



# Hospital–Based Injury Prevention Components

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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.





## **Governor's EMS and Trauma Advisory Council Injury Prevention Committee**

November 2014

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%).

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. The document was developed with input from representatives of Texas EMS, Trauma & Acute Care Foundation (TETAF), Texas Trauma Coordinators Forum (TTCF), and regional Trauma Advisory Councils. *The Building Safer States: Core Components of State Public Health Injury & Violence Prevention Programs* defined by the Safe States Alliance and the American College of Surgeons *2014 Resources for Optimal Care of the Injured Patient* (Orange Book) were utilized to define the core components.

The core components outlined in this document are divided into individual sections:

- Component 1: Use data to identify/determine program focus areas
- Component 2: Engage partners for collaboration
- Component 3: Training to build professional capacity
- Component 4: Select and implement evidence-informed strategies
- Component 5: Evaluate program processes and strategies

Each section describes the important role the component serves in a hospital-based injury program, where to locate additional resources related to the component, and real examples of how the component is currently being utilized.

We hope that you find this document informative and useful to your professional practice. It is our collective desire that this plan serves as a statewide blueprint, a “living” document that will be evaluated and updated on an on-going basis. We appreciate your dedication and support to injury prevention throughout our great state.

On behalf of the Governor’s EMS and Trauma Advisory Council Injury Prevention Committee, and the many participants involved in developing this document, we thank you.

- Susan Burchfield**, Baylor Scott & White
- Mary Ann Contreras**, JPS Health Network
- Wayne Dennis**, Tech Star EMS
- Courtney Edwards**, Parkland Health & Hospital System
- Jessica Laplant**, Christus Spohn Hospital
- Shelli Stephens-Stidham**, Injury Prevention Center of Greater Dallas
- Stewart Williams**, Dell Children’s Medical Center of Central Texas

# **Component 1**

## **Use Data to Identify/Determine Program Focus Areas**

## Component 1: Use data to identify/determine program focus areas

### Why is data important?

The use of valid injury data is essential in understanding the extent of injuries and violence and is essential in making informed decisions regarding prevention priorities in a healthcare environment that imposes competing demands on resources. Data serves as a foundation for highlighting problems, identifying solutions, and evaluating results (World Health Organization, 2007). Injury data can guide local, regional, and statewide policies and actions by harnessing public support, political will, and funding opportunities (World Health Organization, 2007). Injury data is also essential to evaluate successes and cost-effectiveness of interventions (World Health Organization, 2007).

Data from within the community will always build a more convincing case for an injury prevention project than national data (The American Association for the Surgery of Trauma, 2014). Potential sources of data include hospital reports including emergency and inpatient discharge information, ambulance records, police reports, trauma registries, death records, community-based surveys or registries, transportation department reports, occupational safety records, rehabilitation centers (World Health Organization, 2007). When considering sources of valid injury data, contemplate combining data of individual organizations to create a more robust and inclusive pool of information through the formation of coalitions or partnerships.

### Suggested Data Sets:

- **Hospital, Local, Regional Trauma Registries** - vary in complexity and depth of information; may serve up to 13 functions including injury surveillance and epidemiology of injuries, advocacy, research for optimizing care, education and training, performance improvement/quality assurance, trauma accreditation, resource allocation, auditing, caseload verification, reimbursement, hospital reports, state reports, and federal reports (Rogers et al., 2010).
- **Texas Department of State Health Services Environmental Epi and Injury Surveillance Group** – public use EMS and hospital data files that provides limited demographic information, pre-hospital information, hospital admission, procedures, severity scores, hospital discharge information, transport and transfer data from the Trauma Registry for the State of Texas in addition to presentation reports.
  - Texas Department of State Health Services. (2013, November 21). “Data and Statistics.” <http://www.dshs.state.tx.us/injury/data/>.
- **WISQARS™ (Web-based Injury Statistics Query and Reporting System)** – an interactive, online database that provides fatal and nonfatal injury, violent death, and cost of injury data.
  - Centers for Disease Control. (2012, April 24). “Injury Prevention & Control: Data & Statistics.” [www.cdc.gov/injury/wisqars/facts.html](http://www.cdc.gov/injury/wisqars/facts.html).

- **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/HealthYouth/yrbs/index.htm?s\\_cid=tw\\_cdc16](http://www.cdc.gov/HealthYouth/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](http://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](http://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.

drivers) involved. For more information about FARS, go to [www.wtsc.wa.gov/statistics-reports/about-our-data/](http://www.wtsc.wa.gov/statistics-reports/about-our-data/).

**References:**

1. The American Association for the Surgery of Trauma (AAST). (2014). "A Community Guide to Injury Prevention." Retrieved from <http://www.aast.org/library/traumaprevention/injurypreventionguide.aspx>.
2. Rogers, S.C.; Campbell, B.T.; Saleheen, H.; Borrup, K.; Lapidus, G. (2010). Using trauma registry data to guide injury prevention program activities. *The Journal of Trauma Injury, Infection and Critical Care*, 69(4), S209-S213.
3. World Health Organization. (2007). "Preventing Injuries & Violence: A Guide for Ministries of Health." Retrieved from [http://whqlibdoc.who.int/publications/2007/9789241595254\\_eng.pdf](http://whqlibdoc.who.int/publications/2007/9789241595254_eng.pdf).

## **Component 2**

### **Engage Partners for Collaboration**

## **Component 2: Engage partners for collaboration on data and implementation and of evaluation of interventions.**

### **Why are partners important?**

Traumatic injuries occur in all ages, races, and socio-economic groups. Because the scope of injury prevention is so broad, no program can or should try to tackle the problem alone. Partnerships bolster the overall capacity and effectiveness of hospital-based injury prevention programs. Collaborating with both internal and external partners is essential to identify areas of need, launch proven interventions and evaluate results.

Utilizing partners offers:

- Greater manpower
- Additional expertise and broader knowledge base
- Access to greater customer base
- Access to additional sources of data
- Input from local groups for identification of risk areas and populations
- Support for changes in laws and regulations

Although it may take years to cultivate partnerships and relationships, it is worth the time and investment to make injury and violence prevention more visible and effective.

### **Suggested Partners:**

- Hospital and medical providers
- Emergency Medical Service providers
- School Districts (Community in Schools, SHAC – School Health Advisory Council, social clubs)
- Local Colleges and Universities
- Area Agencies on Aging – Councils of Government
- Local government entities
- Local law enforcement
- Local fire and rescue (include volunteers)
- Poison Control Center
- Parks and Recreation services
- Help Centers (shelters, food banks)
- Mothers Against Drunk Driving (MADD)
- Local drug and alcohol intervention programs
- Media
- AgriLife Extension Service – 4-H
- Texas Department of Transportation (TX DOT)
- Safe Kids
- Department of State Health Services – Regional Trauma Advisory Councils

- 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](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).

## Hospital-Based Injury Program Example of Using Partners

Efforts to address prevention of shaken baby injuries (SBS)/abusive head trauma have been coordinated throughout Central Texas by utilizing several partners. The members of the Central Texas Trauma Regional Advisory Council, the Child Abuse Prevention Institute at Scott & White, the Scott & White Trauma Injury Prevention program, Children's Miracle Network, local law enforcement agencies, and the Kohl's Cares Foundation joined together to raise awareness, provide education and reduce the number of children injured through this mechanism. The project included the following components:

- The Period of PURPLE Crying materials<sup>2</sup> were adopted for use at seven regional hospitals and clinics that provide care for pregnant moms and delivery of babies.
- All participating medical facilities signed agreements of participation and adherence to the PURPLE message.
- Scott & White staff received the necessary training to provide in-service education for participating facilities/staff members who would be presenting the education at bedside to the families of newborns.
- Part of the PURPLE messaging includes having parents view a short educational message, followed by a conversation with a care provider prior to newborn discharge. The families also receive a copy of the Period of PURPLE crying DVD to take home.
- Copies of the DVD were purchased through a grant from Children's Miracle Network and shared with all participating facilities for distribution.
- Where possible, the taped message was embedded in internal television systems for in-patient viewing. Where that was not possible, DVD players were provided through the Miracle Network funding.
- The Kohl's Cares Foundation provided funding to create the Safe Babies at Scott & White program. As part of the Trauma Injury Prevention program, community education sessions are held at locations that serve families, such as Pregnancy Support Centers, Family Practice Clinics, WIC and Health Department offices, Head Start locations, School District health classes, PREP support classes at local high schools, City and County mandated court programs, health fairs, etc.
- Law enforcement agencies conduct annual in-service training to ensure that officers are aware of the signs and have understanding about the follow-up and availability of resources for families. Scott & White staff is available to assist when needed.

To evaluate the program content, processes and impact data from multiple sources is reviewed periodically. The Central Texas Regional Trauma Council houses a regional trauma registry which is reviewed at least twice a year, as well as Child Fatality Review documents and additional appropriate sources.

**Component 3**

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

### **Component 3: Provide formal injury and violence prevention training opportunities for Injury Prevention Coordinator.**

#### **Why is training/continuing education important?**

Injury and Violence Prevention (IVP) Programs need to regularly support continuing education and training for staff members. Because IVP programs address a diverse range of social, behavioral, policy and industrial conditions, IVP professionals need a multi-skilled set of education and knowledge. This knowledge covers a vast array of specific areas including data and evidence collection, program development and evaluation, fundraising, grant writing, public relations and marketing, advocacy and policy around identified areas of injury and violence prevention. Professional partners bring a broad perspective in the field of IVP. Training for IVP in the public health approach, though not necessarily formal, can be provided via multiple sources. Along with a basic foundation of university degree, additional sources of training/continuing education can include self-studies, utilizing both the internet and/or book or article review.

#### **Suggested Web Based Trainings:**

- National Training Initiative (NTI) Core Competencies [www.safestates.org/NTICoreCompetencies](http://www.safestates.org/NTICoreCompetencies).
- Principles of Prevention. [www.CDC.gov/violenceprevention](http://www.CDC.gov/violenceprevention). The course—which offers continuing education credits—teaches key concepts of primary prevention, the public health approach, and the social-ecological model.
- Road Traffic Injury Prevention and Control in Low- and Middle-Income Countries-- online training certificate program on *Road Traffic Injury Prevention and Control in Low- and Middle-Income Countries (RTIP)*. While this is a specific prevention program, there are fundamentals in the concept of assessment of health and economic burdens, injury prevention, and evaluation. [www.jhsph.edu/](http://www.jhsph.edu/) and search for injury prevention courses. A certificate for completing course modules is offered.
- The **Society for Advancement of Violence and Injury Research (SAVIR)** is a professional organization that provides leadership in the field of injury prevention. There is a cost of individual membership to this organization. [www.savirweb.org/](http://www.savirweb.org/).
- The **Safe States Alliance** is a non-profit organization and professional association whose mission is to strengthen the practice of injury and violence prevention. There is a cost of individual membership to this organization. They have self study trainings available including: *Injury Prevention 101*. [www.safestates.org/](http://www.safestates.org/).
- The **World Health Organization TEACH VIP E-learning** is a comprehensive injury and violence prevention curriculum developed for self-paced, self-administered training online. [www.who.int/](http://www.who.int/) .
- The **Center for Disease Control and Prevention** on Injury and Violence Prevention and Control. [www.cdc.gov/Injury/](http://www.cdc.gov/Injury/).

- 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/](http://www.who.int/violence_injury_prevention/violence/en/).
- GETAC Trainings: check on [www.dshs.state.tx.us/emstraumasystems](http://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/](http://www.jhsph.edu/) and search for Summer Institute



**Component 4**  
**Select and Implement Evidence-Informed  
Prevention Strategies**

## **Component 4: Select and implement evidence-informed prevention strategies.**

### **What does “evidence-informed” mean?**

There is a lot of emphasis placed on the importance of using “evidence-informed” or “evidence-based” strategies when selecting and implementing injury and violence prevention activities. However, the terms may be confusing to persons without a public health degree. Evidence-informed means using the best research and information that is available from well-conducted research studies.<sup>1</sup>

### **Why is it important to use evidence-informed strategies?**

Historically, resources (i.e., funding, staff, etc.) have been limited for injury and violence prevention programs. Therefore, it is critical that the limited funds available not be wasted on activities that have not been adequately evaluated or have been proven to be ineffective. There are many scientifically-evaluated, evidence-informed interventions that have proven effective in reducing injuries and violence. However, there is often a “knee-jerk” reaction when selecting an intervention – a trap that many organizations/groups fall into when implementing prevention programs. The easiest, most obvious, most affordable, or most acceptable strategy is seldom the most effective. As is the case when selecting treatment for injured patients, knowledge of the range of effective injury prevention strategies is critical when choosing prevention options.<sup>2</sup> Implementing programs that are not evidence-informed or that haven’t been appropriately evaluated, can result in a waste of resources and time, and ultimately, a lack of credibility.<sup>3</sup>

### **Where do we find evidence-informed strategies?**

Information that comes from properly-designed and evaluated research studies are the best source to obtain evidence, particularly information that comes from systematic reviews. A systematic review synthesizes the results of several studies on a particular topic and sums up the best available research. Studies included in a review are screened for quality, so that the findings of a large number of studies can be combined. Often injury and violence prevention practitioners do not have the training or skills to critically appraise and determine whether the evidence is from a valid research study. Therefore, using information obtained from a systematic review ensures that the most effective strategies will be selected and implemented. Below are acceptable sources for evidence-informed information about injury and violence prevention strategies.

- **CDC: Guide to Community Preventive Services** – is a free resource to help you choose programs and policies to improve health and prevent disease in your community. Systematic reviews are used to answer these questions:
  - Which program and policy interventions have been proven effective?
  - Are there effective interventions that are right for my community?

- 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.*

The following are useful tools in designing and implementing strategies.

## The Spectrum of Prevention



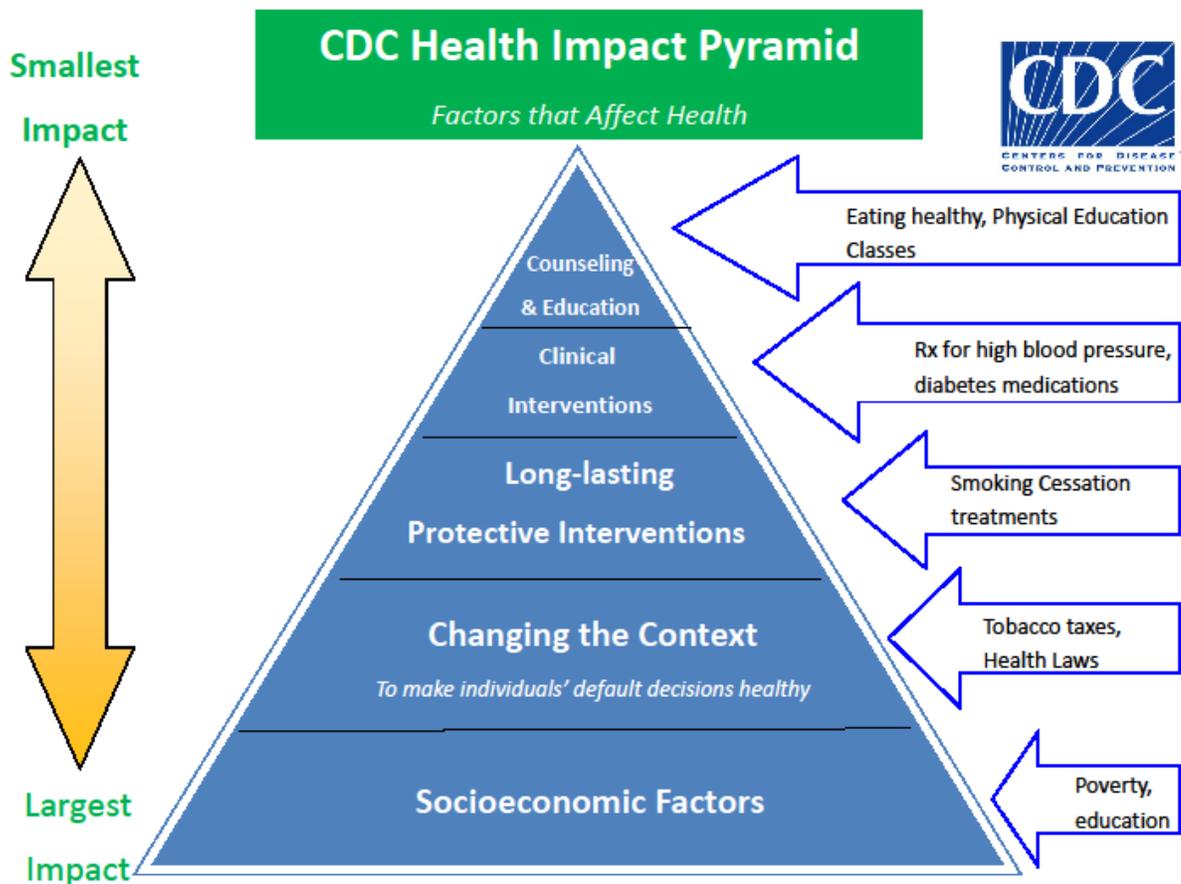
**Spectrum of Prevention** was developed by the Prevention Institute and helps expand prevention efforts beyond education models by promoting a multifaceted range of activities for effective prevention ([www.preventioninstitute.org](http://www.preventioninstitute.org)).

The Spectrum is comprised of six levels of increasing scope that are complementary to each other. Strategies that implement activities in each of the six levels are the most effective in resulting in positive change. Examples of Spectrums on the following topics are available on the Department of State Health Services website at <http://www.dshs.state.tx.us/emstraumasystems/injurypreventioncommittee.shtm>.

- Prevention of Alcohol-Related Crashes
- Child Passenger Safety
- Child Maltreatment Prevention
- Concussions
- Drowning Prevention
- Intimate Partner Violence Prevention
- Residential Fire Prevention
- Prevention of Older Adult Falls
- Pedestrian Safety
- Teen Driving Safety

*See Appendix 1 for a hospital-based injury program example on older adult falls.*

**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.<sup>4</sup> 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.<sup>5</sup>



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

## **Additional Resources**

- **Associations**
  - Safe States Alliance ([www.safestates.org](http://www.safestates.org))
  - Children's Safety Network (<http://www.childrenssafetynetwork.org/>)
  - Society for Advancement of Violence and Injury Research (SAVIR) (<http://www.savirweb.org/>)
  - The Eastern Association for the Surgery of Trauma/Injury Control and Violence Prevention (<https://www.east.org/resources/injury-control-and-violence-prevention>)
  
- **Publications**
  - *Handbook of Injury and Violence Prevention (Second Edition)*. Authors: Doll, Lynda; (EDT)/ Bonzo, Sandy E. (EDT)/ Sleet, David A. (EDT)/ Mercy, James A. (EDT)/ Haas, Elizabeth N. (EDT) Publication Date: 2006.
  - *Injury Prevention and Public Health: Practical Knowledge, Skills, and Strategies*. Authors: Christofell, Tom; Gallagher, Susan Scavo. Publication Date: 2006.
  
- **Tools**
  - Revised Intervention Decision Matrix. Developed by Fowler, CJ and Dannenberg, AL. Revised 1998, 2000, 2003 & 2010. See *Appendix 2*.

## **References:**

1. Rubin, A. *Statistics for Evidence-Based Practice and Evaluation*. 2<sup>nd</sup> ed. Brooks/Cole, Cengage Learning: Belmont, CA. 2010.
2. Fowler CJ. Injury Prevention. In *Trauma Nursing: From Resuscitation Through Rehabilitation*, 4<sup>th</sup> Ed. McQuillan KA, Makic MBF, Whalen E (editors). 2009.
3. Adapted from Carol Runyan, Ph.D., University of Colorado at Denver, and Paula Yuma, M.P.H., University of Texas (personal communication). 2013
4. Frieden, TR. A Framework for Public Health Action: The Health Impact Pyramid. *AJPH* 2010 April; 100(4): 590-595. Available at URL: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2836340/>. Accessed 7 March 2014.
5. Centers for Disease Control and Prevention. "Motor-Vehicle Safety: A 20<sup>th</sup> Century Public Health Achievement," *Morbidity and Mortality Weekly Report*, Vol. 48, No, 18, May 14, 1999, pp. 369-74. Available at URL: [www.cdc.gov/mmwr/preview/mmwrhtml/mm4818a1.htm](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4818a1.htm). Accessed 7 March 2014.

## **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

- Promote raising awareness of who is at risk for falls within families and the community
- Host a local medication pharmacy review
- Sponsor an older adult day at your hospital and provide information on home safety, medication review, eye examinations, etc.

### **Strengthening Individual Knowledge & Skills**

- Utilize social media to educate individuals and families about ways to prevent falls among older adults
- Partner with local groups offering exercise classes. It is important that the exercises focus on increasing leg strength and improving balance, and that they get more challenging over time. Tai Chi programs are especially good.

**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**

## Component 5: Evaluate program processes and strategies to determine value and impact.

### What does “evaluation” mean?

Evaluation is an ongoing process that begins as soon as someone has the idea for a program; it continues throughout the life of the program; and it ends with a final assessment of how well the program met its goals. <sup>(1)</sup> Evaluation can be applied on a macro or micro level, measuring the effectiveness of an entire injury department or broken down to measure specific components of the department functions, programs, interventions, or even specific activities of an intervention. This is accomplished by understanding how to apply the different types of evaluation (i.e., Formative, Process, Impact, and Outcome) in the process of injury programming.

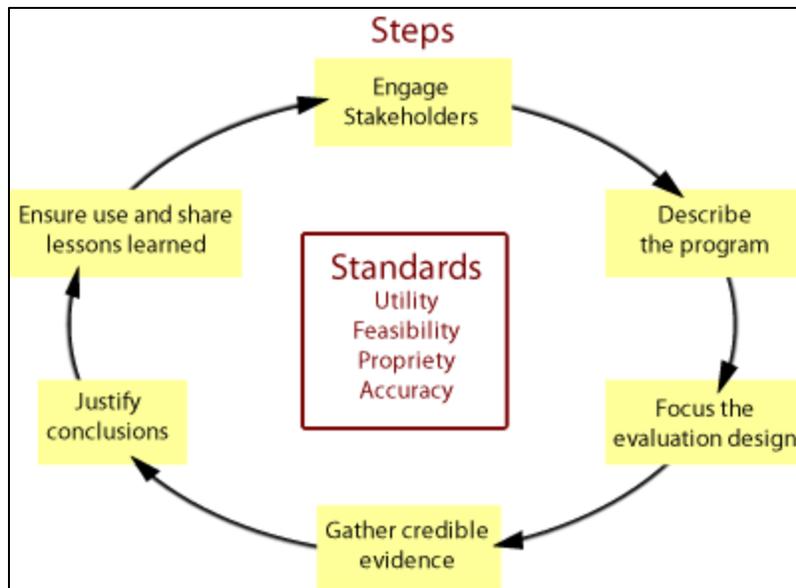
Often the terms “evaluation” and “research” are used interchangeably. However, there are some very clear differences between these two methods. The table below indicates the key differences between evaluation and research. <sup>(2)</sup>

RESEARCH	EVALUATION
Seeks to generate new knowledge	Gathers information for decision making
Is researcher-focused	Is stakeholder-focused
Proves or disproves a hypotheses	Answers key questions
Both use methods and analysis	
Make research recommendations	Recommendations based on key questions
Publish results	Report to stakeholders

The quality of evaluation matters even though the complexity of an evaluation may vary from a simple design to very involved process. In order to establish a foundation for quality evaluation a set of 30 standards were adopted from the Joint Committee on Standards for Educational Evaluation, and answer the question, “Will the this evaluation be effective?” The standards are now recommended as criteria for judging the quality of program evaluation efforts in public health and assesses the quality of evaluation activities, determining whether a set of evaluative activities are well-designed and working to their potential. <sup>(3)</sup> The 30 standards are not included in this document, but have been condensed into the following four groups for ease of understanding their purpose.

The four groups of evaluation standards:

- Utility standards ensure that an evaluation will serve the information needs of intended users.
- Feasibility standards ensure that an evaluation will be realistic, prudent, diplomatic and frugal.
- Propriety standards ensure that an evaluation will be conducted legally, ethically and with due regard for the welfare of those involved in the evaluation, as well as those affected by its results.
- Accuracy standards ensure that an evaluation will reveal and convey technically adequate information about the features that determine worth or merit of the program being evaluated.



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. <sup>(4)</sup>

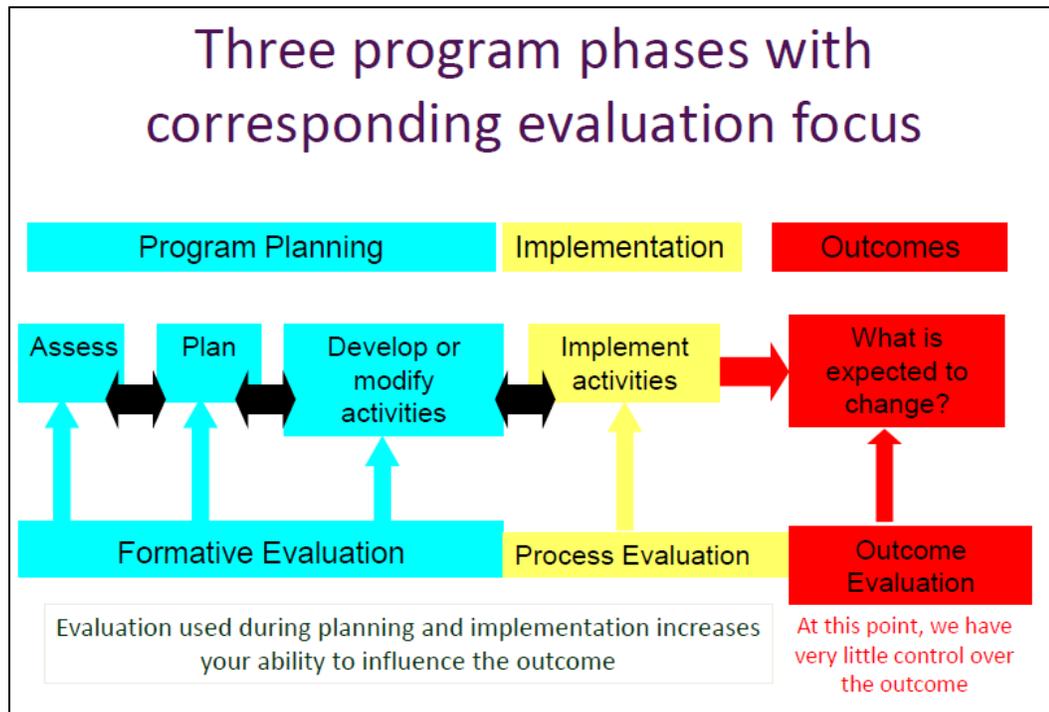
Evaluation, more often than not, is added to injury prevention programs after implementation has begun. However, the true impact of a program may not be readily detectable without building in an evaluation during the program planning phase. <sup>(5)</sup> The main objective of evaluation is not just to discover whether a program works, but to establish *how* and *why* it works. <sup>(4)</sup> 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. <sup>(5)</sup> 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. <sup>(5)</sup> 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. <sup>(5)</sup>
- **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. <sup>(5)</sup>
- **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

morbidity rates, mortality rates, or other health status indicators such as injuries among a defined at-risk population. <sup>(5)</sup>

Implementing different types of evaluation throughout the phases of a program assists planners to understand a program's value and effectiveness. The evaluation types implemented throughout the common phases of injury programming is shown in the image below. <sup>(7)</sup>



Source: Fowler, C. C. (2011). *Setting The Stage For Evaluation: What We Need To Know Before We Begin* [PowerPoint slide].

### **Why is it important to use evaluation strategies?**

The implementation and use of evaluation strategies are one of the most important components of highly productive and effective injury prevention programs and yet it is often misunderstood, underutilized, or disregarded completely. It is a misconception that evaluation is complicated; takes a lot of time, effort, resources or funding to do right. These perceived barriers should not deter evaluation from being implemented.

Evaluating injury prevention efforts is vital to reduce the rising toll of mortality, morbidity, and economic losses arising from injuries, not only to identify effective prevention measures but also to shift resources from what does not work to what does. <sup>(8)</sup> Stewardship of resources is critical in our healthcare environment today. Administrators, program planners, and coordinators need to make decisions based on adequate evaluation.

Without adequate evaluation, programs are simply not able to demonstrate the value of their work to stakeholders, and just as equally important, they are unable to demonstrate whether the interventions they are implementing are having an impact or not. <sup>(9)</sup> Often program planners

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.<sup>(9)</sup>

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:<sup>(10)</sup>

- 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".

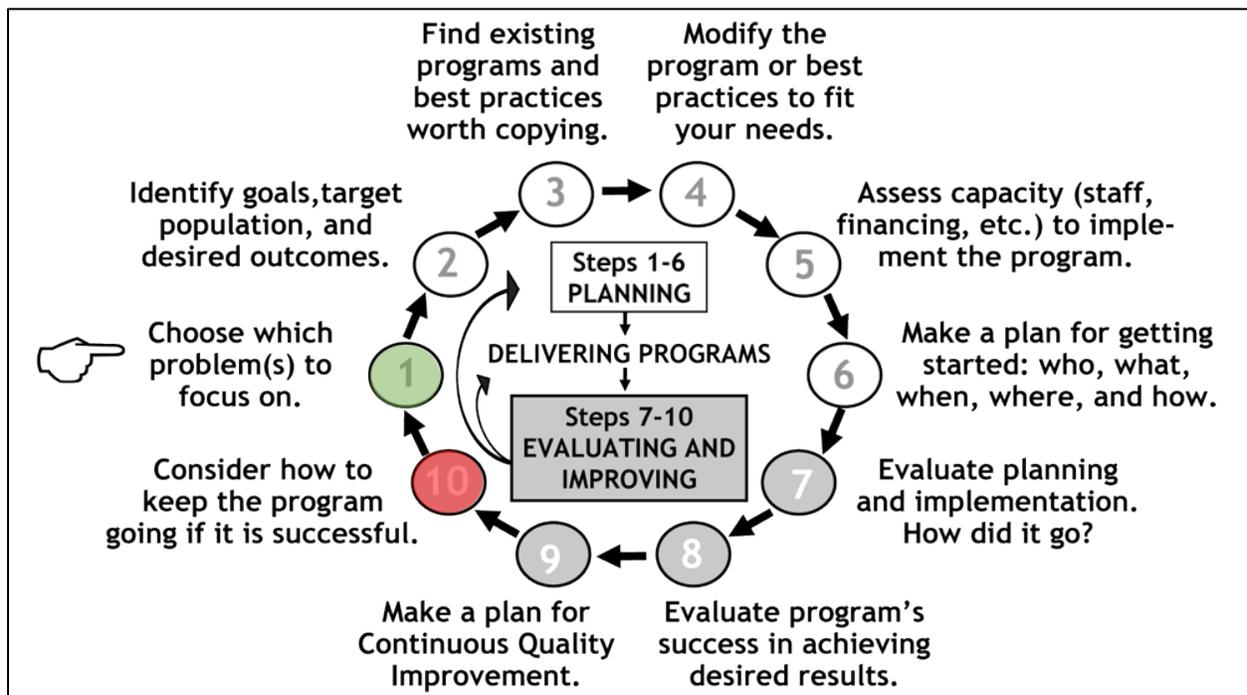
**4. W.K. Kellogg Foundation Evaluation Toolkit**  
 A guide to design an effective and useful evaluation.

**What additional tools can assist program evaluation?**

Logic models are often great ways to develop a program plan. While developing a logic model, program planners identify key measures on which evaluation can be designed. Additionally, logic models assist planners to identify cause and effect changes as the program begins operations and adaptations are made. Below is a simplified example of a logic model. This logic model is completed in numerical order beginning at 1 and ending at 5. Logic modeling, in its basic form is a series of questions that start from where or with what you attempt to achieve and leads you to where you need to begin.

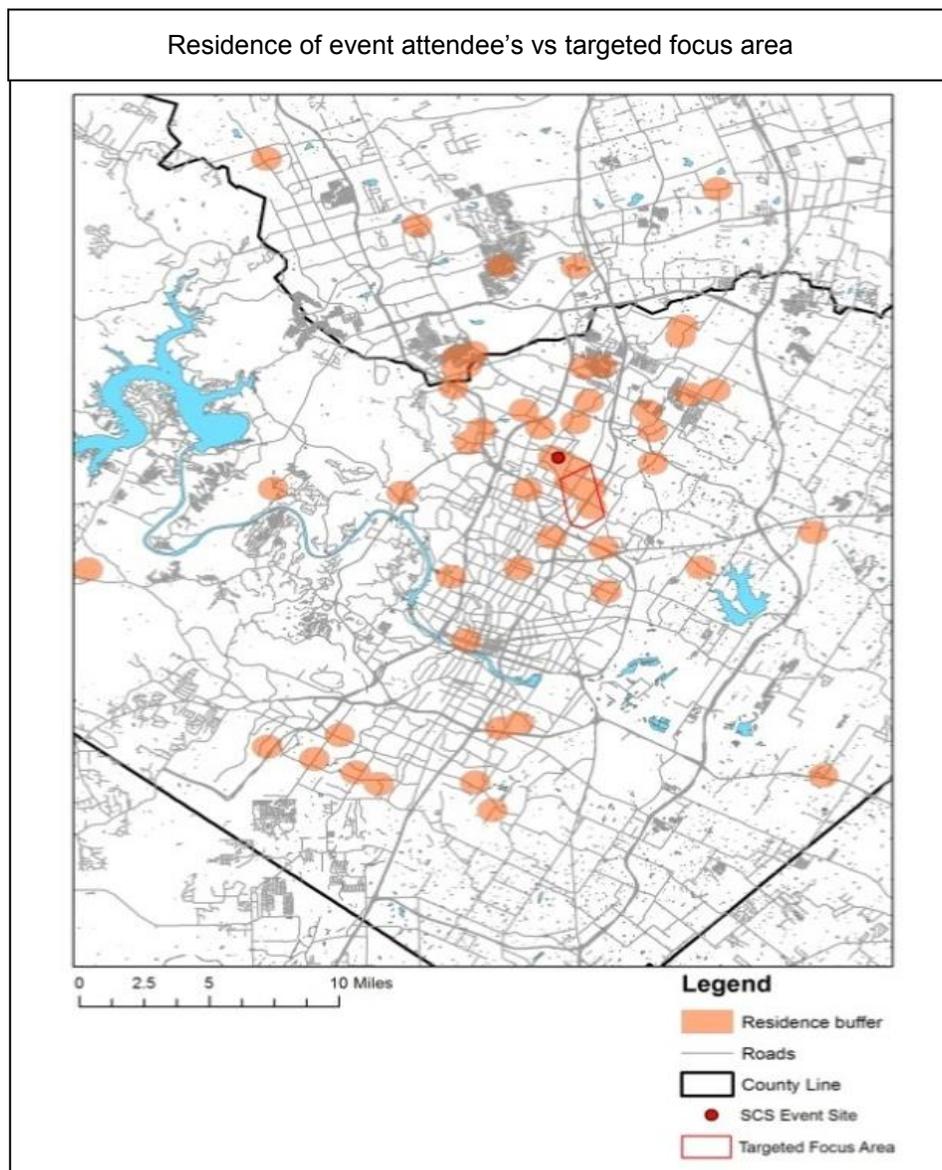
4	2	3	5	1
RESOURCES	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACT
What do we need to invest?	What activities will we do?	What is produced through these activities?	What does success look like?	What do we need to impact?

Another form of logic is the 10 steps to develop a public health program. As indicated in steps 7-10 evaluation is included in the planning and implementation of programming. It emphasizes how program planning and implementation is a continuous cycle that includes evaluation. By conducting evaluation it allows planners to fix or change specific components of the program.



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.<sup>(11)</sup> 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.<sup>(11)</sup>



While GIS systems can be very helpful they can also be complicated to use and expensive. However, the concept of geographically viewing program data can still be helpful in its most simplified form, a map and push pins.

### **Additional Resources**

- **The American Evaluation Association**
  - <http://www.eval.org>
  - The American Evaluation Association is an international professional association of evaluators devoted to the application and exploration of program evaluation, personnel evaluation, technology, and many other forms of evaluation. Evaluation involves assessing the strengths and weaknesses of programs, policies, personnel, products, and organizations to improve their effectiveness. AEA has approximately 7700 members representing all 50 states in the United States as well as over 60 foreign countries.
  
- **CDC Program Performance and Evaluation Office**
  - <http://www.cdc.gov/eval/resources/index.htm>
  - *Introduction to Program Evaluation for Public Health Programs: A Self Study Guide*
    - This document is a “how to” guide for planning and implementing evaluation activities. The manual, based on CDC’s Framework for Program Evaluation in Public Health, is intended to assist managers and staff of public, private, and community public health programs to plan, design, implement and use comprehensive evaluations in a practical way
  
- **Better Evaluation**
  - <http://betterevaluation.org>
  - An international collaboration to improve evaluation practice and theory by sharing information about options (methods or tools) and approaches.
  
- **The Evaluation Exchange**
  - <http://www.hfrp.org/evaluation/the-evaluation-exchange>
  - The Evaluation Exchange is a periodical that contains new lessons and emerging strategies for evaluating programs and policies, particularly those focused on children, families, and communities.

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