

Appendix A-V: Table of Contents

- Appendix A: Policy Evaluation Example: Child Restraint Law Expansion**
- Appendix B: Policy Evaluation Example: Restricting Hours of Alcohol Sales to Prevent Excessive Alcohol Consumption and Related Injuries**
- Appendix C: Challenges and Potential Solutions to Policy Evaluation**
- Appendix D: Glossary**
- Appendix E: Types of Stakeholders**
- Appendix F: Key Steps in Selecting or Hiring an Evaluator**
- Appendix G: Logic Model Basics**
- Appendix H: Logic Model Worksheet**
- Appendix I: Logic Model for Theoretical Change in an Alcohol Injury Policy Intervention**
- Appendix J: New Mexico’s Driving While Intoxicated Prevention Program: Logic Model Example**
- Appendix K: Policy Components**
- Appendix L. Examples of Outcomes, Indicators, and Possible Data Sources in Injury Prevention and Control**
- Appendix M: Maximizing and Supplementing Evaluation Resources**
- Appendix N. Policy Database Examples**
- Appendix O: Evaluation Designs**
- Appendix P: Selected Surveillance Systems Pertaining to Injury Prevention and Control**
- Appendix Q: Resources for Accessing and Linking Existing Data**
- Appendix R: Reliability and Validity**
- Appendix S: Steps Before Data Analysis**
- Appendix T: Overview of Data Analysis Methods**
- Appendix U: Tips for Communicating with Partners and the Public**
- Appendix V: Additional Resources**

Appendix A: Policy Evaluation Example: Child Restraint Law Expansion

Refer to Brief 1 for additional information similar in topic to **Appendix A**.

This example focuses on an evaluation of the impact of a policy expanding a child restraint law to apply to children up to the age of 8.

Stakeholders

To evaluate the impact of a new child restraint law, state staff met with a number of stakeholders, including staff evaluators, representatives from the office of injury, the department of motor vehicles, police departments and state troopers, the local hospital, and a nonprofit partner. Participants discussed the content of the law and how it had been implemented. At the end of the meeting, several of the participants agreed to serve on the core evaluation team and roles and responsibilities were assigned. Although no external funding for the evaluation was available, the team included a state employee with expertise in statistics, who was able to assist with the technical aspects of the evaluation.

Describing the Process

Over the course of several meetings, team members began describing the policy. They revisited the process that led to the enactment of the policy, the specific language of the policy, and how the policy was implemented. Because this law was an expansion of a previous law, they also conducted a comparison of the new and previous laws. A logic model was created that outlined the inputs, activities, and outputs of the policy, as well as the short-term, intermediate, and long-term outcomes. The team also identified the potential indicators for these outcomes, including child restraint seat use and frequency and severity of motor vehicle crash injuries.

Focusing the Evaluation

Because the implementation of the restraint law had already been monitored and enforced by the state troopers and local police, and because the office of injury had access to state surveillance data, the team chose to focus their evaluation on the impact of the law. They selected the following evaluation questions:

- Did the law increase the use of child restraint seats among children ages 4–8?
- Did the law have an impact on the injury rate, severity of injuries, or both among all children under the age of 8 who were involved in crashes?
- Was this impact different for children under 4 (who were covered by the previous law) than for children ages 4–8 (who were covered by the new law)?

Selecting Evaluation Design

The team selected a time series design with a comparison group of children under 4. This was chosen as a comparison group because the previous child restraint law covered them. The team selected child restraint seat use as the short-term outcome and rates of injury and severity of injury as the long-term impacts.

Data Collection

The team accessed a database on motor vehicle crashes that resulted in injury or death. Maintained by the state department of motor vehicles, the database provides data on injury severity, crash date, and individual safety equipment use. The team also used demographic data from the National Center for Health Statistics to estimate population-based injury rates. To allow for examination of the outcomes before and after the enactment of the law, the team pulled data from 2 years before and 2 years after the law went into effect. Because there was a great deal of awareness about the law, the team believed that 2 years was adequate to see some change, but they planned to re-evaluate in another year.

Data Analysis

To examine the difference in the indicators between the two age groups, the statistician performed a chi-square test. Additional statistical tests were conducted to examine the impact of the law on injury rates, controlling for the use of child restraint seats. The analyses found a 72% increase (from 29% to 50%) in child restraint use among 4- to 8-year-olds. In addition, injuries among 4- to 8-year-olds were reduced by 18%, but no change was seen in traffic injury rates for 0- to 3-year-olds.

Justifying Conclusions

When the team members discussed the results, they articulated several limitations of the evaluation, including the fact that these were early effects of the law and that no data were available on the misuse of child restraint systems. However, the team concluded that the evaluation demonstrated that the law did have an impact on injury rates among 4- to 8-year-olds that could be explained by increased use of child restraint seats.

Communicating Results

To ensure that the results of the evaluation were shared, the team decided to take a two-pronged approach to dissemination. First, the team prepared an evaluation report, which included details about the evaluation methodology, to disseminate to partners and post on their website. Second, the core team invited all of the stakeholders from the original meeting to a discussion of the evaluation results. Partner stakeholders who were part of nonprofit partners used the evaluation results to create a press release, which generated a number of follow-up articles, and additional requests for information. The team also created a one-page overview of the evaluation results to provide to any policymakers that requested information.

Loosely based on Sun, K., Bauer, M., & Hardman, S. (2010). Effects of upgraded child restraint law designed to increase booster seat use in New York. Pediatrics, 126, 484–489.

Appendix B: Policy Evaluation Example: Restricting Hours of Alcohol Sales to Prevent Excessive Alcohol Consumption and Related Injuries

Refer to Brief 1 for additional information similar in topic to **Appendix B**

This example focuses on an impact evaluation of a policy restricting hours of alcohol sales in an effort to reduce harm related to excessive alcohol consumption.

Stakeholders

To evaluate the impact of policies that restrict the hours of alcohol sales to reduce excessive alcohol consumption and related injuries, a lead evaluator at the state pulled together a number of stakeholders, including representatives from the office of injury at the state health department, the department of motor vehicles, police departments and state troopers, local hospitals, and a nonprofit partner. Local alcohol retailers, who had expressed opposition to the laws, were also invited to the meeting. Participants discussed issues about the development, content, and implementation of the law.

Describing the Process

The team created a logic model for the policy and outlined the inputs, activities, and outputs, as well as the short-term, intermediate, and long-term outcomes. The team also discussed potential indicators for these outcomes, including decreased sales of alcohol during restricted hours (short-term), reductions in excessive alcohol consumption (intermediate), and reductions in injuries and deaths related to excessive alcohol consumption (long-term). This process assisted in identifying potential variables and data collection points to include in the evaluation.

Focusing the Evaluation

The team chose to focus their evaluation on both the implementation and impact of the law. They knew they would have access to surveillance and administrative data because of the involvement of key stakeholders, including state and local health department staff. The team selected the following evaluation questions:

- Does restricting the hours of alcohol sales alter alcohol-purchasing habits?
- Does restricting the hours of alcohol sales reduce injuries related to excessive alcohol consumption?
- Are there any unintended consequences of restricting the hours of alcohol sales (related to alcohol consumption or related injury)?
- Does the level of restriction (number of hours) influence the impact of the policy?

Selecting Evaluation Design

The team chose to use a quasi-experimental evaluation design using non-equivalent comparison groups and time series. As comparison groups they selected a number of cities enacting various restrictions on hours of alcohol sales. The team also used time series designs to examine trends in the various injury indicators within each city. This design allowed them to compare cities with similar and different restrictions as well as to compare changes in indicators within and across cities over time.

Data Collection

The team used a combination of existing datasets. These included national databases, such as the Fatality Analysis Reporting System and nonfatal injury reports from the Web-based Injury Statistics Query and Reporting System (WISQARS™), as well as statewide databases, such as the database of motor vehicle crashes maintained by the state department of motor vehicles. The team also obtained data from local administrative datasets on alcohol-related emergency admissions, arrests for violent crimes related to alcohol, and monthly assault rates. To examine purchasing behavior, the team obtained data through the U.S. Alcohol Epidemiologic Data System, which collects data on sales, tax receipts, and alcohol shipments. To allow for examination of the

outcomes before and after the enactment of the restrictions, the team pulled data from before and after the restrictions went into effect. The team examined percentage change in indicators over time as well as between different jurisdictions and different levels of restrictions.

Justifying Conclusions

The results of the analysis were shared with team members, who discussed potential explanations as well as limitations. The team also compared the results with information from the CDC Guide to Community Preventive Services to see if the results were consistent. Some of the limitations of the evaluation included the fact that there were multiple sources of data across the jurisdictions, differences in time periods of restriction implementation between jurisdictions, lack of data on actual alcohol consumption rates, and varying degrees of enforcement of restrictions between jurisdictions. In addition, team members acknowledged that the evaluation did not factor in the impact of other confounding contextual factors, such as changes in alcohol taxes. However, the team concluded that the evaluation demonstrated that restricting the hours of alcohol sales by more than 2 hours was related to a decrease in alcohol-related injury. The evaluation also found, however, that the relation was not present when the restriction resulted in less than 2 hours of change, indicating that the degree of restriction was an important factor.

Communicating Results

The team prepared an evaluation report to disseminate to partners, which contained a number of details about the methodology and statistical analyses used. The team also wrote an article about the evaluation methodology and results and published it in a major journal. Additionally, one of the partner organizations used some of the evaluation results when developing a policy brief about the topic of restricting hours of alcohol sales.

Loosely based on Hahn, R. A., Kuzara, J. L., Elder, R., Brewer, R., Chattopadhyay, S., Fielding, J., Naiml, T.S., Toomey, T., Middleton, J.C. & Lawrence, B. (2010). Effectiveness of policies restricting hours of alcohol sales in preventing excessive alcohol consumption and related harms. American Journal of Preventive Medicine, 39, 590–604.

Appendix C: Challenges and Potential Solutions to Policy Evaluation

Refer to Brief 1 for additional information similar in topic to **Appendix C**.

Policy Evaluation Challenges	Potential Solutions
Lack of resources or clear responsibility for evaluation	<ul style="list-style-type: none"> ■ Create a clearly written evaluation plan with specific roles and responsibilities. ■ Identify and partner with the stakeholder who has responsibility for monitoring the implementation (if that is not your agency).
Fear of evaluation and lack of familiarity with policy evaluation methods	<ul style="list-style-type: none"> ■ Start small by evaluating the content or implementation of a policy with few components. ■ Reach out to partners within and outside your agency.
Lack of control over policy implementation	<ul style="list-style-type: none"> ■ Conduct a policy implementation evaluation or closely monitor implementation so that you clearly understand how the policy was implemented.
Rapid pace of policy	<ul style="list-style-type: none"> ■ Strive to develop the evaluation plan before implementation if at all possible. ■ Identify potential indicators up front to plan for their collection.
Political scrutiny and desire for quick production of results	<ul style="list-style-type: none"> ■ Identify short-term and intermediate outcomes in addition to long-term impacts.
Lack of strong evidence base to support policy	<ul style="list-style-type: none"> ■ Reach out to partners to identify any unpublished evaluations. ■ Conduct evaluation on multiple phases of the policy (content, implementation, and impact) to inform interpretation of results.
External and contextual factors such as economic conditions or public awareness	<ul style="list-style-type: none"> ■ Measure contextual factors to the extent possible. ■ Use an evaluation plan that measures short-term and intermediate outcomes that logically link to long-term outcomes.
Lack of access to appropriate data	<ul style="list-style-type: none"> ■ Identify available pre-existing data sources and explore the possibility of data linkage to increase analysis possibilities (see Brief 6).
Lack of appropriate measures	<ul style="list-style-type: none"> ■ Conduct a stakeholder discussion to assist with identifying or developing appropriate measures. ■ Reach out to communities that have done similar evaluations.
Concern about allowable participation in policy development process	<ul style="list-style-type: none"> ■ Request clarification of rules. ■ Identify key nongovernmental partners to evaluate areas best suited to their capacities and expertise.
Challenges of finding an equivalent comparison group	<ul style="list-style-type: none"> ■ Identify variables within the implementing community (such as degree of implementation) that may allow for comparisons. ■ Consider alternative designs. ■ Look for opportunities to use within-group comparisons.
Conflicting results	<ul style="list-style-type: none"> ■ When weighing the results, consider how accurately the methods were implemented, the extent to which data accurately represent the indicator or impact, your confidence level in the logic model and theory of change, the statistical significance and magnitude of findings, the assumptions made by statistical tests, and the match between evaluation methods and evaluation questions.
Lag in availability of data for evaluation	<ul style="list-style-type: none"> ■ Ensure that your evaluation plan factors in availability of data ■ Partner directly with the agency that collects the data rather than waiting for the data to become publicly available

Appendix D: Glossary

The terms below are defined within the context of their use in the associated briefs.

Accuracy standards: A set of evaluation standards that ensure that an evaluation will provide technically adequate information about the program or policy being evaluated.

Barrier: An obstacle that limits or prevents the implementation of a policy.

Categorization schema: A model that can be developed to compare the content of different policies by describing the components of a subset of policies and then looking for different categories or components that occur across those policies.

Content evaluation: A type of formative evaluation that focuses on the content or design of a policy.

Cost-benefit analysis: An examination of the overall costs of the policy in relation to any cost savings that occurred because of the policy.

Cost-effectiveness analysis: An examination of the costs of the policy in relation to the cost per outcome (injury avoided).

Data linkage: A technique for expanding the amount of pre-existing data available by linking data from two or more data sets to provide a better picture of the circumstances surrounding an injury event.

Facilitator: A factor or characteristic that assists or supports the implementation of a policy.

Feasibility standards: A set of evaluation standards that ensure that an evaluation will be realistic, prudent, diplomatic, and frugal.

Formative evaluation: A type of policy evaluation intended to guide improvement of the current policy intervention. Development or content evaluation and process/implementation evaluation are both types of formative evaluation.

Impact evaluation: A type of summative evaluation that focuses on the effects of the policy. An impact evaluation can focus on immediate and intermediate effects of a policy such as changes in behaviors, attitudes, or knowledge or on long-range results of a policy such as health indicators.

Impact: A component of a policy evaluation logic model, an impact is a long-term change in indicators, such as a decrease in injury rates or severity.

Indicator: A specific, observable, and measurable characteristic of change. It demonstrates progress toward outcome or impact.

Input: A component of a policy evaluation logic model, an input is a resource required to implement a policy, such as stakeholders, time, or funding.

Logic model: A helpful tool used to depict graphically how a policy is expected to operate. It typically includes inputs, activities, outputs, outcomes, impacts, and context.

Mixed-methods approach: A type of evaluation design that combines multiple designs or methods to provide multiple perspectives. The value of using mixed methods is the possibility of reinforcing findings by using multiple designs and analyses that may demonstrate similar results.

Outcome: A component of a policy evaluation logic model, an outcome is a short- or intermediate-term change in the target audience's behaviors, attitudes, and knowledge—such as use of seat belts or attitudes toward domestic violence— as a result of a policy.

Output: A component of a policy evaluation logic model, an output is a direct product of policy implementation activities. Changes made to a product to improve its safety are one example.

Policy evaluation: The process of applying evaluation principles and methods to examine the development, content, implementation, or impact of a policy. Policy evaluation may be used to document success in policy development; assess support for and compliance with existing policies; or demonstrate the effectiveness of existing policies.

Process or implementation evaluation: A type of formative evaluation that focuses on implementation of a policy.

Propriety standards: A set of evaluation standards that 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.

Reliability: The extent to which a measure can be expected to produce similar results on repeated observations of the same condition or event.

Summative evaluation: A type of policy evaluation that looks at the performance of the policy intervention once it has been implemented. Impact evaluation and economic evaluation are two types of summative evaluation.

Theory of change: A theory explaining the connection between policy activities and their outcomes. Not all theories of change are supported by research or evidence. Establishing whether a theory of change is evidence based can assist in interpreting evaluation results.

Utility standards: A set of evaluation standards that ensure that an evaluation will serve the information needs of intended users.

Validity: The accuracy of a measure and its ability to measure what it is intended to measure.

Appendix E: Types of Stakeholders

Refer to Brief 2 for additional information similar in topic to **Appendix E**.

Types of Stakeholders		
Type of Stakeholder	Key Skills/Expertise	Key Roles
Policy expert	Expertise in policy process Understanding of critical policy content and implementation factors	Describing the policy Focusing the evaluation design Justifying results Ensuring use and lessons learned
Evaluation expert	Evaluation design and methodology Statistical expertise	Focusing the evaluation Gathering credible evidence Justifying conclusions
Subject matter expert	Subject matter expertise Contextual knowledge	Engaging stakeholders Describing the policy Justifying conclusions Ensuring use and lessons learned
Implementer or other stakeholders impacted by the policy	Contextual knowledge Knowledge of barriers to and facilitators of implementation and evaluation Familiarity with data sources Alternative perspective on results	Engaging stakeholders Describing the policy Gathering credible evidence Justifying conclusions Ensuring use and lessons learned

Examples of Stakeholders in Various Injury Domains		
Policy Example	Stakeholder Categories	Examples of Stakeholders
Regulation requiring prescribing physicians to use serialized, tamper-proof prescription forms	Policy experts	National Association of State Controlled Substances Authorities
	Evaluation experts	Quantitative policy researcher or evaluator
	Subject matter experts	State program staff Researchers
	Implementers	Pharmacists Drug enforcement officials
State law requiring all schools to establish a written anti-violence policy	Policy experts	State injury program director Safe States Alliance members
	Evaluation experts	Quantitative policy researcher or evaluator
	Subject matter experts	State program staff National Academic Centers for Excellence (ACEs) in Youth Violence Prevention
	Implementers	Superintendents of schools Principals
Guidelines for treatment of traumatic brain injury (TBI)	Policy experts	Brain Trauma Foundation representatives
	Evaluation experts	Quantitative policy researcher or evaluator
	Subject matter experts	State program staff
	Implementers	Hospital managers Emergency room physicians

Step by Step – Evaluating Violence and Injury Prevention Policies

Appendix F: Key Steps in Selecting or Hiring an Evaluator

Refer to Brief 2 for additional information similar in topic to **Appendix F**.

- Ensure that the team is in agreement as to what the evaluator will need to accomplish.
- Identify potential candidates through recommendations, referrals or formal solicitation methods.
- Evaluate candidates on the following key competencies²:
 - **Professional Practice:** Follows fundamental norms and values of evaluation practice including application of evaluation standards in an ethical and respectful manner.
 - **Systematic Inquiry:** Understands the technical aspects of evaluation, including qualitative, quantitative, and mixed methods; evaluation design; and data analysis and interpretation; demonstrates awareness of strengths and limitations of designs.
 - **Situational Analysis:** Demonstrates awareness of context of an evaluation, including the evaluability of a policy, relevant stakeholders, competing interests, and political contexts.
 - **Project Management:** Controls practical aspects of work, including negotiating with team, budgeting, identifying needed resources, and sticking to the timeline.
 - **Reflective Practice:** Understands personal strengths and limitations in expertise and skills.
 - **Interpersonal Competencies:** Demonstrates the ability to work effectively with others, including effective communication and negotiation skills and cultural competency.
- If the team chooses to select an external evaluator, establish a selection committee to review proposals and develop criteria to assess candidates. Sample criteria may include the following:
 - Level of professional training.
 - Approach to evaluation.
 - Experience in evaluation.
 - Ability to meet the needs of the team.
 - Content knowledge.
 - Technical skills.
 - Proposed cost.
 - Positive references.
- Rank each candidate using the same criteria, discuss among the selection committee and larger evaluation team, and determine the most qualified evaluator.

2 Stevahn L., King J. A., Ghore G., & Minnema J. (2005). Establishing essential competencies for program evaluators. *American Journal of Evaluation*, 26(1), 43-59.

- Prepare a thorough and comprehensive contract outlining objectives, duties, deliverables, and other considerations. At a minimum, the contract should include the following:
 - Scope of work.
 - Key deliverables and due dates.
 - Responsibilities of the evaluator.
 - Responsibilities of the evaluation team.
 - Data ownership and publication or presentation rights.
 - Payment amount, schedule, and conditions.
- Establish accountability procedures once the evaluator has started to ensure appropriate oversight of the evaluation. Some tools for ongoing accountability include the following:
 - Regular progress reports.
 - Regular meetings between the evaluator and a designated member of the evaluation team.
 - Interim implementation milestones.
- If an adjustment to the scope of the evaluation is required, modify the contract accordingly.

Additional Resource: *Selecting an evaluation consultant* (Evaluation Briefs No. 1). (2005, December). Atlanta, GA: CDC Division of Adolescent and School Health. Retrieved from <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief1.pdf>

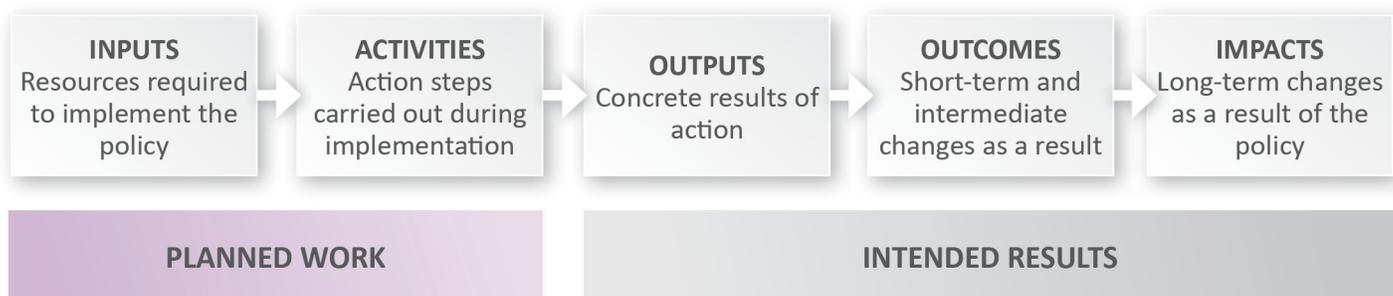
Appendix G: Logic Model Basics

Refer to Brief 2 for additional information similar in topic to **Appendix G**.

When planning a policy evaluation, it's important to have clarity and consensus on the components of the policy being evaluated, its intended results, and its underlying logic (i.e., why should this policy achieve the intended impact?). Sometimes the underlying logic of a policy is clear and evidence based and sometimes it is less obvious.³ Developing a logic model is crucial in helping to elaborate the goals, content, and context before implementing the policy. A logic model can also assist with selecting appropriate indicators and points of measurement.

Although a narrative is a fine way to describe each of the components, a logic model or similar tool can be useful in describing the policy and may make it easier to arrive at clarity and consensus. Creating a logic model allows for specific articulation of the underlying logic, assumed causal pathways between a policy or policies and behaviors, and the links between those behaviors and long-term impacts such as injury rates (see **Figure 1**).⁴ Inability to identify a clear link between each of the components of the logic model may indicate a potential flaw in the underlying logic in the policy, which can influence the evaluation focus and design selected.⁵ Likewise, the logic model process is an easy way to ensure that all stakeholders have the same understanding of the policy and its intended outcomes.⁶ A template for completing a logic model, as well as two examples of policy logic models, can be found in **Appendices H, I, and J**.

Figure 1. Basic Logic Model



Below are the definitions for each of the logic model steps:

- **Inputs** are information or resources required for developing or implementing policy, such as funding, staff, or stakeholder support.
- **Activities** are the actions that are carried out to implement the policy.
- **Outputs** are the direct results of these action steps, such as changes in product design, regulations, or enforcement of laws; or changes in systems that support or facilitate a policy.

3 The Community Toolbox. (2012). *Developing a logic model or theory of change*. Retrieved September 15, 2011, from http://ctb.ku.edu/en/tablecontents/sub_section_main_1877.aspx

4 Milstein, B., & Chapel, T. (2012). Developing a logic model or theory of change. In *The Community Toolbox* (Part A, Chapter 2, Section 1; V. Renault & S. Fawcett, Eds.). Retrieved from http://ctb.ku.edu/en/tablecontents/sub_section_main_1877.aspx

5 Her Majesty's Treasury (2011). *The magenta book: Guidance for evaluation*. London, UK: Author. Retrieved from http://www.hm-treasury.gov.uk/data_magentabook_index.htm

6 Stevahn, L., King, J. A., Ghore, G., & Minnema, J. (2005). Establishing essential competencies for program evaluators. *American Journal of Evaluation*, 26, 43–59.

- **Outcomes** are short-term and intermediate changes in target audience behaviors, awareness of risk factors, attitudes, and knowledge.
- **Impacts** are long-term changes in indicators.
- **Indicators** are specific, observable, measurable characteristics of changes that demonstrate progress toward outcome or impact.

As each of the components in the logic model is determined, identify meaningful indicators that will allow an assessment of the planned work and the intended results.⁷ Doing so will ensure that you collect relevant data and select the most appropriate design.⁸

When developing the logic model or policy description, focus on the following key aspects:

- Goals and objectives of the policy
- Content of the policy
- Context surrounding the policy
- Underlying logic and causal pathways supporting the policy
- Policy requirements and implementation components

Some policies clearly articulate each of these components, while others may require investigation and discussion. It is also important to describe any potential gaps or areas of ambiguity in the policy that may influence its implementation or impact. Having a clear understanding of all of the policy components and implementation requirements will ensure that you are planning a thorough evaluation. Additional descriptions of these policy components, as well as examples and questions to guide discussion of them, are provided in **Appendix K**.

⁷ MacDonald et al., op. cit.

⁸ Milstein and Chapel, op. cit.

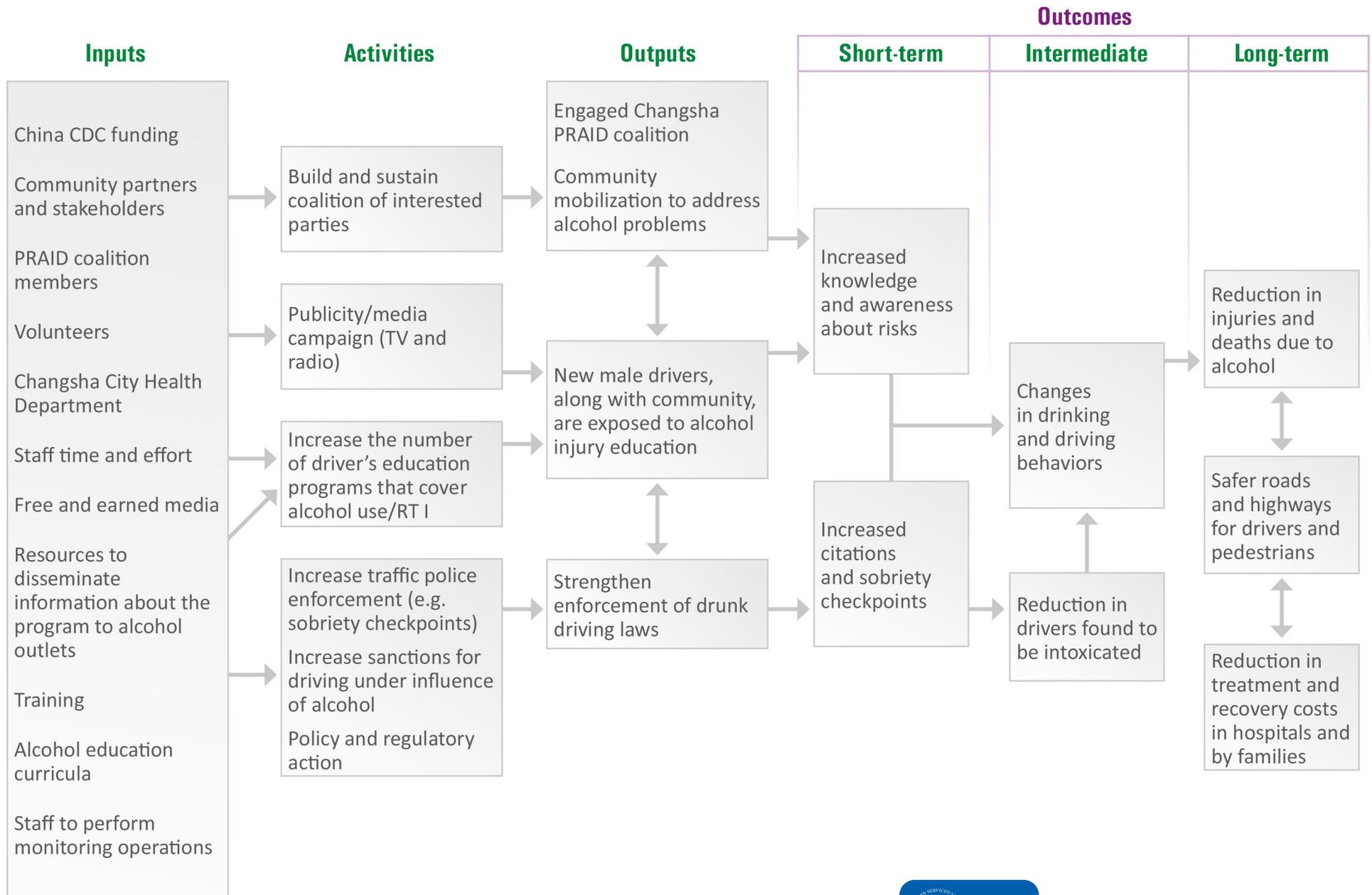
Appendix H: Logic Model Worksheet

Refer to Brief 2 for additional information similar in topic to **Appendix H**.

Context/Need	Assumptions/Theory of Change			External Influences		
	Inputs →	Activities →	Outputs →	Short-Term Outcomes →	Intermediate Outcomes →	Impacts
	Indicators	Indicators	Indicators	Indicators	Indicators	Indicators

Step by Step – Evaluating Violence and Injury Prevention Policies
Appendix I: Logic Model for Theoretical Change in an Alcohol Injury Policy Intervention

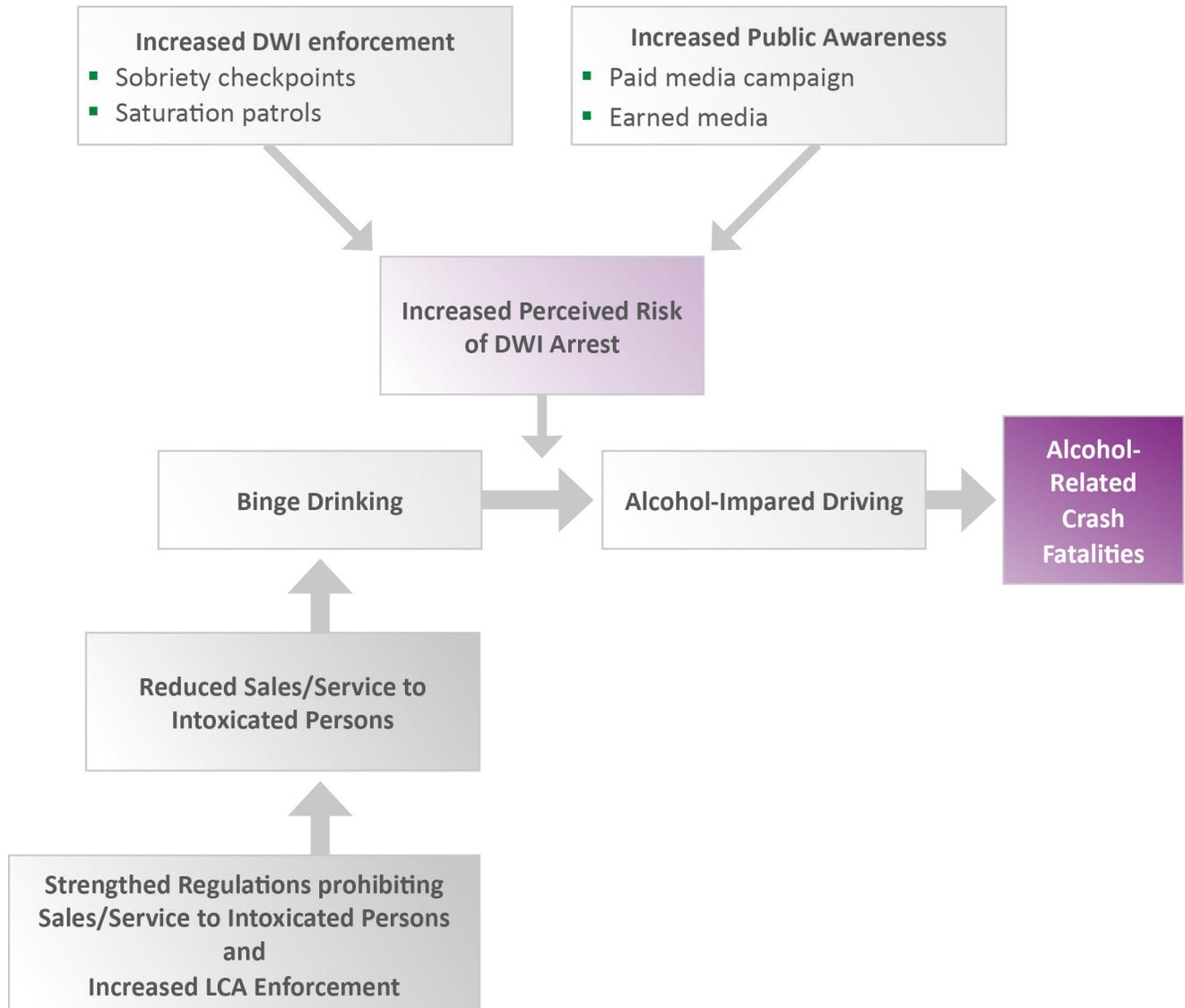
Refer to Brief 2 for additional information similar in topic to **Appendix I**.



Step by Step – Evaluating Violence and Injury Prevention Policies
Appendix J: New Mexico’s Driving While Intoxicated Prevention Program: Logic Model Example⁹

Refer to Brief 2 for additional information similar in topic to **Appendix J**.

The following is an example of an alternative format for a logic model. The logic model was developed for a 5-year comprehensive multi-agency state program to reduce dangerous excessive drinking, driving while intoxicated (DWI) and ultimately, alcohol-related motor vehicle crash deaths.



9 Roeber, J. (2011, October). New Mexico Department of Health presentation at CDC Vital Signs Town Hall Teleconference.

Appendix K: Policy Components¹⁰

Refer to Brief 2 for additional information similar in topic to **Appendix K**.

Component	Description	Example	Key Questions
Policy goals and objectives	Articulate the goals and objectives of the policy including the issue or need it is designed to address and potential measures of success.	The goal of a motor vehicle restraint policy may be to decrease fatal crash-related injuries and the objectives may include increased use of seat belts and decreased crash-related injury severity.	<ul style="list-style-type: none"> ■ What issue or need is the policy designed to address? ■ What are the stated goals or objectives? ■ What criteria are being used to judge program success? ■ Does the policy describe the specific indicators of program success? If not, can you identify what these indicators would be?
Underlying logic and causal pathways	Articulate the underlying logic and causal pathways supporting the policy. These explain the connection between the activities and the outcomes. They may be informed by public health theory, research, or previous evaluations.	The underlying logic behind a pool fencing law is that changing the physical environment will decrease the likelihood of behaviors that could result in injury thereby decreasing injury rates.	<ul style="list-style-type: none"> ■ Does the policy articulate the theory of change? If not, does it provide sufficient information to infer the theory of change? ■ Does the research or evidence support the theory of change? ■ Is a model policy with strong evidence the basis for the policy? ■ How complex is the theory of change? How many steps are between the policy and the impact?
Policy requirements and implementation components	Articulate the specific and inferred requirements for implementation, including implementation milestones, feasibility of requirements, stakeholders, availability of resources, and implementation responsibilities.	Some “Return to Play” policies stipulate exact activities and documentation requirements for implementers. Other policies may leave policy requirements up to the parties responsible for implementation.	<ul style="list-style-type: none"> ■ What are the requirements in the policy for implementation? ■ Are there any implied requirements for implementation? ■ How clear and specific are implementation requirements? How will each stakeholder interpret the requirements? ■ Does the policy assign clear responsibility for implementation of the policy? ■ Are implementation milestones identifiable? ■ Does the theory of change support the implementation components? ■ Are the requirements and implementation components feasible given the resources and capacity of the stakeholders who will implement the policy? ■ Does the policy describe any mechanism for supporting and clarifying the requirements of policy implementation (such as written regulations or technical guidance)? If so, is it feasible and likely? ■ Does the policy describe any mechanism for monitoring policy implementation? If so, is it feasible and likely? ■ Does the policy require particular resources for implementation? If so, does it specify the source of resources?

Policy context	It is also necessary to identify and describe critical contextual variables including political interest, support and resistance, and potential facilitators and barriers to implementation.	The introduction and enactment of certain policies can be influenced by high profile national events, such as a school shooting. In addition, opposition to a policy can influence its enactment and implementation.	<ul style="list-style-type: none"> ■ Are all the relevant stakeholders engaged and supportive of the policy? ■ Are the resources required for implementation likely to be available? ■ Are there key assumptions underlying the policy or the environment related to implementation? Are these assumptions accurate? ■ What is the level of political interest in the policy? Is it a high-profile policy? Is there pressure on the policy to succeed or to demonstrate immediate impact? ■ What opposition exists? Could it have a negative impact on policy implementation?
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10 MacDonald, G., Starr, G., Schooley, M., Yee, S. L., Klimowksi, K., & Turner, K. (2001). *Introduction to program evaluation for comprehensive tobacco control programs*. Atlanta, GA: Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/evaluation_manual/pdfs/evaluation.pdf

Step by Step – Evaluating Violence and Injury Prevention Policies

Appendix L. Examples of Outcomes, Indicators, and Possible Data Sources in Injury Prevention and Control

Refer to Brief 2 for additional information similar in topic to **Appendix L**.

Outputs	Indicator	Possible Data Sources
Increased number of homes with access to smoke alarms	Number of smoke alarms distributed	<ul style="list-style-type: none"> Activity logs Local survey of households
Exposure to advertisements designed to educate about child maltreatment	Gross rating point (GRP) estimate of exposure to advertisements aimed at reducing physical and verbal abuse and emotional neglect of children	<ul style="list-style-type: none"> Activity logs Media exposure tracking systems
Increased compliance with BTF–based TBI treatment protocol	Intensive education program instituted to develop compliance with TBI treatment protocol	<ul style="list-style-type: none"> National Trauma Data Bank National Hospital Discharge Survey
Short-term Outcomes	Indicator	Possible Data Sources
Increased knowledge of dangers of texting while driving	Percentage of adults who understand that texting while driving increases their chances of an accident	<ul style="list-style-type: none"> State-administered survey regarding use of technology in motor vehicles
Increased number of schools implementing written violence prevention policies	Percentage of schools with written violence prevention policies	<ul style="list-style-type: none"> School Health Policies and Practices Study NASBE State School Health Policy Database
Increased number of hospitals adopting Brain Trauma Foundation guidelines for treatment of severe TBI	Percentage of hospitals that adopt BTF guidelines for treatment of severe TBI	<ul style="list-style-type: none"> National Trauma Data Bank HCUP
Intermediate Outcomes	Indicator	Possible Data Sources
Increased percentage of child booster seat use in motor vehicles	Percentage of families who consistently use booster seats for all children, as age or size appropriate	<ul style="list-style-type: none"> Behavioral Risk Factor Surveillance System
Improved behavioral intentions of students concerning dating violence	Percentage of college students with improvement in behavioral intentions concerning dating violence	<ul style="list-style-type: none"> Monitoring the Future (MTF) Series National Youth Survey (NYS) Series
Decreased costs for treatment of patients suffering from severe TBI	Difference between costs for whether or not TBI is treated according to BTF guidelines	<ul style="list-style-type: none"> National Trauma Data Bank HCUP
Long-term Impacts	Indicator	Possible Data Sources
Decreased deaths due to falls among older adults	Percentage of older adults who die as a result of a fall	<ul style="list-style-type: none"> WISQARS™ Inventory of National Injury Data Systems
Decreased adult deaths related to drowning from intoxication	Percentage of adults who drown as a result of intoxication	<ul style="list-style-type: none"> Alcohol-related disease impact WISQARS™

BTF, Brain Trauma Foundation; HCUP, Healthcare Cost and Utilization Project; NASBE, National Association of State Boards of Education; TBI, traumatic brain injury; WISQARS, Web-based Injury Statistics Query and Reporting System.

Appendix M: Maximizing and Supplementing Evaluation Resources

Refer to Brief 2 for additional information similar in topic to **Appendix M**.

- Focus the evaluation on the high priority questions. Ensure that the evaluation questions selected can be realistically answered given the available resources and data. Balance the difficulty of answering the question with its relative importance when selecting evaluation questions.
- Select the evaluation design that most appropriately answers the evaluation questions, regardless of whether it is the most complex design.
- • Bring in external consultants only on the aspects of the evaluation that require external expertise (such as data analysis). Use internal staff for other responsibilities (such as data collection and reporting).¹¹
- Partner with universities and colleges to gain access to technical expertise (such as evaluation design and data analysis) as well as logistical support (students can assist with data collection and data entry).
- Collaborate with nonprofit research organizations that may have an interest in the topic.
- Consider using only data from existing datasets, including surveillance and administrative data. If additional data is required, be very specific and focused in collecting it.
- Use inexpensive online survey software to gather and organize data.
- Reach out to governmental entities that may have an interest in this issue. Even if they cannot provide funding, they may be able to provide staff support or access to other resources.
- Reach out to national and local foundations and community organizations that may have an interest in the topic.
- Consider the staff time required when creating the evaluation budget. Ensure that estimates are realistic so that the budget is feasible.

Additional Resource

Bamberger, M., Rugh, J., Church, M. & Fort, L. (2004). Shoestring evaluation: Designing impact evaluations under budget, time and data constraints. *American Journal of Evaluation*, 25, 5–37.

¹¹ W. K. Kellogg Foundation. (1998; rev. 2004). *Evaluation handbook*. Battle Creek, MI: Author. Retrieved from <http://www.wkkf.org/knowledge-center/resources/2010/W-K-Kellogg-Foundation-Evaluation-Handbook.aspx>

Appendix N: Policy Database Examples

Refer to Brief 3 for additional information similar in topic to **Appendix N**.

Policy databases are a key tool in comparing policies across jurisdictions (including international, national, state, and local). These databases contain detailed information about policies including content, context, and other relevant variables. This can make the task of compiling and comparing policies much easier. Some potential databases include the following:

- U.S Government Printing Office (<http://www.gpo.gov/fdsys/>)
- Congressional Quarterly
 - Federal Policy Tracker (http://corporate.cqrollcall.com/content/48/en/Legislative_Tracking)
 - State Policy Tracker (<http://www.cqstatetrack.com>)
- National Conference of State Legislatures (NCSL) (<http://www.ncsl.org/>)
- World Health Organizations (WHO)—European Inventory of National Policies for Prevention of Violence and Injuries (<http://data.euro.who.int/injuryprevention/>)
- Insurance Institute for Highway Safety (IIHS) (<http://www.iihs.org/laws/default.aspx>)
- Safe Kids USA—Find Safety Laws by State (<http://www.safekids.org/in-your-area/safety-laws/>)
- Administration for Children and Families—Child Welfare Information Gateway: Laws and Policies (https://www.childwelfare.gov/systemwide/laws_policies/)

Appendix O: Evaluation Designs

Refer to Brief 5 for additional information similar in topic to **Appendix O**.

Types of Evaluation Designs

- **Experimental designs** are designs used frequently in formal research or sophisticated evaluation in which intervention and control groups are determined by random assignment; at a minimum, the variable of interest is measured before and after the intervention.¹²
- **Randomized controlled trial (RCT):** Often called the “gold standard” of study design, RCTs randomly allocate study participants to one or more treatment or control groups. Comparing treatment groups with controls can produce the strongest evidence that a project, program, or policy has contributed to outcomes. Note, however, that in most cases, RCT methodology is not an appropriate or feasible choice as a policy evaluation methodology, as randomization may be unethical, impossible, costly, or time-consuming.
- **Quasi-experimental designs** involve either a time comparison (before and after the intervention) or comparison with another group, such as a similar community in a jurisdiction not affected by a policy change. Comparison groups are not determined by random assignment, which makes quasi-experimental designs typically more feasible than experimental designs. They are often used to evaluate policy impact.¹²
- **Non-experimental designs** examine variation without any making comparisons over time or between groups. Examples of non-experimental designs include descriptive, cross-sectional, and case study. Non-experimental designs tend to rely heavily on qualitative methods. The focus of the design may be to provide an accurate description rather than to prove a specific hypothesis.
- **Mixed-methods designs** combine multiple designs or methods to provide multiple perspectives.
- **Case studies** provide an in-depth examination of a phenomenon within a very small sample with a variety of data sources and perspectives.¹³ Although case study designs typically include qualitative data, they can include quantitative data as well. Case studies can provide valuable insight into the role of context and the barriers to and facilitators of implementation.
- **Cross-sectional designs** collect quantitative data at a point in time on a broad base such as a population, often using surveys.¹²

Time Comparisons

- **Pre-post designs** (also known as before-and-after studies) measure indicators before the policy is implemented and then again after a sufficient period of time has passed for effects to be expected.

O X O

- **Time-series designs**, on the other hand, incorporate a number of observations over time and may or may not include the same respondents each time. When a long time-series of pre-implementation observations exist, it can be possible to demonstrate long-standing trends and project them into the future.¹²

O O X O O

¹² Rossi, P. H., Lipsey, M. W., & Freeman, H. E. (2004). *Evaluation: A systematic approach* (7th ed.). Thousand Oaks, CA: Sage.

¹³ Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *Qualitative Report*, 13, 544–559.

- **Difference-in-difference:** This method involves contrasting the indicators in the matched comparison and target jurisdictions at multiple points before the policy is implemented and at multiple points after the policy is implemented (time-series design with comparison group). Changes in the indicator over time (trend) are then compared between the groups. The trend for the matched comparison group is assumed to be the counterfactual or the natural change in the indicator (absent the policy).¹⁴

Between Group Comparisons

To demonstrate that the policy is responsible for change, you may want to consider the condition of the target population affected by the policy and compare it with the condition of an equivalent group that was not affected by the policy. Being able to compare the effects of a policy in relation to what would have happened in the absence of the policy (called the **counterfactual**) can increase confidence that the influence on the outcomes and impacts was due to the policy.

Pre-Post with Non-Equivalent Comparison Group

O	X	O
C		C

Time Series with Non-Equivalent Comparison Group

O	O	X	O	O
C	C		C	C

Identifying Comparison Groups

The comparison group is presumed to be either similar to the targets or, at the very least, not systematically different from the population being studied. However, unless the groups are randomly assigned, some additional steps are required during analyses and interpretation to demonstrate the appropriateness of the comparison group. Inherent in the design is that groups are not equivalent, regardless of how similar they may appear. Statistical adjustments can be made to account for any critical differences that may exist between the two groups; therefore policy effects can be assessed with a reasonable degree of confidence.

There are a number of statistical methods that you can use to control for key differences between the comparison group and target group.¹⁴ For example, for non-randomly-assigned groups, the analyst may wish to consider regressing outcome indicators not just on an indicator of study group membership, but on demographics, in case small between-group variations exist.

¹⁴ Purdon, S., Lessof, C., Woodfield, K., & Bryson C. (2001). *Research methods for policy evaluation* (Research working paper No 2). London, UK: National Centre for Social Research. Retrieved from <http://research.dwp.gov.uk/asd/asd5/WP2.pdf>

Natural Experiments

A natural experiment is a quasi-experimental design in which group assignment is exogenous but not strictly randomized or controlled. The way that a policy is implemented may, either intentionally or unintentionally, result in a naturally occurring comparison group. For example, there may be a situation where adjoining jurisdictions adopt slightly different policies, or one adopts a policy and one does not. It is possible to compare impacts between the two jurisdictions. However, it is important to demonstrate that the jurisdictions are not systematically different. The comparison jurisdiction should be selected on the basis of its similarity to the implementing jurisdiction on key variables not related to the intervention.¹⁴

Other Related Analyses

Other types of evaluation designs and methods include:

- **Cost-benefit analyses** examine the overall costs of the policy in relation to the cost savings that occurred because of the policy. You might find it challenging to assign monetary value to all of the benefits of the policy. At the very least, the analyses can consider the costs of the injuries avoided.
- **Cost-effectiveness analyses** examine the costs of the policy in relation to the cost per outcome (injury avoided). These analyses can provide you with a cost per unit of outcome. Again, it is often challenging to account for all of the costs related to the outcomes.

Step by Step – Evaluating Violence and Injury Prevention Policies
Appendix P: Selected Surveillance Systems Pertaining to Injury Prevention and Control

Refer to Brief 6 for additional information similar in topic to **Appendix P**.

National Surveillance Systems		
System	Description	URL
Web-based Injury Statistics Query and Reporting System (WISQARS™)	<p>An interactive, online database that tracks fatal and nonfatal injuries, violent deaths, and costs of injuries. Evaluators, the media, public health professionals, and the public can use WISQARS™ data to learn more about the public health and economic burden associated with unintentional and violence-related injury in the United States. Users can search, sort, and view the injury data and create reports, charts, and maps based on the following:</p> <ul style="list-style-type: none"> ▪ Intent of injury (unintentional injury, violence-related, homicide/assault, legal intervention, suicide/intentional self-harm) ▪ Mechanism (cause) of injury (e.g., fall, fire, firearm, motor vehicle crash, poisoning, suffocation) ▪ Body region (e.g., traumatic brain injury, spinal cord, torso, upper and lower extremities) ▪ Nature (type) of injury (e.g., fracture, dislocation, internal injury, open wound, amputation, burn) ▪ Geographic location (national, regional, state) where the injury occurred ▪ Sex, race/ethnicity, and age of the injured person 	http://www.cdc.gov/injury/wisqars/facts.html
Inventory of National Injury Data Systems	<p>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. Data systems are organized by the topics listed below. (Some data systems are listed more than once relevant to different violence- and injury-related topics.)</p> <ul style="list-style-type: none"> ▪ Behavioral risk factors/injury incidence ▪ Injury morbidity data ▪ Injury deaths—death certificates ▪ Automotive/transport injury data ▪ Automotive behavioral injury data ▪ Occupational injury data ▪ Violent death data ▪ Crime and victimization data ▪ Drug abuse data ▪ Other injury data ▪ Trauma care/poisoning data 	http://www.cdc.gov/Injury/wisqars/InventoryInjuryDataSys.html

National Surveillance Systems (cont.)		
Health Indicators Warehouse (HIW)	<p>Provides a single, user-friendly, source for national, state, and community health indicators and links indicators with evidence-based interventions. HIW serves as the data hub for the Department of Health and Human Services Community Health Data Initiative, a flagship HHS open government initiative to release data, encourage innovative application development, and catalyze change to improve community health. HIW contains pre-constructed national, state, and local level indicators including:</p> <ul style="list-style-type: none"> ▪ Healthy People 2020 indicators ▪ County health rankings indicators ▪ Community Health Status Indicators (CHSIs) ▪ Medicare quality and utilization indicators <p>HIW has the ability to map, chart, graph, and trend indicators, and it also provides supporting descriptive indicator definitions, methods, data sources and other descriptive data needed to facilitate appropriate use of indicators.</p>	http://healthindicators.gov/
Fatality Analysis Reporting System (FARS)	<p>A nationwide census providing National Highway Traffic Safety Administration (NHTSA), Congress, and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes.</p>	http://www.nhtsa.gov/FARS
National Child Abuse and Neglect Data System (NCANDS)	<p>Dataset consisting of child-specific data of all investigated reports of maltreatment to state child protective service agencies. It is a federally sponsored national data collection effort created for the purpose of tracking the volume and nature of child maltreatment reporting each year within the United States. The Child File is the case level component of the NCANDS; the Agency is the NCANDS State-level component. Child File data are collected annually through the voluntary participation of states. Submitted data consist of all investigations or assessments of alleged child maltreatment that received a disposition in the reporting year. Data elements include the demographics of children and their perpetrators, types of maltreatment, investigation or assessment dispositions, risk factors, and services provided as a result of the investigation or assessment.</p>	http://aspe.hhs.gov/hsp/06/catalog-ai-an-na/NCANDS.htm

National Surveillance Systems (cont.)		
National Violent Death Reporting System (NVDRS)	<p>A state-based surveillance system that collects facts from different sources about the same incident. The information—from death certificates, police reports, and coroner or medical examiner reports—is pooled into a useable, anonymous database that:</p> <ul style="list-style-type: none"> ▪ Links records to describe in detail the circumstances that may contribute to a violent death. ▪ Identifies violent deaths occurring in the same incident to help describe the circumstances of multiple homicides or homicide–suicides. ▪ Provides timely preliminary information on violent deaths. ▪ Helps characterize the relationship of the victim to the suspect. <p>NVDRS operates in 18 states, pulls together data on which child maltreatment fatalities, intimate partner homicides, other homicides, suicides, legal intervention deaths, unintentional firearm injury deaths, deaths of undetermined intent.</p>	http://www.cdc.gov/violenceprevention/nvdrs/datacollectionaccess.html
National Intimate Partner and Sexual Violence Survey (NISVS)	<p>NISVS is the first ongoing survey dedicated solely to describing and monitoring these forms of violence as public health issues. It also includes information that has not previously been measured in a national population-based survey, such as types of sexual violence other than rape, expressive psychological aggression and coercive control, and control of reproductive or sexual health. NISVS is also the first survey to provide national and state-level data on sexual violence, stalking, and intimate partner violence.</p>	http://www.cdc.gov/violenceprevention/nisvs/
State Level Surveillance Systems		
System	Description	URL
State Injury Indicator Reports	<p>These reports compile injury data voluntarily collected by state health departments. They consolidate data from hospital records, death certificates, and several national surveillance systems and provide the rates of various injuries and related factors. Findings presented can help states determine their individual injury prevention program priorities, identify prevention needs, and evaluate the effectiveness of program activities and problems that require further investigation.</p>	http://www.cdc.gov/injury/stateprograms/indicators.html

<p>Crash Outcome Data Evaluation System (CODES)</p>	<p>CODES is a federally funded software and technical assistance program that helps states link information about all crashes and their consequences statewide. It links crash records to injury outcome records collected at the scene and en route by emergency medical services (EMS), by hospital personnel after arrival at the emergency department or admission as an inpatient or, at the time of death, on the death certificate. CODES is the only source of real-world crash outcome statewide data that can routinely support traffic safety decisions in terms of their impact on deaths, injury type and severity, and health care charges. These linked crash outcome data are unique resources that relate crash and vehicle characteristics to specific characteristics of the occupants, whether injured or uninjured. The linkage process itself also enhances each data system participating in the linkage. EMS and hospitals obtain information about the time of onset to evaluate the responsiveness of the trauma system. Roadway inventories expand to include injury outcome information by location point. Driver licensing information is augmented with the medical and financial consequences caused by drivers who are impaired or repeat offenders. Vehicle characteristics can be related to specific types of injuries and their costs. For all of the state data systems, data quality improves as the process of linking identifies missing and inaccurate data.</p>	
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For additional data sources pertaining to injury prevention and control, see Doll, L., Bonzo, S., Sleet, D., and Mercy, J. (Eds.). (2007). Key injury and violence data resources. In *Handbook of injury and violence prevention*, pp. 539–558 (Appendix 3).

Appendix Q: Resources for Accessing and Linking Existing Data

Refer to Brief 6 for additional information similar in topic to **Appendix Q**.

These resources provide information for accessing and linking data sets.

Atabakhsh, H., Larson, C., Petersen, T. Violette, C., & Chen, H. (2011). *Information sharing and collaboration policies within government agencies*. Retrieved from ai.bpa.arizona.edu/coplinc/publications/PolicyISI_ver4-1.doc

Backlund Jarquín, P. (2012). *Data sharing: Creating agreements: In support of community-academic partnerships*. Retrieved from <http://www.ucdenver.edu/academics/colleges/PublicHealth/research/centers/RMPRC/resources/Documents/Tools%20and%20Data/Data%20Sharing%20-%20Creating%20Agreements%20Backlund%202012.pdf>

Bernstein, A. B., & Sweeney, M. H. (2012). Public health surveillance data: Legal, policy, ethical, regulatory and practical issues. *Morbidity & Mortality Weekly Report Supplements*, 61(Suppl. 3), 30–34. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/su6103a7.htm?s_cid=su6103a7_w

George, R., & Joo Lee, B. (2007). Matching and cleaning administrative data. In M. Ver Ploeg, R. A. Moffitt, & C. F. Citro (Eds.), *Studies of welfare populations: Data collection and research issues* (pp. 197–219). Washington, DC: National Academy Press. Retrieved from <http://aspe.hhs.gov/hsp/welf-res-data-issues02/07/07.htm>

Quigg, Z., Hughes, K., & Bellis, M. (2011). Data sharing for prevention: A case study in the development of a comprehensive emergency department injury surveillance system and its use in preventing violence and alcohol-related harms. *Injury Prevention*, 18, 315–320. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3461757/>

Appendix R: Reliability and Validity

Refer to Brief 6 for additional information similar in topic to **Appendix R**.

The reliability and validity of a measure can affect findings; therefore they should be taken into consideration when selecting evaluation design and analysis.

Reliability is the extent to which a measure can be expected to produce similar results on repeated observations of the same condition or event—that is, the measure is constructed in such a way that respondents are likely to report in a consistent manner.

Validity is concerned with the accuracy of measurement and whether you are measuring what you intend to measure. Questions to consider are as follows:

- **Face validity:** Is the measure one that other injury prevention experts use or would use? (Ask them!)
- **Content validity:** Does the measure represent similar measures sufficiently? (Consult position papers, statements, and reports from agencies and organizations concerned with injury prevention and control.)
- **Criterion validity:** Does the measure correlate to a standard that is credible in the field? (For example, perhaps you are evaluating community member attitudes about a new crosswalk and traffic light system. How do their attitudes correlate to data observed about their usage of the new system?)
- **Construct validity:** Does the measure correlate with other measures in ways that are consistent with existing theory and knowledge? (Examine trend data from WISQARS [Web-based Injury Statistics Query and Reporting System] for injury rates.)
- **Predictive validity:** Does the measure predict subsequent behaviors in ways that are consistent with existing theory and knowledge? (Do mandatory waiting periods for the purchase of handguns reduce violent crime?)

Appendix S: Steps Before Data Analysis¹⁶

Refer to Brief 6 for additional information similar in topic to **Appendix S**.

Step	Description	Considerations
Data entry	Enter quantitative or qualitative data into a spreadsheet or database. This step can also include converting data into variables that are easier to analyze (e.g. changing text to numeric scores).	Consider the types of analysis you will conduct to ensure that data is entered in the best possible way.
Organize data	This activity may involve combining data from different sources or segmenting subsets of data for specific analyses. Prepare the dataset for cleaning and analysis by ensuring that all required data is included and in a usable format.	Consider the type of analysis you will conduct to ensure that data is organized in the best possible way.
Check data for errors	Review dataset to look for missing data, duplicates, inconsistent data, outliers, etc.	Establish standards for data quality—for example, how much missing data is acceptable.
Address errors	This step may include deleting or correcting duplicate or inaccurate data as well as estimating or accounting for missing data.	Consult a statistician for advice on using statistics to correct errors in data without compromising integrity.
Tabulate data	A first step of analysis tabulation involves classifying and summarizing data. This can provide a graphic view of what the data looks like.	Consider the variables of interest when deciding what tables to create. Create tables that are meaningful to your evaluation questions.

¹⁶ Adapted from MacDonald, G., Starr, G., Schooley, M., Yee, S. L., Klimowksi, K., & Turner, K. (2001). *Introduction to program evaluation for comprehensive tobacco control programs*. Atlanta, GA: Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/evaluation_manual/pdfs/evaluation.pdf

Appendix T: Overview of Data Analysis Methods

Refer to Brief 6 for additional information similar in topic to **Appendix T**.

Qualitative analysis categorizes process data in a way that allows the analyst to look for meaningful patterns. There are a number of different approaches to qualitative data analysis, but typically it includes organizing and coding the data by identifying and labeling themes and then interpreting the meaning of the themes and relationships.¹⁷ Qualitative analysis can be time-consuming and complex, so be sure that the data collected is directly relevant to the evaluation questions.

Quantitative analysis is used for data that is counted or compared on a numerical scale. The several different approaches to analyzing quantitative data include the following:

- **Describing data:** There are a number of different descriptive statistics, many of which are relatively simple and can be done using Microsoft Excel.¹⁸
- **Establishing relationships:** Demonstrate a relationship between observations over time, with comparison groups or within subpopulations or policy components.
- **Establishing causality:** Demonstrate a causal relationship between the policy and the impact.
- **Conducting economic evaluations:** Demonstrate a policy is cost-beneficial or cost-effective. Economic analysis can be quite complex, so seek the expertise of an economist, econometrician, or quantitative policy researcher.

Mixed-methods analysis uses multiple designs and analyses that (ideally) demonstrate similar results. Mixed methods can be a strong design because it allows for triangulation of results and can provide diversity and depth of information to the evaluation, thus strengthening the conclusions that can be drawn. When using a mixed-methods design, conduct separate appropriate analyses for each component.

Additional Resources

Analyzing qualitative data for evaluation (Evaluation Briefs No. 19, April 2009). Available from CDC, Division of Adolescent and School Health, <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief19.pdf>

Analyzing quantitative data for evaluation (Evaluation Briefs No. 20, July 2009). Available from CDC, Division of Adolescent and School Health, <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief20.pdf>

Collecting and analyzing data, by P. Rabinowitz and S. Fawcett; edited by C. Holt. In *The Community Toolbox* (Part J, Chapter 37, Section 5). Retrieved from <http://ctb.ku.edu/en/tablecontents/chapter37/section5.aspx>

User-friendly handbook for mixed method evaluations. Available from the National Science Foundation, <http://www.nsf.gov/pubs/1997/nsf97153/start.htm>

17 CDC, Division of Adolescent and School Health. (2009, April). *Analyzing qualitative data for evaluation* (Evaluation Briefs No. 19). Retrieved from <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief19.pdf>

18 CDC, Division of Adolescent and School Health. (2009, July). *Analyzing quantitative data for evaluation* (Evaluation Briefs No. 20). Retrieved from <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief20.pdf>

Appendix U: Tips for Communicating With Partners and the Public

Refer to Brief 7 for additional information similar in topic to **Appendix U**.

Communicating With Partners	
Target audience	<ul style="list-style-type: none"> ▪ Issue-specific partner organizations, such as Safe States Alliance and Society for Advancement of Violence and Injury Research. ▪ Academic or research institutions, including CDC-funded injury control research centers (http://www.cdc.gov/injury/erpo/icrc/).
Communication objectives	<p>Because policymakers rely on information and advice from many sources, it is important to include partners and other stakeholders in dissemination efforts.¹⁹</p> <p>The communication objectives when focusing on partners include the following:</p> <ul style="list-style-type: none"> ▪ Fostering collaborative efforts and partnerships. ▪ Providing evaluation results and evidence to assist partners in framing policy issues. ▪ Disseminating evaluation findings through multiple channels at appropriate times.²⁰ ▪ Encouraging partners to build capacity to do policy evaluation. ▪ Providing broad access to evaluation findings.
Format/focus	Consistent, targeted messaging via print and electronic media (paid and earned), social marketing tools, the press, and various other communications methods. ²¹
Considerations	<p>Communicate and disseminate information to partners based on specific needs and in easy-to-understand formats that can be replicated for other audiences.</p> <p>Framing information to meet the needs of different audiences increases the likelihood that evaluation results will be used and communicated effectively.</p>

19 Nelson, S. R., Leffler, J. C., & Hansen, B. A. (2009). *Toward a research agenda for understanding and improving the use of research evidence*. Portland, OR: Northwest Regional Education Laboratory. Retrieved from http://educationnorthwest.org/webfm_send/311

20 CDC, Division of Adolescent and School Health. (2009, July). *Analyzing quantitative data for evaluation* (Evaluation Briefs No. 20). Retrieved from <http://www.cdc.gov/healthyyouth/evaluation/pdf/brief20.pdf>

21 Nelson et al., op. cit.

Communicating With the Public and Consumers	
Target audience	General public, population targeted by policy
Communication objectives	<p>General public:</p> <ul style="list-style-type: none"> ▪ Educate the public about a specific topic or policy. ▪ Influence knowledge, attitudes, and beliefs about a specific topic or policy. <p>Population targeted by policy:</p> <ul style="list-style-type: none"> ▪ In addition to the above, place more emphasis on action related to the policy—e.g., in the case of a school policy against bullying, students may be informed that a new hotline number allows them to report cases of bullying in school.
Format/focus	Materials should be concise and easy to read. The reading level of materials should match that of the target audience. Aiming for a 6th- to 8th-grade reading level for the general public is ideal but not always possible. Writers should follow general principles to make their communications easy to read—for example, using short, familiar words and avoiding jargon. Simple graphics can also be effective in communicating with the general public. ²²
Considerations	<p>Like other audiences mentioned, the general public is surrounded by messaging and media. These considerations may help reach target audience members and effectively communicate your message:</p> <ul style="list-style-type: none"> ▪ Develop a short list of key meaningful messages to focus on communicating. ▪ Further break down your target audience into subpopulations so that you can tailor messages more narrowly if you think that may be helpful. ▪ Develop a dissemination plan to ensure that materials reach your target audiences. ▪ Pretest materials with target audience members if you can. This ideal can be accomplished through one-on-one interviews or focus groups where materials are shared with audience members. Use feedback from participants to revise materials if necessary.

22 DuBay, W.H. (2004). *The principles of readability*. Retrieved from <http://www.nald.ca/library/research/readab/readab.pdf>

Appendix V: Additional Resources

2011 Interactive Policy Guide: Injury & Violence Prevention (ASTHO). Available at <http://www.astho.org/Programs/Prevention/Injury-and-Violence-Prevention/>

Adding Power to Our Voices: A Framing Guide for Communicating About Injury. Available at <http://www.cdc.gov/injury/framing/CDCFramingGuide-a.pdf>

American Evaluation Association: Professional association of evaluators devoted to the application and exploration of program evaluation, personnel evaluation, technology, and many other forms of evaluation. The website, <http://www.eval.org>, provides access to a number of evaluation resources and articles.

CDC Evaluation Page: Provides information about the CDC Framework for Program Evaluation in Public Health as well as a number of additional general evaluation resources. Available at <http://www.cdc.gov/eval/>

CDC Gateway to Health Communication & Social Marketing Practice. Available at <http://www.cdc.gov/healthcommunication/>

Evaluation Briefs (CDC Division of Adolescent and School Health). Topics include data collection for evaluation and analysis of quantitative and qualitative data. Available at <http://www.cdc.gov/healthyyouth/evaluation/resources.htm>

Evaluation Handbook (W.K. Kellogg Foundation). Available at <http://www.wkkf.org/knowledge-center/resources/2010/W-K-Kellogg-Foundation-Evaluation-Handbook.aspx>

A Guide to Measuring Advocacy and Policy (Annie E. Casey Foundation). Available at <http://www.aecf.org/upload/publicationfiles/DA3622H5000.pdf>

A Guidebook to Strategy Evaluation: Evaluating Your City's Approach to Community Safety and Youth Violence Prevention. Available at http://www.ph.ucla.edu/sciprc/pdf/Evaluation_Guidebook_July08.pdf

Advocacy and Policy Change (Harvard Family Research Project, Harvard Graduate School of Education, 2007). *Evaluation Exchange*, 8(1). Retrieved from <http://www.hfrp.org/evaluation/the-evaluation-exchange>

Introduction to Program Evaluation for Comprehensive Tobacco Control Programs (CDC Office of Smoking and Health). Available at http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/evaluation_manual/

Introduction to Program Evaluation for Public Health Programs: A Self-Study Guide (CDC Office of the Director). Available at <http://www.cdc.gov/eval/guide/CDCEvalManual.pdf>

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