



MODEL PERFORMANCE IN

FIRE PREVENTION

Workshop

Evaluation Processes & Techniques

Introduction & Overview of the Workshop



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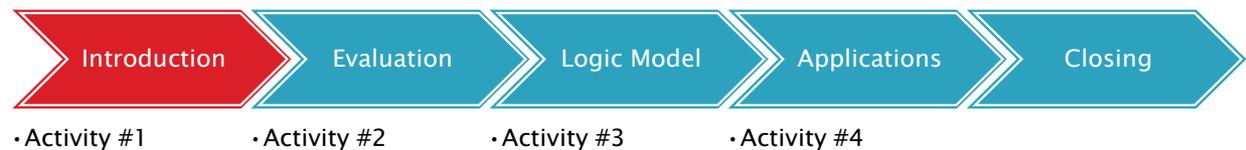
Workshop Overview

- ▶ Background– What is the Vision 20/20 Project?
- ▶ Purpose of the Workshop:
 - Increasing fire prevention performance measurement and improving evaluation standards
- ▶ Session Agenda:
 - Intro– What is prevention and why do we care about evaluating our new and existing programs?
 - Evaluation
 - Logic Model
 - Applications
 - Conclusions



Roadmap of the Workshop

- ▶ Pre-test
- ▶ Introduction
 - Why do we evaluate?
- ▶ Evaluation
 - Process for evaluation design
- ▶ Logic Model
- ▶ Application
- ▶ Conclusion & Additional Resou
- ▶ Post-test



Learning Objectives

- ▶ Identify the value of evaluating prevention programs
- ▶ Distinguish among formative, process, impact and outcome evaluation measures
 - Select examples of how each is related to code enforcement, plan review, fire investigation and public education prevention activities
- ▶ Understand the relationship between program planning and evaluation
- ▶ Recognize the proper relationships between the logic model, planning and evaluation processes.
- ▶ Identify data collection sources
- ▶ Apply evaluation measures to real world examples



Process Skills

- ▶ Assess, research and critically analyze current fire prevention practices.
- ▶ Utilize evaluation techniques to assess programs.
- ▶ Use logic model strategies to plan and evaluate fire prevention activities.
- ▶ Implement strategies that measure results for code enforcement, investigation, public education and plan review projects

Purpose of models: comparability

- ▶ “Apples to Apples”
- ▶ Evidence based decision-making
- ▶ Establish model program criteria
- ▶ Results/Outcome orientation
 - Output vs. Outcome
 - Output = measure of effort, not result (i.e. number of fire inspections completed)
 - Outcome = result (i.e. change in observed violations)



Approaches to Investigating Program Merit

- ▶ Performance Measurement
- ▶ Evaluation
- ▶ Research



Perspectives on Fire Prevention

- ▶ Protection Strategies:
 - Emergency Response
 - Education
 - Engineering
 - Enforcement
 - Economic Incentive



Program Decisions: Who Decides Priorities?

Program

Each fire department's project is connected with overall code enforcement, plan review, investigations & public education.

Consider city-wide goals and federal priorities.

Fire Department

The fire department may evaluate multiple different projects.

Each project is tied to a larger programmatic outcome.

Community

The community, either through public relations or identified needs, sets priorities for evaluation of programs.

Consider bond funding—what does the community perceive as a need?

Evaluation

Moving from Modeling to Evaluation



What is Evaluation?

- ▶ Systematic assessment of the worth or merit of a specific program.
- ▶ The goal is to provide useful feedback to aid and/or influence decision-making. Refers to a process specifically designed to assess the impact of a specific program, policy or legal change.
- ▶ Focus of an evaluation: whether the program, policy, or law has succeeded in achieving intentional or planned outcome.
- ▶ Frequently closely related to project planning and management.

About Evaluation

- ▶ Program evaluation typically involves assessment of one or more of the five program domains:
 - The need for the program
 - Design of the program
 - Program implementation and service delivery
 - Program impact and/or outcomes
 - Program efficiency



Importance of Evaluation

- ▶ Are we doing the right thing?
- ▶ Are we doing the thing right?
- ▶ Does anyone know or care?
- ▶ Provides empirical rather than anecdotal evidence



Developing and Evaluating a Program

Evaluation

Needs
assessment

Baseline
assessment

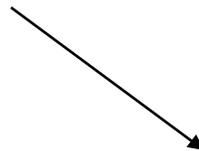
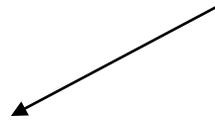
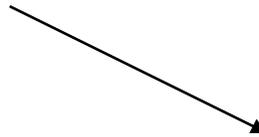
Impact/Outcome
Evaluation

Program

Design a program

Implement a
program

Redesign a
program
Or Terminate a
program



The Two Basic Components

- ▶ **Evaluation has two arms:**
 - Data gathering
 - Interpreting and reporting results

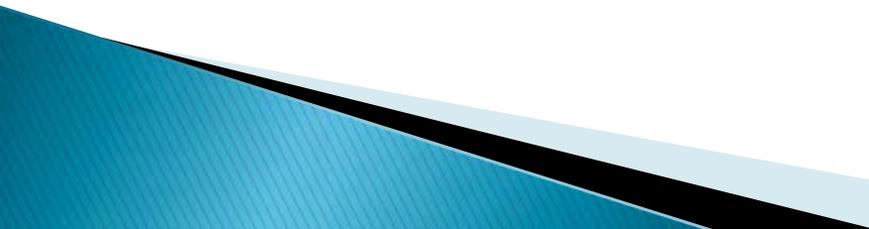


Program Evaluation Approaches

- ▶ Formative
- ▶ Process
- ▶ Impact
- ▶ Outcome



Summary of the Approaches

- ▶ **Formative**: needs or risk assessment/research
 - ▶ **Process**: implementation, activities, outputs (workload) or efficiency
 - ▶ **Impact**: educational gain or behavior changes that reduce risks
 - ▶ **Outcome**: changes in loss incident data indicating changes or reduction for property, injury or death
- 

Formative (research) Evaluation

- ▶ Definition: An evaluation of program research that takes place prior to the development stage (includes needs/risk assessment).
- ▶ Purpose: to ensure high quality program materials, strategies, and activities
- ▶ When to Conduct: as research before program development – as evaluation during and after program implementation
- ▶ May include: interviews with program staff and target audience, needs/risk assessments and observation

What are some risk factors for house fires?

Household Risk Indicators for Fire

- Low income
- Low education
- People who smoke
- Young children
- Older adults
- People with disabilities
- College student housing
- Ethnic and racial occupants
- Rural areas
- High population density areas
- Older homes–not well maintained

Knowing these will help you select & focus strategies

Risk Assessment: Simple or Sophisticated

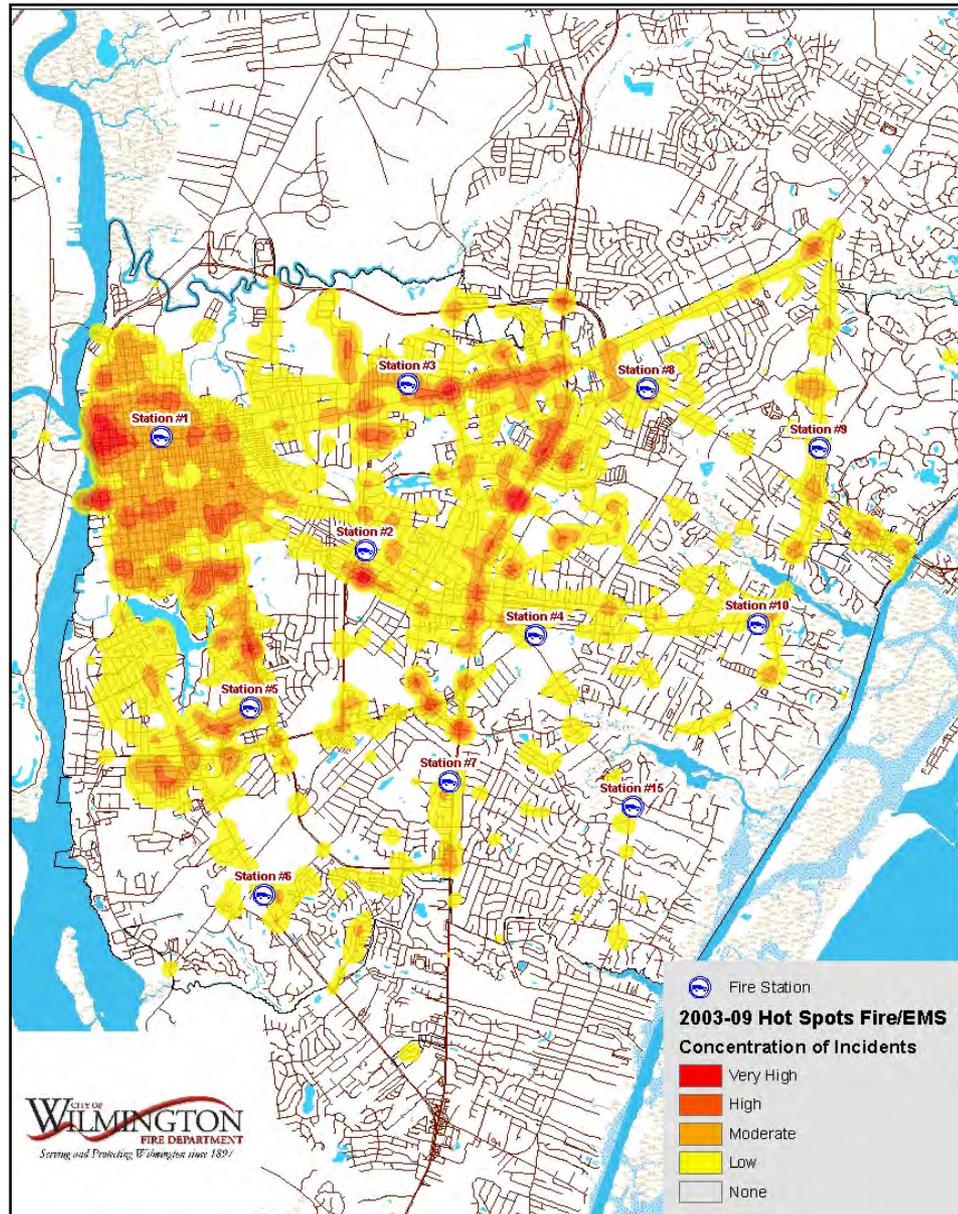
Philadelphia Example

- Each Engine/Ladder company chose one High Risk Area (of 1 block)
- Risk areas were determined by the company's recent fire experience

Wilmington, NC Example

- Residential and home fire incident data were highlighted in GIS mapping to show “hot” spots
- Central administration identified stations serving those “hot spots”

*Where are
the high risk
areas?*

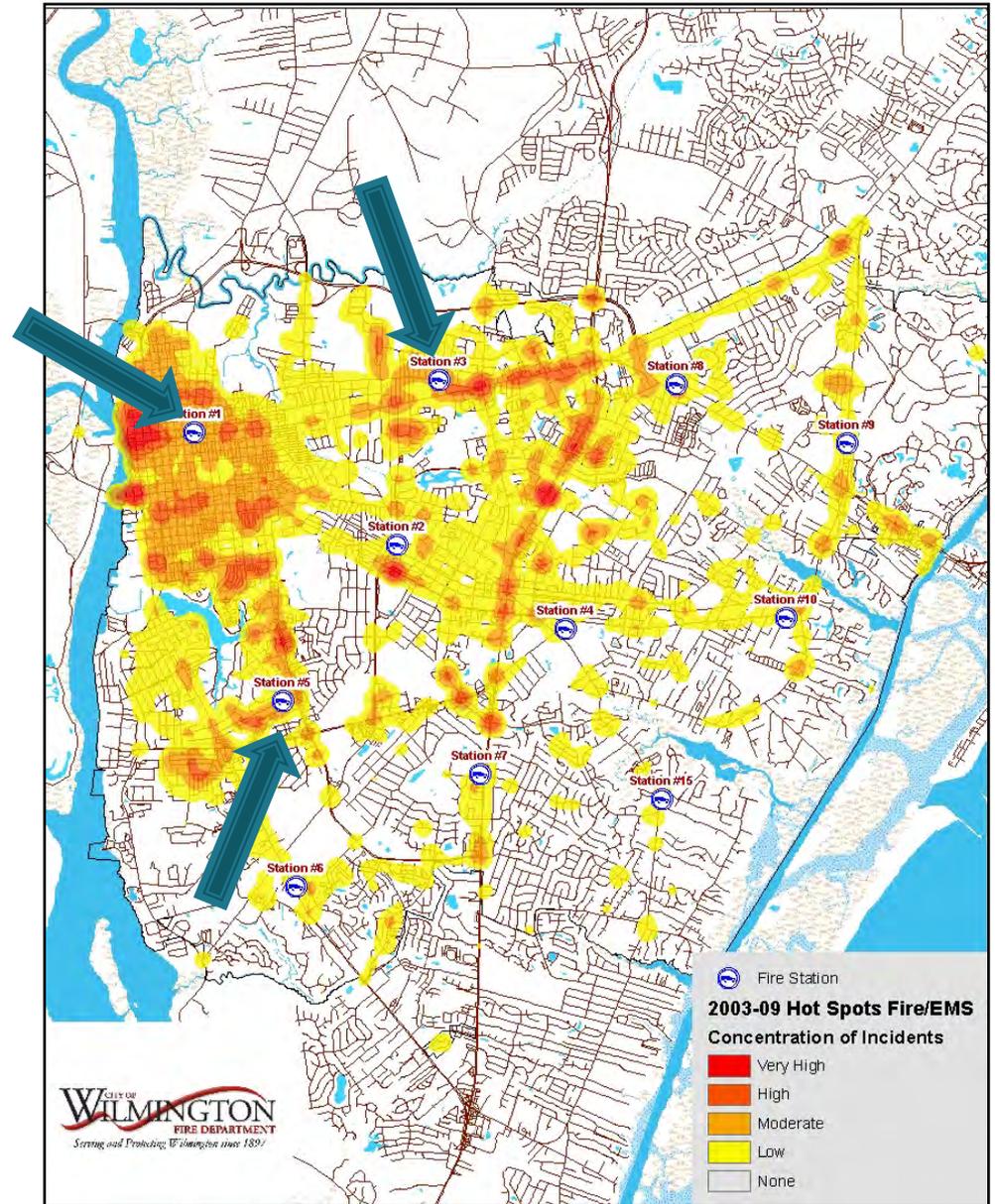


Wilmington

Fire Stations in High Risk Areas

#1 #3 #5

**Based on incidence
over several years**

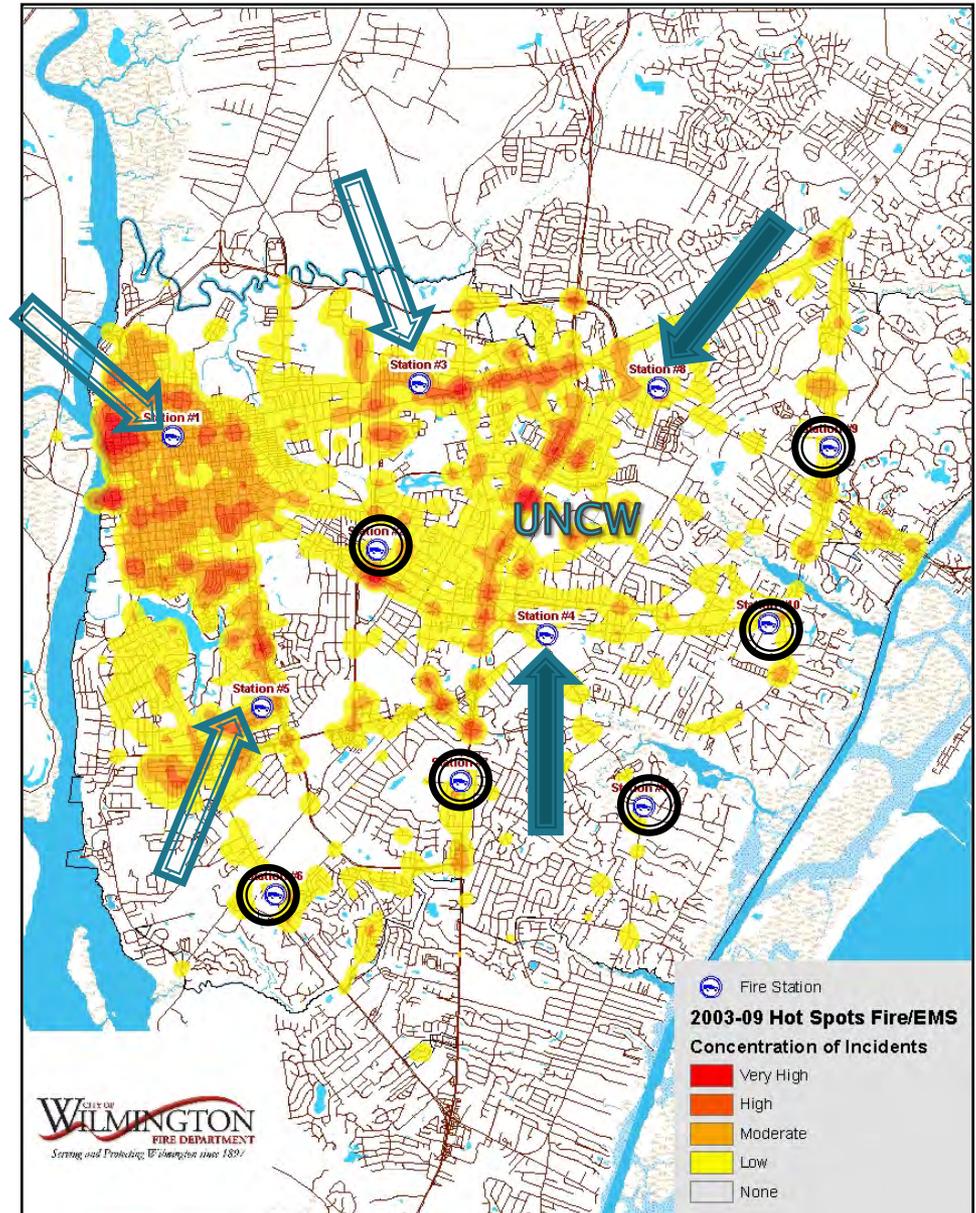


Wilmington

Fire Stations serving
UNCW*

#4 #8

Risks may vary
based on housing/
demographic data



* UNCW = University of North Carolina –
Wilmington

Collect demographic data for area

<http://factfinder.census.gov/>

American FactFinder

City/town,
County, or zip

State

[Or select a state using a map](#)

Search by City, County, or Zip Code

Formative Evaluation

Collect Comparison Data Too

- Could compare station demographic risk factors to the city, state, or nation
- Determine where your risk is higher.

More poverty

Local

National

Poverty	21.3%	14.3%
HS Education	63%	80%
Disabilities	32%	20%

Fewer adults with HS Educ

more disabilities

Demographic data helps you:

- Learn more about who lives in the areas with high incidence of Fires/EMS
- Focus efforts more efficiently and effectively

Don't forget potential risks areas

Consider the need to focus on areas where probability is low but consequence is great such as:

- Ports
- Hospitals
- Schools
- Theaters

Some Other Sources of Info/Data:

- City Chambers of Commerce
- City/County/State Departments
- Not-for-profit organizations
- Private business/industry

Conducting Formative Evaluation

- ▶ **Public Education Programs**
 - Incident and demographic data (who, what, when, where)
 - Identify available or potential resources
 - Interviews with high risk audience members (focus groups, qualitative research)
 - Market research (sophisticated software to analyze psychographics)

Conducting Formative Evaluation

- ▶ code enforcement Examples:
 - Identification of occupancies at higher risk
 - Conduct site visits, interviews
 - Review records of repeat code violations
 - Review incident data
 - Interview subject matter experts

Conducting Formative Evaluation

- ▶ Plan Review Programs
 - Review incident data for occupancy prioritization
 - Interview subject matter experts
 - Interview “customers” for model practices
 - Review incident data for comparison of hazards between plan review and code enforcement stages

Conducting Formative Evaluation

- ▶ Fire Investigation Programs
 - Interview subject matter experts
 - Reference national guides (i.e. NFPA 921)
 - Review incident data for investigation priorities
 - Note: investigation data is actually part of formative research for all other areas of prevention/mitigation

Conducting Formative Evaluation real world examples:

▶ Portland, OR

- 5% of the population in a small geographic area accounting for 26% of the fire deaths (from response data)
- Demographics = largely African American population
- Further research involved market focus groups to indicate the high risk audience did not trust the fire service

Conducting Formative Evaluation real world examples:

▶ School Fires – MN

- Less than 10% of schools sprinkler-protected (1990)
- Fires rare event (less than 2% of total building fires)
- School fires loss average compared with national averages (per NFPA)
- So why focus programs here?

Conducting Formative Evaluation

- ▶ High numbers of incident rates
- ▶ High injury or death rates
- ▶ High dollar loss
- ▶ Severe economic or social impact
- ▶ High “potential” for damage – low risk of event

Conducting Formative Evaluation

- Tells us who, what, when, where
- Help guide current program decisions
- Help make decisions about new program

Formative Discussion

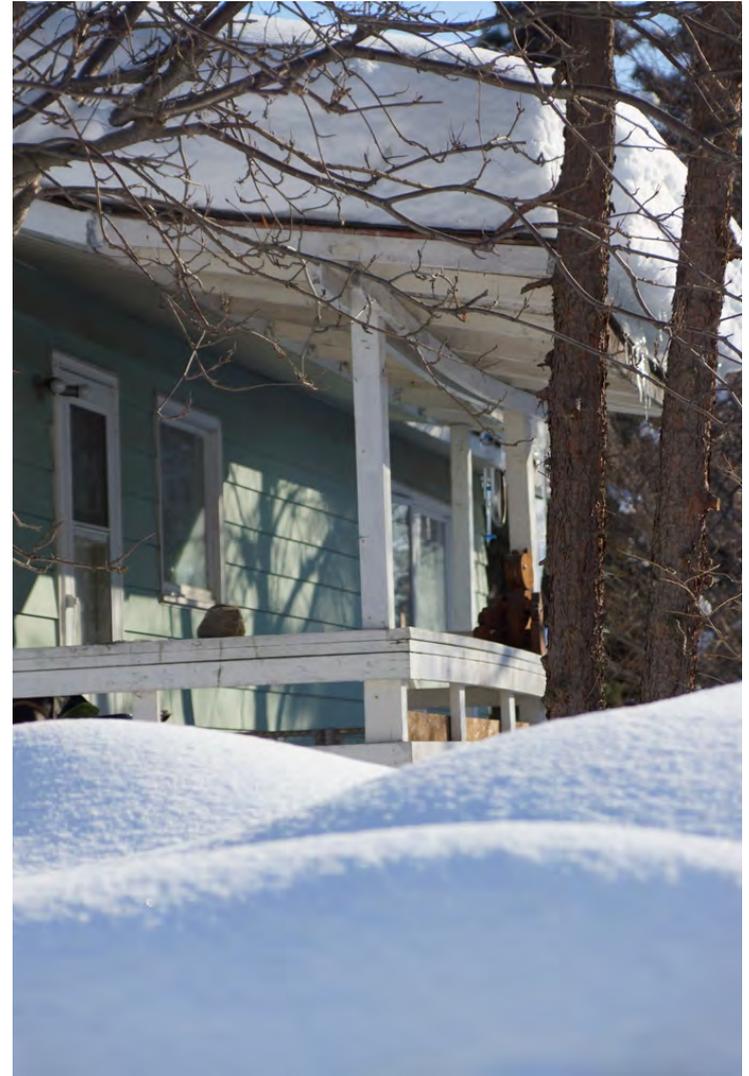
Public Education: *(slide found in student manual)*

Your fire department has a specialized prevention program involving line firefighters providing door-to-door home fire safety checks (Saturdays only) in high risk areas. The program is very well received by the public, and has created a partnership with several local non-profits including “meals on wheels” and a “home visiting nurses group” that conduct fire safety checks while they are servicing people’s homes. The program has been responsible for installing more than 5,000 smoke alarms in high risk areas of the City over the past five years.

Approximately 19% of your city population is elderly (age 65 and over). In this population, twelve fire deaths (of 19 total) have occurred over the past ten years in homes without a working or present smoke alarm. A review of incident data reveals that 63% of your emergency responses are to three distinct areas of your community. The areas are predominately low income subsidized housing, manufactured home parks, regular rental property, and some one and two family dwellings. These areas represent only 20% of your city population.

Can you identify the information needed for your formative evaluation?

Break



Process Evaluation

- ▶ Definition: aims to understand how the program achieves the results it does
- ▶ Purpose: to determine how the program works and understand how to make it more efficient
- ▶ When to Conduct: when new program is put into action and continue throughout life of program
- ▶ May include: direct contacts, indirect contacts, items/materials distributed or collected

Planning (and how it relates to evaluation)

▶ Components of a given program:

- Relate to goals and **formative research**
 - Prevention/Mitigation Strategy
 - Message
 - Format/Medium
 - Time
 - Placement
 - Frequency
 - Resources needed
 - Approvals needed
 - Timelines, reports required evaluation metrics to be used

Components of a proposed program: Public Education Example

- The program is designed to target the vulnerable populations and provide an engineering resource and education resource. The two activities planned include:
 - Distribution and testing of smoke alarms in residence
 - Written educational materials provided to each individual participant (through schools, churches, media, etc).
- Goals: distribute smoke alarms to 10,000 homes
 - Two methods of distribution: canvassing and telephone survey

Components of a proposed program: Code Enforcement Example

- The program is designed to target high risk occupancies for focused code enforcement inspections. The activities planned include:
 - Identification of high risk occupancies subject to code enforcement inspections
 - Prioritize inspections and frequency
 - Prepare specialized inspection templates
 - Gain approval of governing body – inform of the risks
 - Train inspectors for specialized inspections
 - Advertise program to the business community

What are examples of activities and outputs that we would track to provide process measures?



Process Measure Examples

▶ code enforcement

- Percentage of fires in properties subject to inspection that were not listed in inspection files
 - Percentage of inspection for which time since last inspection is greater than the department's target cycle time
 - Percentage of inspections conducted by inspectors with all necessary certifications
- 

Process Measures

- ▶ **Public Education**
 - Number of fire safety–related focus groups conducted
 - Number of fire–safety related surveys conducted
 - Number of people reached in target population
 - Number and type of fire materials distributed

Process Measures

- ▶ **Plan Review**
 - Number of plans reviewed
 - Number of permit application meetings held

Process Measures

▶ Fire Investigation

- Number of fires investigated
- Time spent on investigation activities
- Number of fires investigated by personnel with professional qualifications
- % of fire investigators with professional qualifications

Real World Example

▶ Minnesota

- School Prioritized Inspection Program (1990)
- Focused code enforcement
- Results expected?
 - Risk
 - Loss
- Requirements of resources
- Implementation activities – numbers of inspections, etc.
- (www.strategicfire.org)

Real World Example

▶ Philadelphia

- High Risk Area Home Safety Visits (goal: every home with working smoke alarms)
- Private sector expertise to identify risk areas
- Utilize experience of firefighters
- Results expected?
 - Numbers of home visits
 - Numbers of smoke alarms installed
- Requirements of resources
- Implementation activities
- (www.strategicfire.org) – case study/impact videos

Process Evaluation Discussion

PLAN REVIEW *(slide found in student manual)*

A plan review program for new construction was taken away from the fire department many years ago. When repeated problems arose between construction approvals and fire codes (identified during final inspection prior to occupancy), the City Manager decided to include deputy fire marshals in the plan review process. Typically about 500 new construction projects are reviewed each year – and the deputy fire marshals are complaining that they cannot do quality plan reviews while keeping up with their regular fire inspection workload. At the same time, the building official has been talking about “streamlining” the process and being more efficient by having building plan reviewers resume the responsibilities for all the new construction plan reviews.

Three deputy fire marshal's, with advanced training in building and fire codes, have been trained and assigned (half time) to work cooperatively with building inspectors from a different department within the city. The process currently requires plans to be reviewed separately by both building and fire departments to ensure their requirements are met. Each process takes approximately six days per plan. If a problem is found, it often necessitates a restart of the process which may extend the time from submission to approval. The delay's can be compounded due to the scheduling of the assigned deputy fire marshals, who must spend half of each day on code enforcement inspections and half of their day on plan review, regardless of the workload. Also, the advanced training needed for these three deputy fire marshals necessitates an 8% pay increase over a regular deputy fire marshal. The goal of the jurisdiction is to have all plans completed (except major projects) within three weeks of submittal. However, problems arise when contractors submit faulty plans – requiring many days for correction and to enter a proper plan review submittal into the tracking system.

Can you identify the process measures?

Impact Evaluation

- ▶ Definition: assess the magnitude of unintended or intended effects of the program.
- ▶ Purpose: to learn about changes in knowledge, attitudes, beliefs, and behaviors that may lead to reduced risk
- ▶ When to Conduct: collect baseline info before first encounter, then collect same information after first encounter
- ▶ May include: survey, questionnaires, direct observation, group discussions

Impacts Expected of Prevention Programs

- ▶ Increased Awareness, Risk Reduction
 - Cognitive gain – pre and post testing or surveys
 - Additional alarms installed, tested, maintained
 - Additional home safety plans conducted
 - Improved storage of hazardous materials
- ▶ Per Capita
- ▶ Over time



Impact Measures

▶ code enforcement

- Number of code violations noted and abated
 - Percentage of fires where there were pending, uncorrected violations present at the time of the fire
 - Enforcement of fire safety legislation and regulation
- 

Impact Measures

- ▶ **Public Education**
 - Improvements in participant's safety knowledge, attitudes, and beliefs
 - Observed and documented changes in behavior (hazard reduced or safety increased)
 - Introduction/Adoption of fire safety legislation

Impact Measures

▶ Plan Review

- Percentage of turn-a-round time goals met for plan review
- Decreased percentage of errors on plans reviewed
- Observed and documented reductions in code violations found during “acceptance” inspections (during construction)

Impact Measures

▶ Fire Investigation

- Documented better behaviors / more effective fire investigations due to increased training
 - (including contributing factors not just fire cause, better documentation techniques, etc.)
- Increased number of arson cases picked up by prosecutors (indicating better education of prosecutors)

Impacts in the Real World

- ▶ **Minnesota:**
 - code enforcement increases (less hazards noted on repeat visits)
 - More fire sprinklers installed in schools (risk reduction)
- ▶ **Philadelphia:**
 - 7000 smoke alarms installed in one month (risk reduction)
- ▶ **California Residential Fire Sprinkler Laws:**
 - Model codes adopted statewide without removing fire sprinkler requirements (not necessarily loss reduction in short term, but inferred risk reduction for better protection over time)



Washington State Patrol

Office of the State Fire Marshal

Prevention Division

“Areas of Interest (AOI)”

Fire Prevention and Safety Training Program for Licensed Care Facilities

Decision / Problem / Opportunity:

Evaluation of the 2010 Fire Prevention and Safety Training Program for Licensed Care Facilities

Analysis:

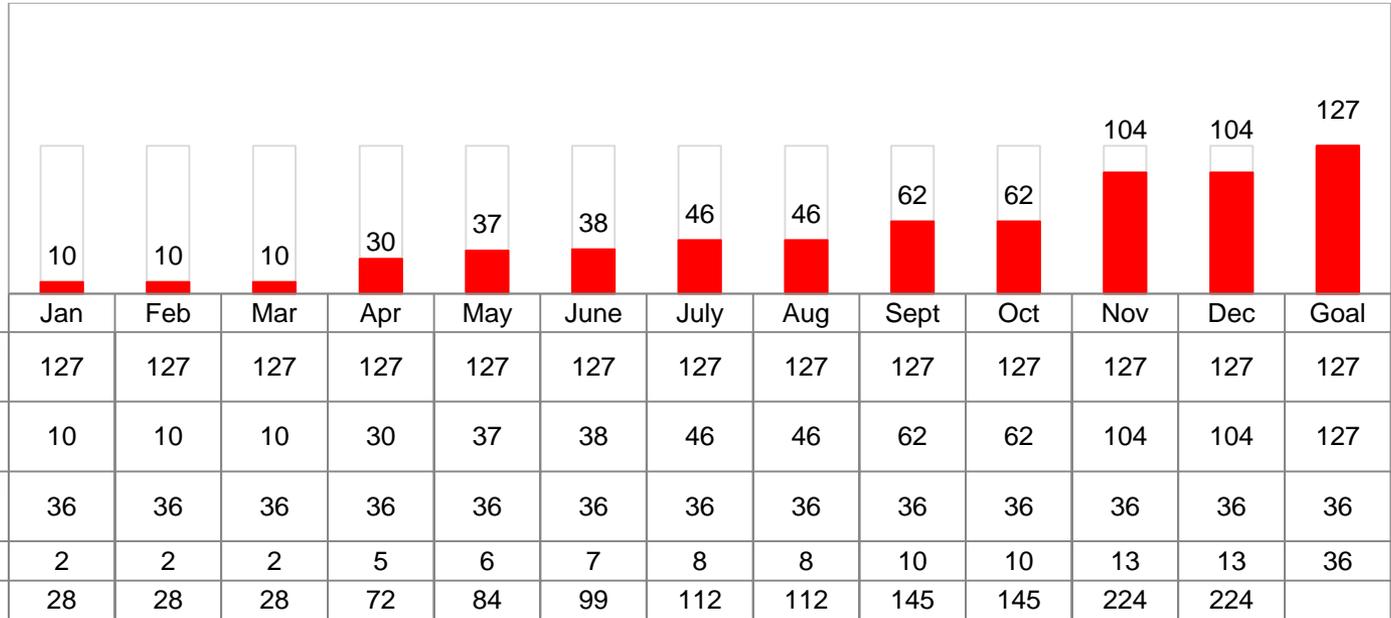
2010 training goals were not met

Root Cause:

Impacts of inspector vacancies on inspection and training workload

Leader Plan:

Develop and provide oversight and support of the program on a statewide basis



Target:

- 36 Classes
- 72 Nursing Homes
- 55 Boarding Homes
- 127 Total facilities participating

2010 Training Provided

- 13 Classes
- 60 Nursing Homes
- 40 Boarding Homes
- 4 Other types of facilities
- 104 Total facilities participating/224 students

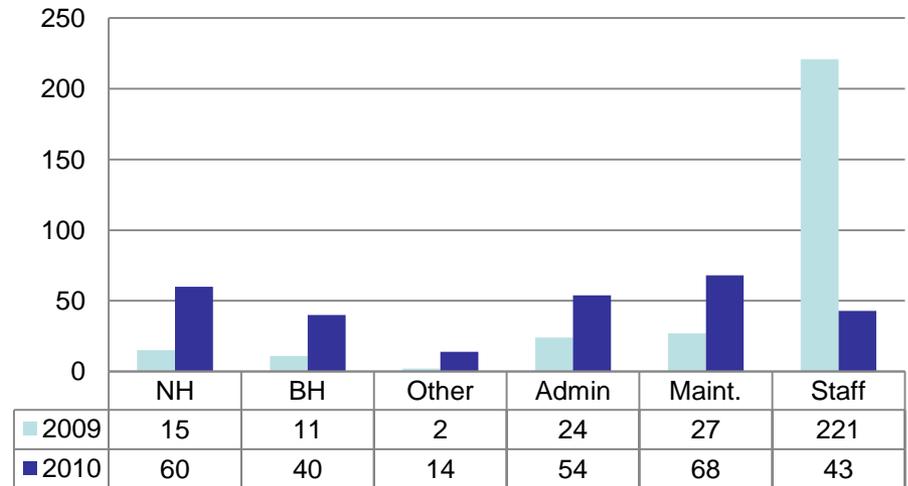
Prevention Division

Fire Prevention and Safety Training Program for Licensed Care Facilities

2009-2010 Trend Graph



Type of Facility/Type of Student



Analysis:

- A 62% increase in the number of classes taught by Inspection Deputies.
- A 259% increase in the number of facilities that attended classes.
- 12 of 13 classes taught were attended by staff from one or more nursing homes.
- In 2009, one class taught at a hospital had 171 students in attendance.

Prevention Division

Fire Prevention and Safety Training Program for Licensed Care Facilities

Impacts (indicators of risk reduction)

Nursing Homes

- Staff from 45 Nursing Homes attended classes
- 21 facilities had before/after inspections
- 10 of the 21 (48%) had decreased violations
- Overall violations decreased from 145 to 76 (48%)
- 4 (19%) did not need a re-inspection

Boarding Homes

- Staff from 40 Boarding Homes attended classes.
- 11 had before/after inspections
- 7 (63%) had a decrease in violations
- Overall violations decreased from 30 to 15 (50%)
- 4 (36%) did not need a re-inspection



Inspection

175 Violations
Before Training



Inspection

91 Violations
After Training



Impact Evaluation Discussion

FIRE INVESTIGATION *(slide in student manual)*

Your fire department responds to over 20,000 calls for emergency assistance each year. However, only about 300 structure fires are occurring annually – and only about 100 on average require an investigation. The firefighters are empowered to make the call if the cause of a fire is obvious. When it is not, they call for a deputy fire marshal (fire investigator) to respond and investigate the fire scene. The percentage of fires where cause has been determined has fallen over recent years due to training of Investigators (deputy fire marshals) that stipulates they should not be making determinations about cause without sufficient evidence. The Fire Chief has been asking why the lower cause determination figures are occurring.

The Chief is requiring that any programs from this point forward provide measures to show what is happening with staff time and the results the particular program is achieving. In this case, the Chief is focusing on the effectiveness of the investigation process and as an indicator of their impact. The premise is that company officers can conduct quality fire investigations without the need for specialized investigation personnel. Since implementing a new training program, the pre and post test scores of company officers' knowledge of proper fire investigation procedures has risen more than 60%. A similar training program for fire investigators indicated a 30% increase in their knowledge level.

Can you identify the impact measures?

How are these different from process?

Break



Outcome Evaluation

- ▶ Definition: an evaluation that focuses on the causal links between the program (i.e. public education program) and its results (decrease in youth fire behavior rate).
- ▶ Purpose: to provide evidence of changes in fire occurrence, injuries, and deaths
- ▶ When to Conduct: long term follow-up
- ▶ May include: surveys of self-report data, fire incident reports, data from hospitals

Outcomes Expected of Prevention Programs

- ▶ Reduced Losses
 - Incident Numbers
 - Deaths
 - Injuries
 - Capital Loss (direct and indirect)
- ▶ Changes vs. Reduction
- ▶ Per Capita
- ▶ Over time



Outcome Examples

▶ code enforcement

- Reduction in % of total fire losses occurring in inspectable occupancies
 - Reduction in fire deaths/1000 residents of inspectable occupancies
 - Reduction in number of structural fires/1000 residents of inspectable occupancies
 - Reductions in inspectable property structures fires with at least \$25,000 in loss
- 

Outcome Examples

- ▶ **Public Education**
 - Reduction in fire incidents per 1000 residents in target population
 - Reduction in fire deaths per 1000 residents in target population
 - Reduction in medical costs per 1000 residents in target population

Outcome Examples

▶ Plan Review

- Reduction in fire incidents in reviewed occupancies
- Reduction in property damage costs from fire in reviewed occupancies

Outcome Examples

▶ Fire Investigation

- Increase in percentage of fires where cause is determined
- Increased arson arrest and conviction rates

Outcomes in the Real World

- ▶ **Minnesota:**
 - Less fires in inspected occupancies
 - Less fire damage in sprinklered occupancies
- ▶ **Philadelphia:**
 - Reduction in fire deaths over time
- ▶ **California Residential Fire Sprinkler Laws**
 - Model codes adopted statewide without removing fire sprinkler requirements
 - Less fire losses over time

(case studies www.strategicfire.org)

Goals for Each Type of Evaluation

- ▶ **Formative**: Have needs / risks been identified? How much do we know about our audiences?
- ▶ **Process**: Measuring achievement of program activities, outputs, objectives, milestones, or quantifiable workload
- ▶ **Impact**: Measuring the magnitude of learning or behavior change in the target population (reduced risk)
- ▶ **Outcome**: Whether a program achieves its ultimate goals (reduced loss)

The Logic Model

Modeling Programs for Better Results



What is a logic model?

- A graphic, systematic representation of relationships among:
 - Resources that can be invested
 - Activities that are planned to be implemented
 - Changes in results expected to achieve
- A roadmap explaining the intervention plan that develops deeper understanding and concern about a program's goals and outcomes

Purpose of the Logic Model

- ▶ Program Planning
- ▶ Process Mapping
- ▶ Program Management
- ▶ Communication
- ▶ Consensus– Building
- ▶ Scalability

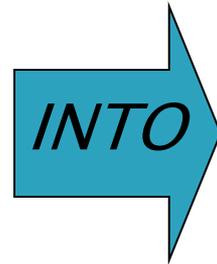


The Logic Model



Logic model is a tool for transforming...

Implicit ideas
about a
program



an Explicit
roadmap of
the program
plan

Logic Model: Step by Step

- ▶ 1. Problem Identification
- ▶ 2. Goal
- ▶ 3. Resources (Inputs)
- ▶ 4. Activities
- ▶ 5. Outputs
- ▶ 6. Impacts/Outcomes



Step 1: Problem Statement

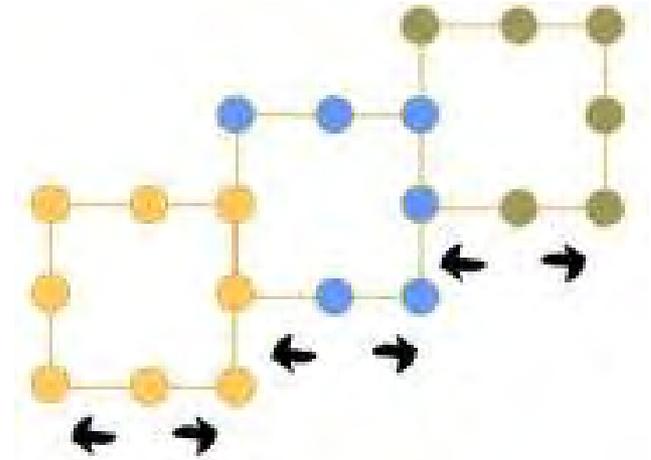
- ▶ Why are you creating or improving your program? What problem is being addressed?
- ▶ Include in your statement: “who, what, where, why, when and how”
- ▶ Sample Problem Statement:
 - “Fires are occurring more frequently in a section of Townsville, where low-income residents with limited educational resources lack the knowledge necessary to prevent fires in this high-risk neighborhood.”

Step 2: Goal

- ▶ What is the program trying to accomplish over time?
- ▶ Include:
 - Intended results
 - At risk population
- ▶ All program components connect to the overall goals)
- ▶ Sample Goal Statement:
 - “Reduce the risk of fire related injury by changing behaviors (reduce hazards, home escape plan) in Townsville by 10% in five years.”

Step 3: Resources

- ▶ Identify available resources for your program
 - List those you currently have and those you could try to secure (i.e. grants, partnerships, etc)
- ▶ Common resources:
 - Staff
 - Financial items/capital
 - Space
 - Technology
 - Equipment
 - Materials
- ▶ Example:
 - 5 full-time staff
 - 2000 Educational pamphlets
 - 1000 fire extinguishers

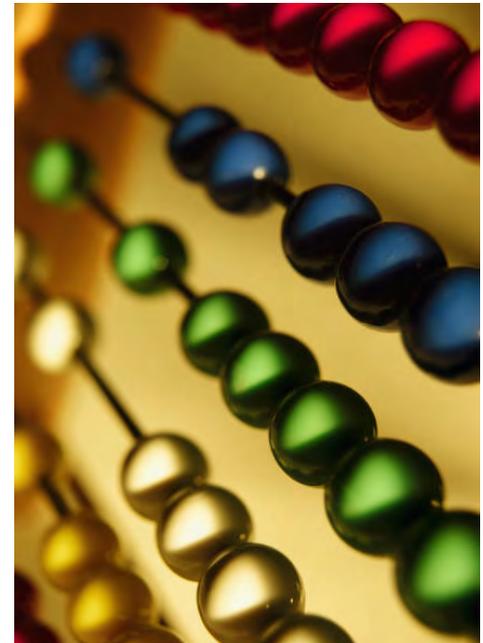


Step 4: Activities

- ▶ These are the **ACTIONS** you plan to take to address your problem and meet your goals.
- ▶ Common activities:
 - Develop educational materials
 - Train Fire Investigators
 - Prepare a smoke alarm ordinance
 - Survey building contractors for plan review improvements
 - Complete inspections of high risk areas
- ▶ Activities, once identified, assist with building a work plan (or proposal)

Step 5: Outputs

- ▶ Attached to a tangible number
- ▶ Describe the activity and quantity
- ▶ Should be associated with resources
- ▶ Examples:
 - 5 plans reviewed in Townsville
 - 100 home safety visits done
 - 2 partnerships formed
 - 3 focus groups held
 - 200 smoke alarms installed
 - 5000 pamphlets distributed
 - 50 fires investigated for cause



Step 6: Impacts & Outcomes

- ▶ Outlines the changes that occur or the differences made/planned based on your program.
- ▶ Be sure to phrase as “changes” and identify “measurable” outcomes.
- ▶ Types of changes:
 - In learning, in action, in condition, in policy, etc.
 - Can be short-term, intermediate or long-term
- ▶ Example:
 - Participants in the engineering prevention program gained new knowledge and changed their behaviors regarding fire sprinkler system installation and maintenance.

Output vs. Outcome

- ▶ Outputs: What are the tangible products of your activities?
- ▶ Outcomes: What changes do you expect to occur as a result of your work?
- ▶ **EXAMPLE:**

Output	Outcome
# of people who install smoke alarms in your city based on attending the training program	People attending the program gained new knowledge about fire prevention

Impacts



Outcomes

Short-Term

- Learning
- Closer in time, easier to measure, more attributable to program

Intermediate

- Behavior
- Increase education and engineering programs that change behavior

Long-Term

- Conditions
- More distant in time, harder to measure, less attributable to the program

Consider External Factors

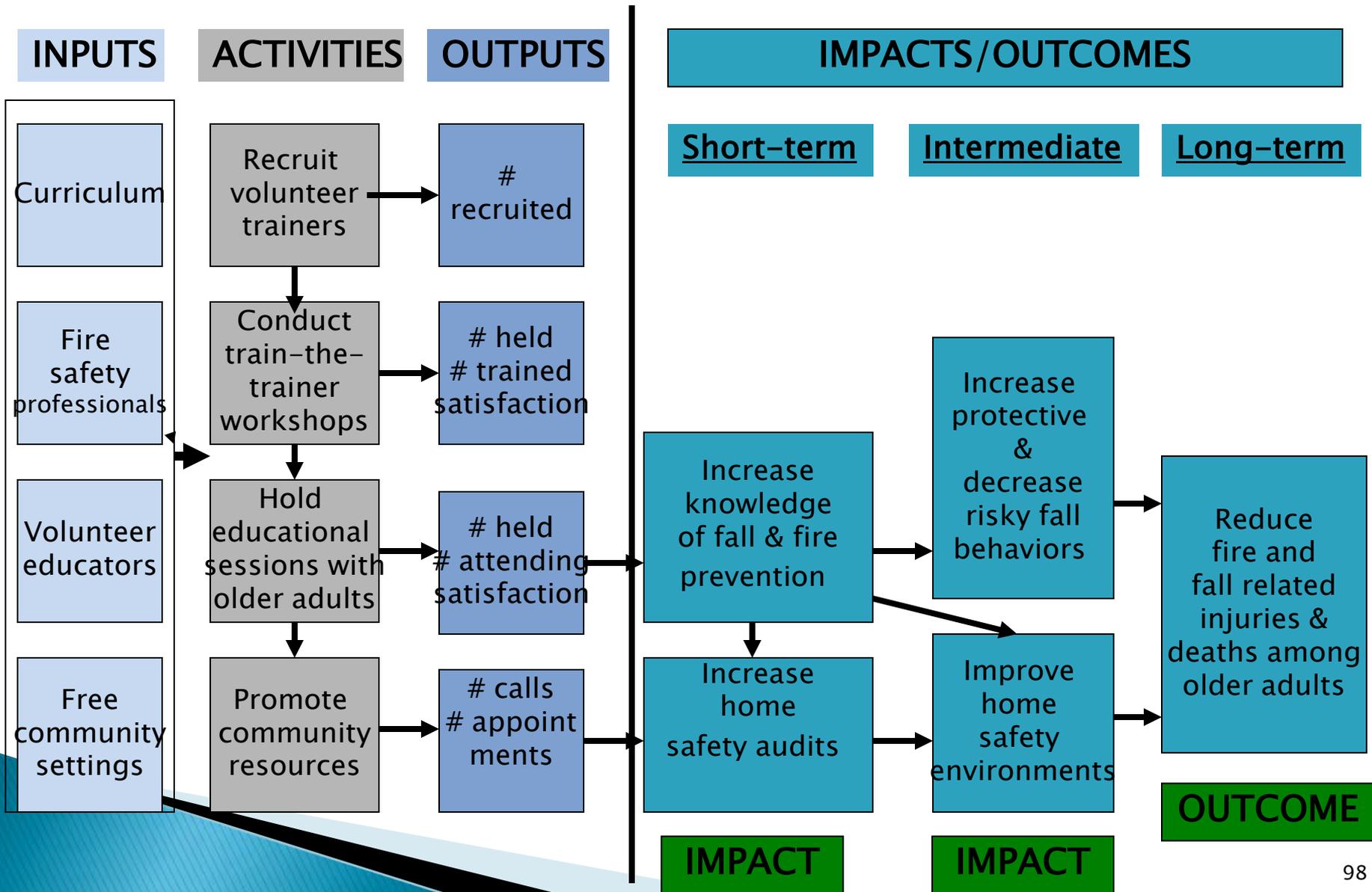
- ▶ All the other factors effecting your program's implementation and success.
- ▶ Common examples:
 - Political environment
 - Economic situation
 - Cultural context
 - Geography
 - Social constraints
 - Partnerships
 - Mother nature





“Remembering When” Logic Model Example

Remembering When Logic Model



Impact & Outcome Questions:

To what extent did older adults participating in *Remembering When*:

- increase knowledge about fall & fire prevention?
- receive more home safety audits?
- increase protective fall behaviors?
- reduce risky fall behaviors?
- home environments become more safe?
- reduce fire related injuries and deaths?
- reduce fall related injuries and deaths?

Logic Model to Evaluation

EVALUATION

Logic Model

- Problem Identification
- Goal
- Resources
- Activities
- Outputs
- Impacts/Outcomes

Implementation

- Activities
- Outputs
- Data Collection

Impacts/Outcomes

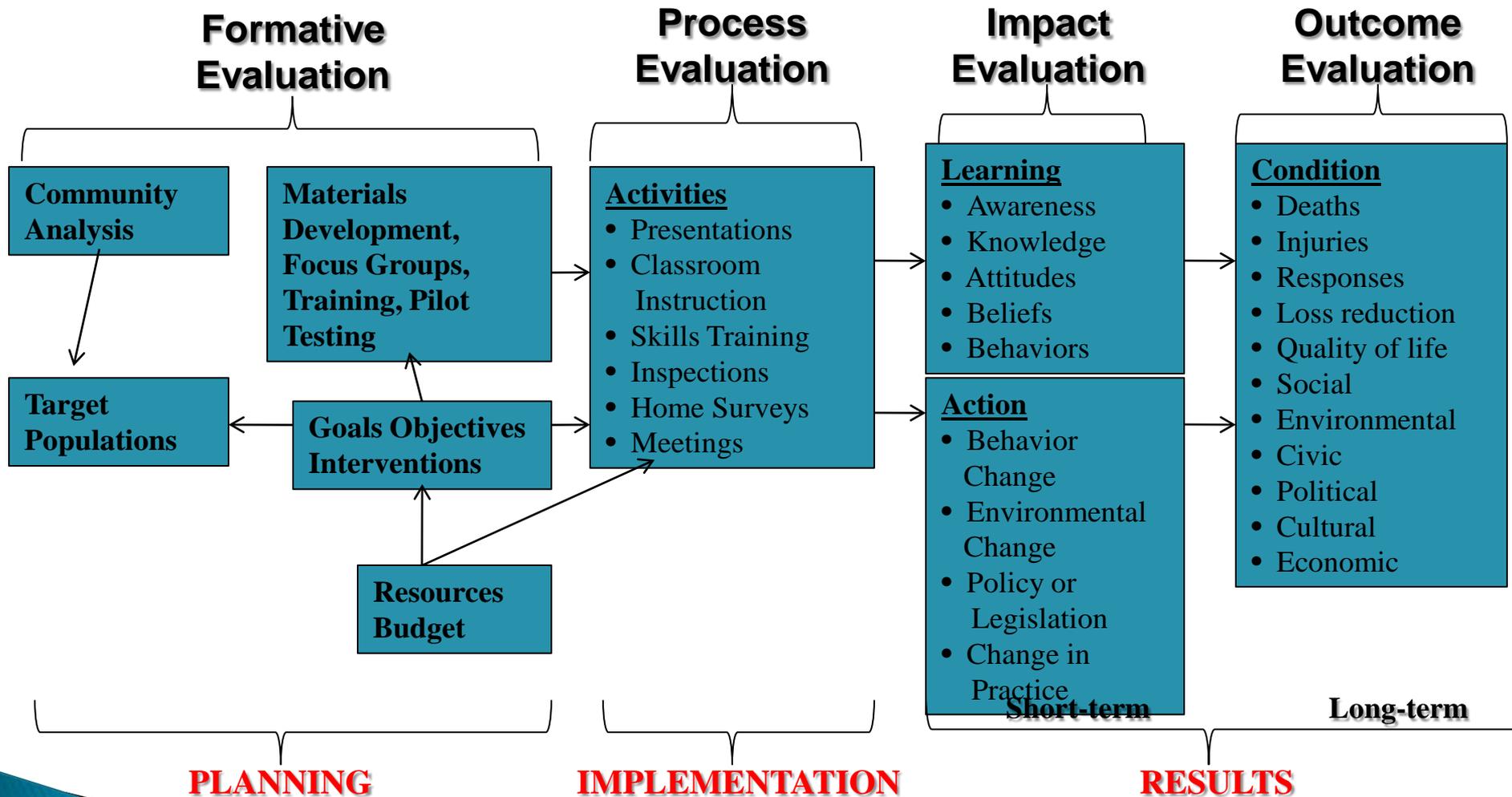
- Outcomes
- Indicators
- Data Collection

How can you use the logic model?

- ▶ Putting the pieces together.
- ▶ Process Mapping
 - Deployment of Resources and associated activities
- ▶ Charts the flow to depict the transition between different measures of activities.



How does the planning process connect to evaluation?



Break



Applications

How do we apply and illustrate our evaluation activities?

Data, Analysis & Applications



This section will:

- ▶ Introduce the sources of data & indicators for your program
- ▶ Provide examples of types of analysis
- ▶ Present several real world examples
- ▶ Allow you a chance to practice telling your story



Data Collection Methods and Sources

- ▶ Surveys
- ▶ Tests
- ▶ Interviews
- ▶ Focus groups
- ▶ Observations
- ▶ Documentation review
- ▶ Expert or peer review
- ▶ Photographs, videos
- ▶ Logs, diaries, journals
- ▶ Media records
- ▶ Existing data bases – census, housing, school
- ▶ Case study



What is an indicator?

- ▶ Offers specific evidence for the evaluation question.
 - ▶ We can observe it and capture data to reflect the observation.
 - ▶ What can I see, hear, read or smell that confirms this “thing” exists?
 - ▶ Indicators should be chosen before data is collected.
 - ▶ Measurable
- 

Qualities of a Good Indicator

- ▶ Tangible
- ▶ Direct Measure
- ▶ Specific & Clearly Defined
- ▶ Useful
- ▶ Practical
- ▶ Culturally Appropriate
- ▶ Adequate



Indicator Examples

What is an indicator of:

- ▶ Heart disease?
- ▶ Effective smoke alarm ordinances?
- ▶ Fire code enforcement?
- ▶ Bicycle safety?
- ▶ Effective Plan Review Process?
- ▶ Effective fire investigation procedures?

Analysis

- ▶ Analysis is a process that illustrates visually and mathematically the elements of your data, and if done correctly, can provide inferences and prediction about the population.
 - Research– requires more rigorous analysis
 - Evaluation
 - Performance measurement
 - ▶ Statistical validity
- 

Narrative Analysis

- ▶ Tells your story
- ▶ Use anecdotes

Statistical Analysis

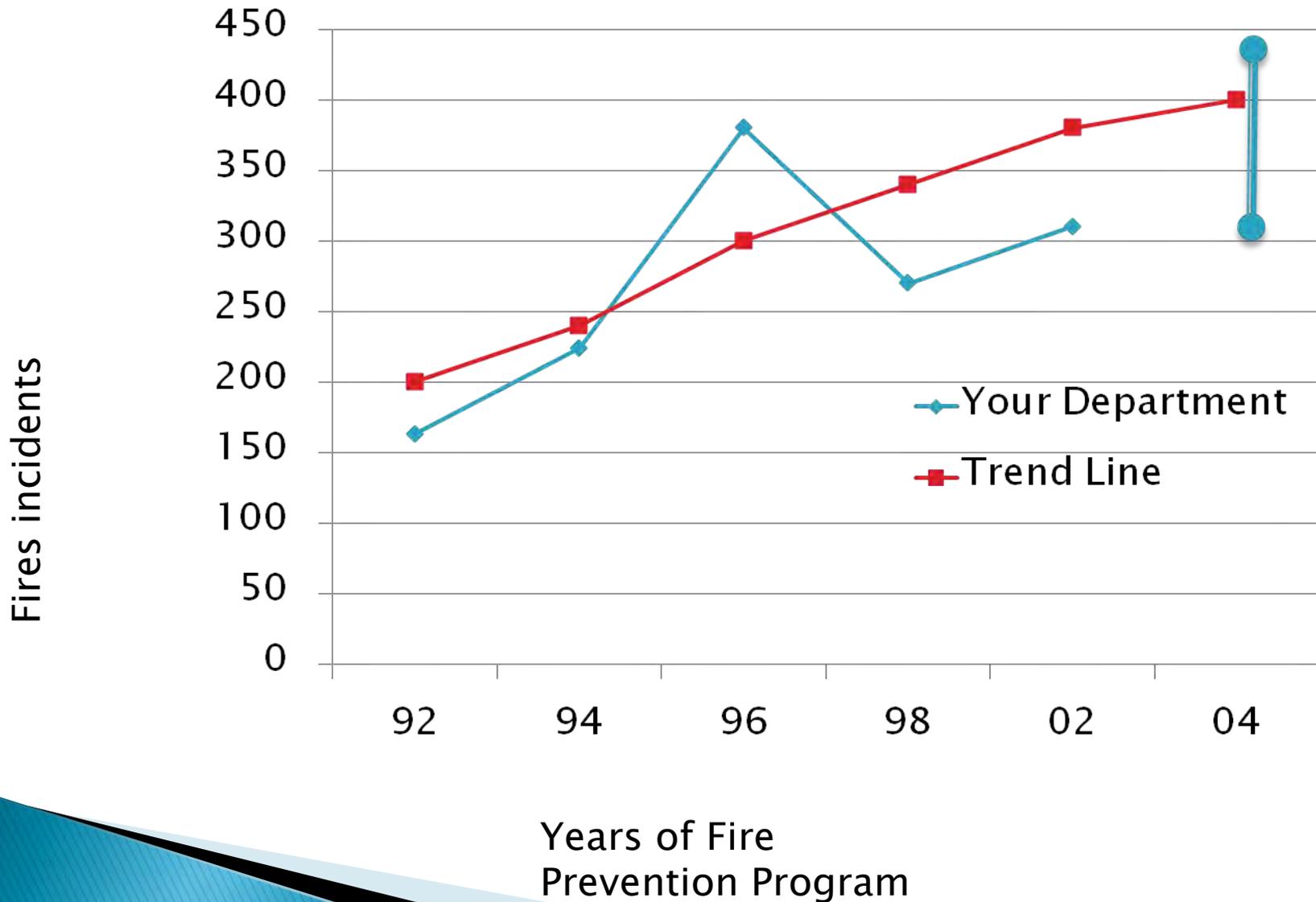
- ▶ Used to make inferences about a population (or data source)
- ▶ Can illustrate significant differences in averages and significant changes overtime



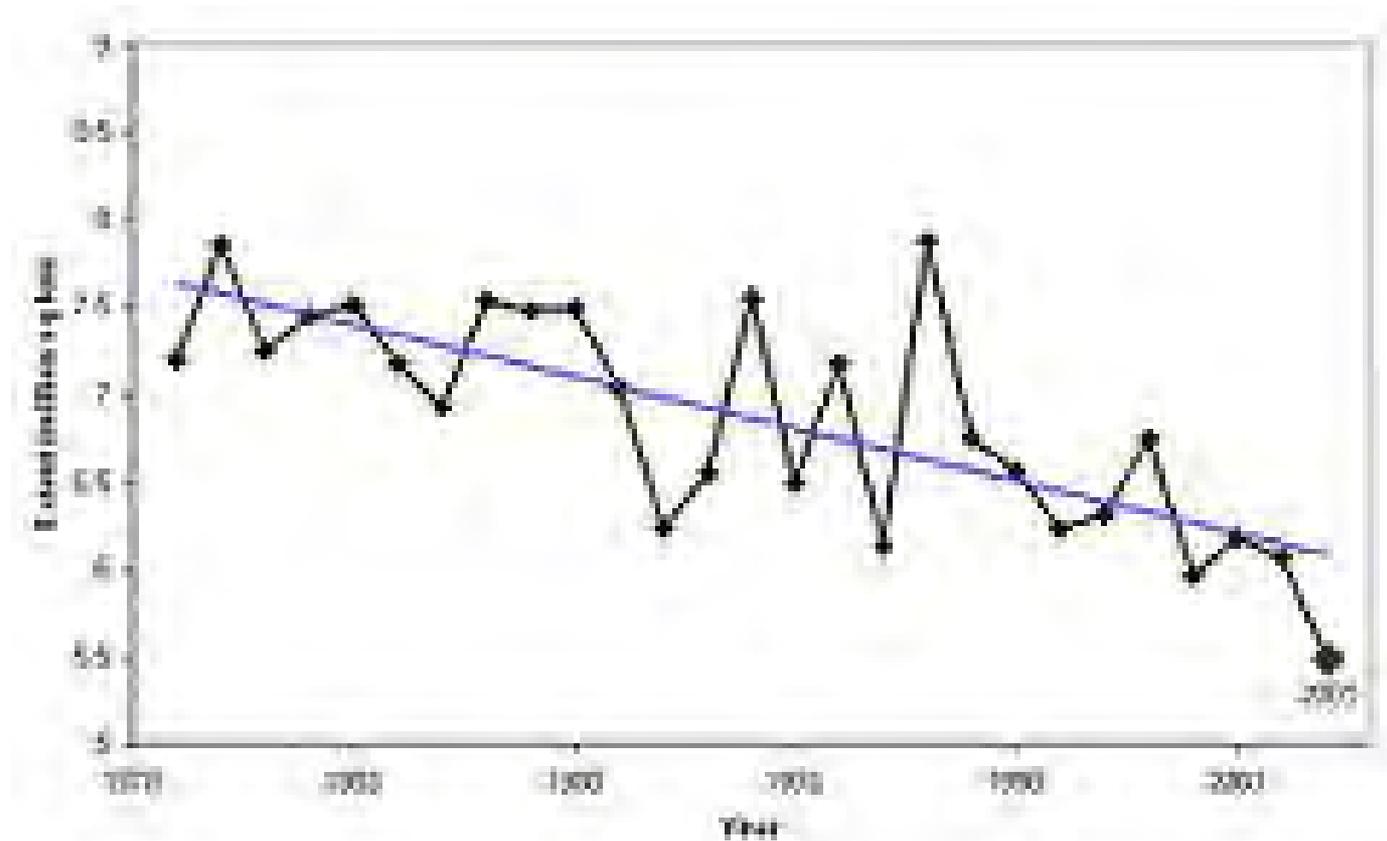
Trending

- ▶ Illustrates the fluctuation and changes in outcomes and outputs over time
- ▶ Can be compared to another department (or national average)
- ▶ Be careful to make claims
 - 50% reduction in one year?
- ▶ Trending important for outcome measurement – over time to indicate changes not due to random chance or normal variances

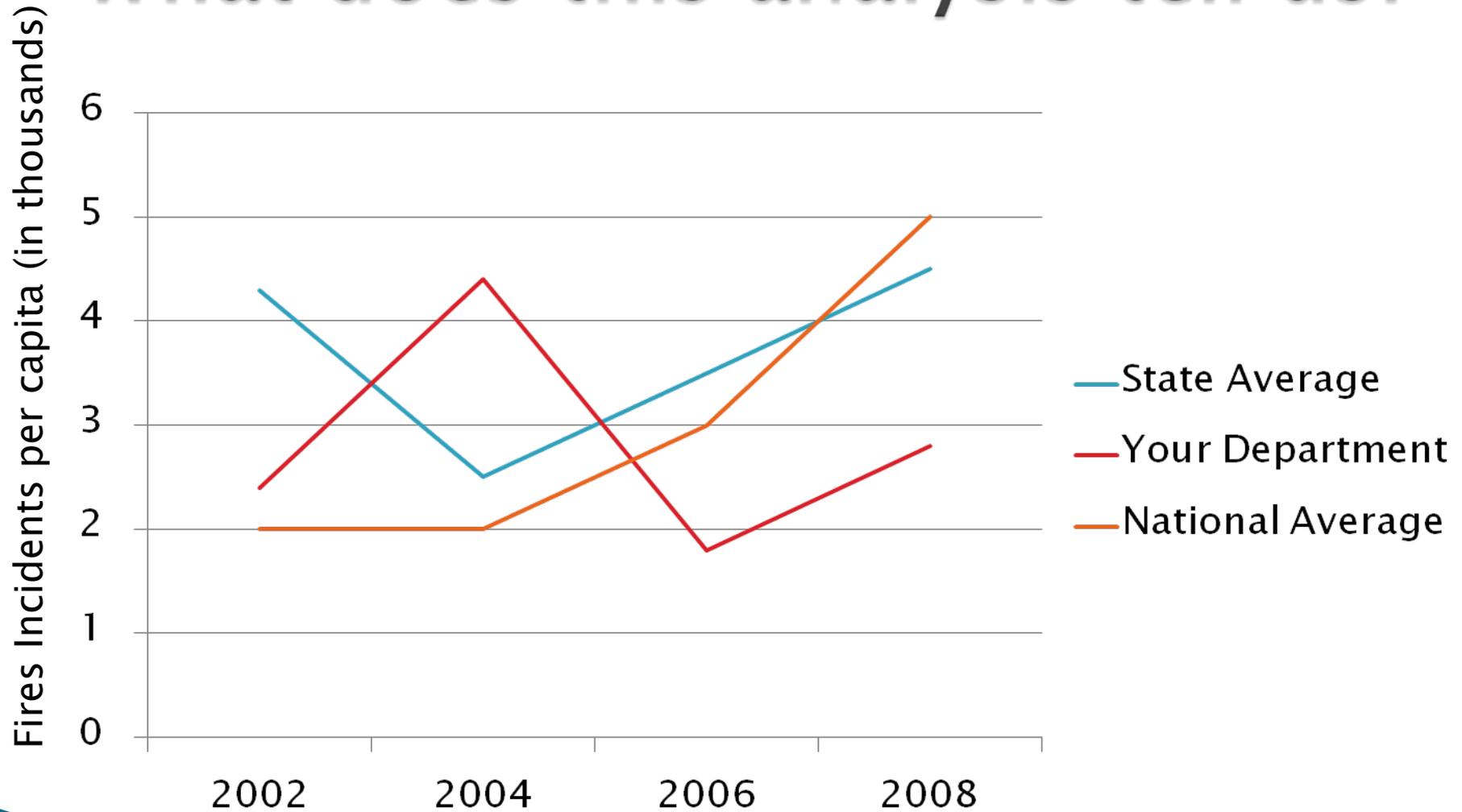
Trending Example



Trending– What can we say about this analysis?

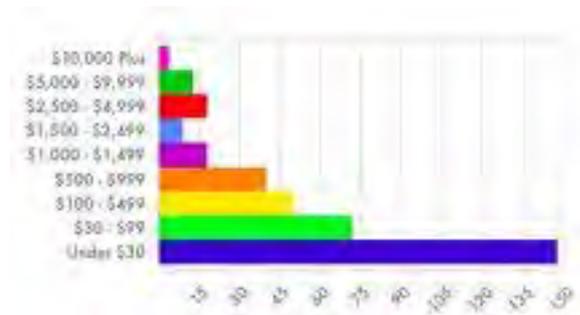


What does this analysis tell us?

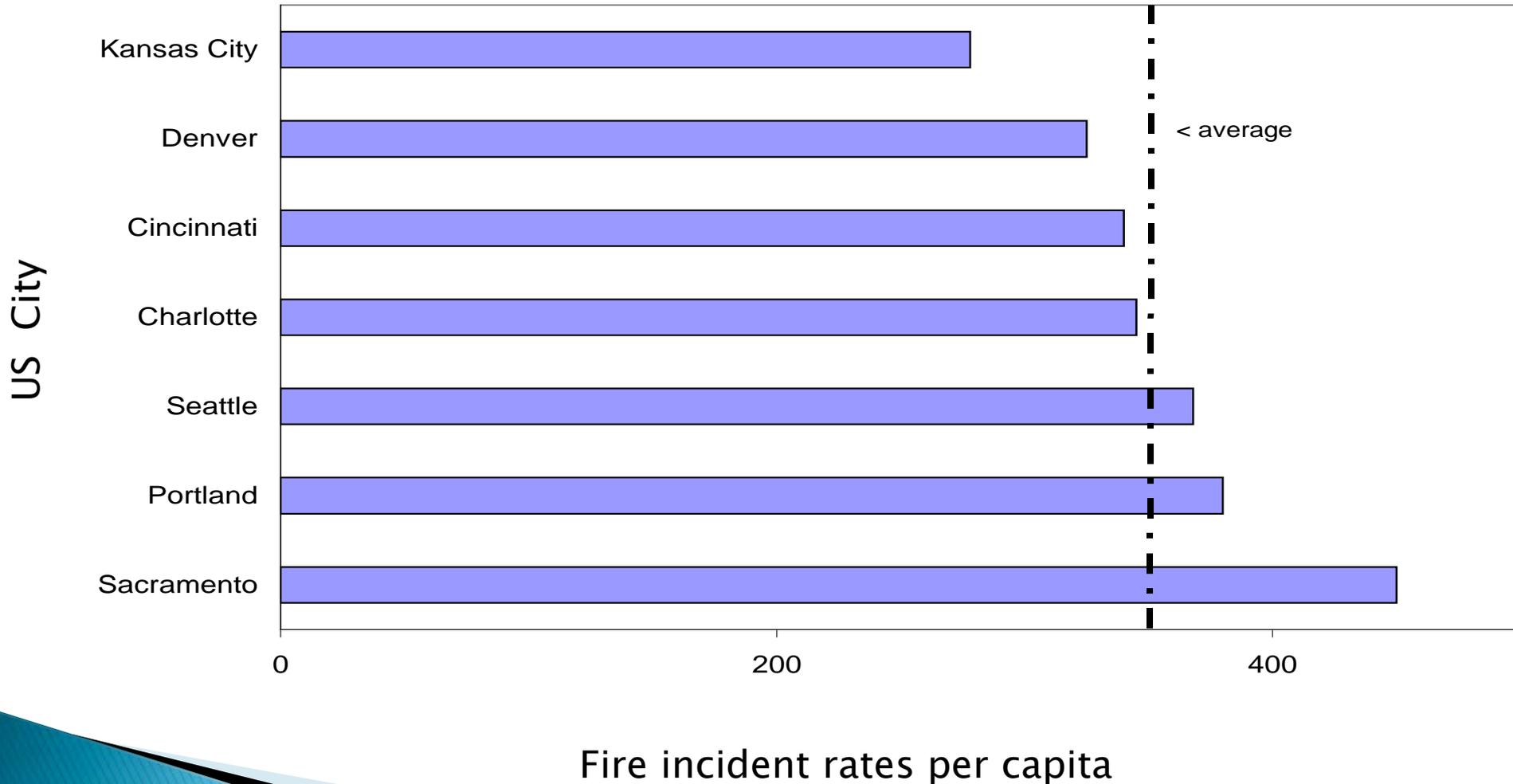


Benchmarking

- ▶ Process of comparing a department or agency against other departments or agencies.
- ▶ Generally we focus on a performance or evaluation metric and compare our results to other's best practices.
- ▶ Can be completed longitudinally, linking benchmarking to trending.



Benchmarking Example



Performance Measurement

- ▶ Linked to organizational/operational strategy.
 - Tracking results and deploying available resources to achieve a desired goal (decision-making).
 - ▶ Serves as a mechanism of transparency and accountability to stakeholders.
 - ▶ Focus on efficiency in obtaining effective outcomes.
 - ▶ Integrated into strategic planning and budgeting cycles.
- 

Performance Measure Example

White: No goal; **Green:** Fully met the goal; **Yellow:** Missed the goal, but are close OR provided limited service; **Red:** Clearly missed the goal OR a very bad trend; **FPY** = From Previous Year; **up= trend better** **is trend worse**; \leq is "less than or equal"; \geq means "greater or equal"

Performance Measures & Outcomes	Current Goal	2006	2007	2008	Trend	Analysis
We respond quickly to emergencies						
Total calls for service - all types	decrease FPY	21,203	21,326	23,184		
Urban/City response (81.5% of call volume) arrive within 5 minutes:	90%	57%	59%	61%		
Suburban response (5.9% of call volume) arrive within 6 minutes:	90%	55%	54%	52%		
Rural response (2.9% of call volume) arrive within 8 minutes	90%	71%	69%	73%		
False Alarms - False alarms as a percent of total fire/EMS calls	< 5%	3.8%	3.4%	4.7%		
Our medical response is effective (EMS)						
Cardiac arrest survival rate (calls where revival attempted)	increase FPY	13.6%	26.5%	57%		Roxy working on
Advanced Life Support: percent of calls to nursing, assisted living & medical facilities ²	decrease FPY	14.3%	8.3%	7.9%		
Advanced Life Support (Paramedic) average on-scene time	decrease FPY	17:06	18:00	16:03		

Process and Outcome Measure Examples in Performance Reporting

We minimize the effect of fires (Fire Service)						
Percent of fires confined to room of origin	increase FPY	49%	50%	40%	Outcome	
Average dollar loss due to structure fires	decrease FPY	\$15,523	\$12,585	\$41,462	Outcome	
Average total fire response on-scene time	decrease FPY	44:53	55:11	47:11	Output	P
We prevent fires (Fire Prevention)						
Determine cause of fires	> 80%	78%	90%	89%	Outcome	
Conduct safety presentations	> 200	241	186	183	Output	P
Number of effective fire inspection programs	> 5,000	5,669	5,780	6,006	Output	P

Impact and outcome Measure Examples in Performance reporting.....

We minimize the effect of fires (Fire Service)						
Percent of fires confined to room of origin	increase FPY	49%	50%	40%	Outcome	
Average dollar loss due to structure fires	decrease FPY	\$15,523	\$12,585	\$41,462	Outcome	
We prevent fires (fire prevention)						
Average % knowledge gain	> 20%	35%	37%	42%	Impact	
Determine cause of fires	> 80%	78%	90%	89%	Outcome	
Conduct safety presentations	> 200	241	186	183	Output	P
Number of effective fire inspection programs	> 5,000	5,669	5,780	6,006	Impact	

Case Studies

- ▶ Takes one example and explores from multiple directions.
- ▶ Systematically describes the background, steps taken and results of the study
- ▶ Tells an in-depth “story” about the phenomena
 - Can include quantitative & qualitative analysis
- ▶ The Oklahoma City study is one such example

Real World Example #1

- ▶ Scottsdale, Arizona
- ▶ Using sprinkler technology to reduce residential fire damage, beginning in the 1980s
- ▶ Overtime, the results have indicated the initiative produced positive results
- ▶ “The impact and installation costs have been reduced dramatically, from \$1.14 sq. ft to \$0.59 sq. ft. The average fire loss per sprinklered incident was only \$1,945, compared to a non-sprinklered loss of \$17,067.”

Real World Example #2

- ▶ Tualatin Valley Fire & Rescue, Oregon
 - Landlord Tenant Training
 - 104 landlord participants attended.
 - Each was given a pre/post-test
 - 400 tenants returned the survey (each has a landlord attend the training).
 - Landlord and tenants were given a follow-up survey
 - Results indicated a major positive impact on fire safety
 - Over time, with results from the training pre/post test and follow-up surveys, evidence has been gathered to support the program's effectiveness.

Conclusion & Questions



Review

- ▶ Logic Model
- ▶ Evaluation
- ▶ Applications

Any Questions?



Challenges

- ▶ Evaluation takes resources
- ▶ Available data may not be available or reliable
- ▶ Small numbers of comparable cases
- ▶ Impact may not be immediately seen
- ▶ Regional Differences
- ▶ Scalability
- ▶ Capacity Building

Additional Resources

- ▶ Please see your workbook and CD for a list of additional websites and resources related to our session.