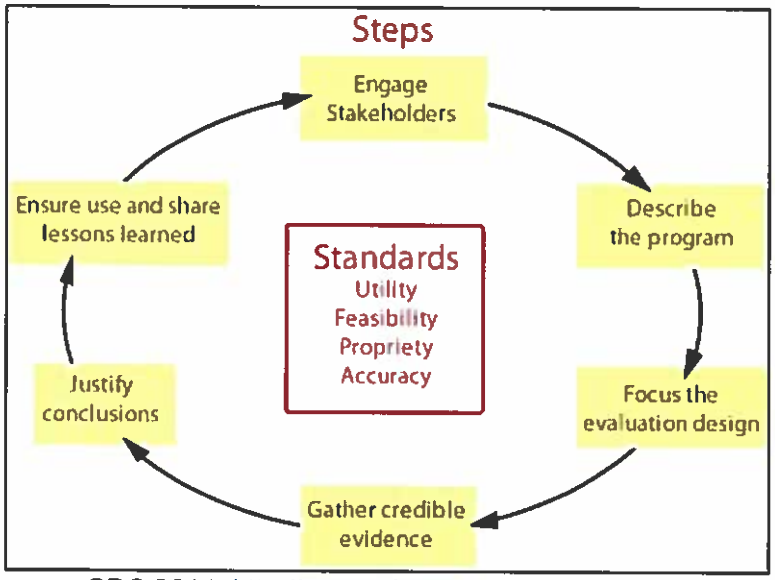
Fowler CJ & Dannenberg AL, 1995. Revised 1998, 2000, 2003 & 2010

Intervention	Option1	Option 2	Option 3
Effectiveness			
Feasibility			
Cost Feasibility			
Sustainability			
Ethical Acceptability			
Political Will			
Social Will			
Potential for Unintended Benefits (maximize benefits)			
Potential to "Do No Harm" (avoid unintended risks)			
Final Priority Rating			

Compare options ranking each cell as "high, medium, or low priority". Which option is strongest? Is there a "fatal cell"?

Component 5

Evaluate Program Processes and Strategies to Determine Value and Impact



Source: CDC,2014, http://www.cdc.gov/eval/framework/index.htm

The recommended framework (above) was developed to guide public health professionals in using program evaluation. It is a practical, nonprescriptive tool, designed to summarize and organize the essential elements of program evaluation. [4]

Evaluation, more often than not, is added to injury prevention programs after implementation has begun. However, the true impact of a program may not be readily detectable without building in an evaluation during the program planning phase. [5] The main objective of evaluation is not just to discover whether a program works, but to establish *how* and *why* it works. [4] Therefore, it is extremely important that injury prevention professionals consider evaluation at the very beginning stages of any program development.

The following descriptions explain several types of evaluation used in injury programming:

- **Formative evaluation** is designed to produce data and information used to improve an intervention or program during its developmental phase and documents the feasibility of program implementation. [5] Formative evaluation is an important tool for ensuring program success.
- **Summative evaluation** is designed to produce data and information on the program's efficacy or effectiveness (its ability to do what it was designed to do) during its implementation phase. [5] Summative evaluation is considered a method of judging the worth of program after the program is developed and implemented.
- **Process evaluation** focuses on how a program was implemented and operates. It is designed to document the degree to which the intervention (program) was implemented as intended by assessing how much of the intervention was provided, to whom, when, and by whom. [5]
- **Impact evaluation** is designed to assess intervention efficacy or effectiveness in producing midterm (e.g., twelve to twenty-four months) cognitive, belief, skill, or behavioral impact (e.g., car seat use) for a defined at-risk population. [5]
- **Outcome evaluation** is designed to assess intervention efficacy or effectiveness in producing long-term changes (e.g., one to ten years) in the incidence or prevalence of

possess a self-perceived opinion that the programs they conduct are evidence-based and/or believe they are utilizing evaluation effectively. However, studies show that program planners often believe the programs reputation for effectiveness amongst its stakeholders is more important than objective evidence of effectiveness. [9]
To date, many injury intervention programs in Texas are being utilized but lack evaluative measures. Rather, a large number of programs are simply measured on public opinion, materials distributed, perceived success, emotional ties, and the good intentions of "doing something" that drives the intervention. There is an increased need and ethical responsibility to conduct quality evaluation with all programs. Program planners should be wary of the belief that a program is effective simply by the community response and the many afore mentioned soft measures.

Evaluation of public health programs (i.e., injury prevention programming) and community initiatives can serve multiple purposes. These purposes provide the reasons stakeholders may want evaluation questions answered: [10]

- To determine achievement of objectives related to improved health status;
- To improve program implementation;
- To provide accountability to funders, community, and others;
- To increase community support for initiatives;
- To contribute to the scientific base for community public health interventions;
- To inform policy decisions.

Where do we find evaluation strategies?

There are many resources to help planners understand and utilize evaluation techniques. More robust hospital injury programs may be able to hire program evaluators who are specialized in evaluation methods. Smaller programs may need to rely on the resources listed below to increase their personal understanding and competency of evaluation. Additionally, hospital injury programs that are local to universities may consider developing a partnership to assist evaluation efforts. Many opportunities exist with higher education facilities and provide experience for students who are learning evaluation design to participate in real life scenarios.

The following are a few sources that are readily available and used by program coordinators to guide the development and implementation of evaluation design. While the complexity of evaluation may vary depending on many factors associated with injury interventions and programming, the importance of conducting evaluation should not.

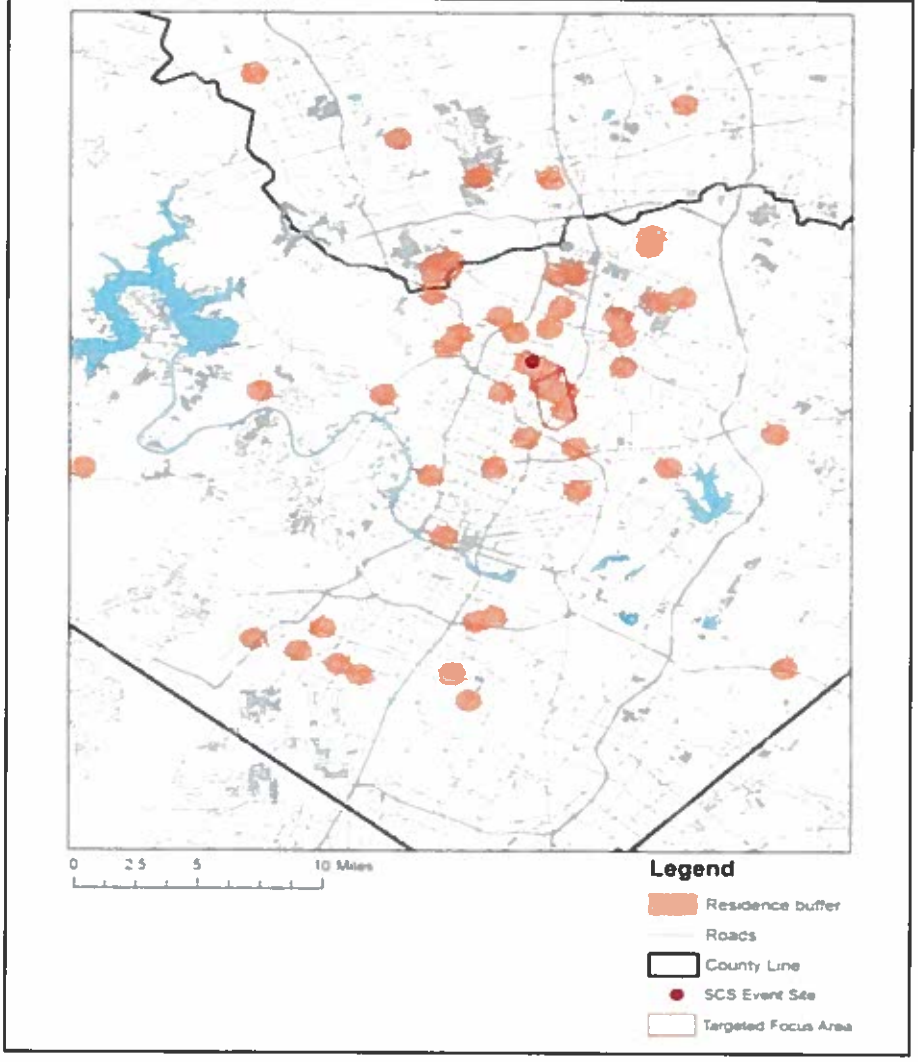
1. **CDC: Demonstrating Your Program's Worth, *A Primer on Evaluation for Programs to Prevent Unintentional Injury*–** is a free resource to help program managers, coordinators, and planners to demonstrate the value of their work. This resource explains why evaluation is worth the resources and effort involved
2. **CDC Evaluation Working Group**
   Provides a framework for program evaluation and other resources. Centers for Disease Control and Prevention. Framework for Program Evaluation in Public Health. MMWR 1999; 48(No. RR-11).

3. **Community Toolbox: Bringing Solutions to Light**
   From the University of Kansas, this provides information on evaluating under "Learn a Skill", "Plan the Work", and "Solve a Problem".

Another helpful tool is the use of spatial analysis and geographic information systems (GIS). This system helps to determine the contribution of population and geographic characteristics, including derived socioeconomic status and social disorder variables and environmental attributes, in order to design prevention programs that most effectively target the population. Even more important, GIS can be used to assess effectiveness of interventions by providing visualization of areas where injury rates or risk ratios changed over time. [11] Spatial analysis can help to determine where materials and resources have been distributed in a community compared to where the programs target population is located and assist planners to make modifications while implementation is in progress.

With the ability to combine spatial data with specific demographic and injury information, and the ability to communicate these results with colorful interactive maps, prevention efforts can be further targeted to areas least responsive to change. [11]

Residence of event attendee's vs targeted focus area



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