



Model Performance in Community Risk Reduction

SYMPOSIUM 2018

Causal Chain Analysis and Data Driven Messaging

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OBJECTIVES

Goals

- Identify root causes and interventions for local fire-related risks through application of causal chain analysis
- Reduce the fire death rate and number of civilian fire-related injuries



Causal Chain Analysis

- Explores factors or actions that contribute to the cause of a risk beyond traditional data collected
- Examines the chain of events from pre-event to event to post-event
- Interventions that disrupt the chain can eliminate or reduce the risk



FORMATIVE EVALUATION

Risk Assessment

- Analyzed 5 years of data
- Evacuate and Call 911
 - Occupants attempted to fight the fire in 40% of residential structure fires
 - Delayed call to 911 at least 15% of the time
 - 54% of civilian fire-related injuries were people trying to fight the fire themselves

Risk Assessment

- Working smoke alarms
 - Only 53% of homes involved in structure fires had one
- Candle Fires
 - Experienced more candle fires in a 3 year period than the prior 10 years



PROCESS EVALUATION

Intervention Strategies

- Get out and call 911
- Working smoke alarms
- Enough with the candle fires! Blow out candles when leaving a room



Implementation

- Messages delivered across 3 main platforms
 - Community magazine and social media
 - Elementary school fire and life safety education program
 - Home visits with smoke alarm installations





IMPACT EVALUATION

Impacts

- Get Out and Call 911: Results
 - Occupants attempting to fight the fire themselves reduced from 40% to 32% for residential structure fires
 - Occupants attempting to fight the fire themselves reduced from 50% to 40% for cooking fires

Impacts

- Working Smoke Alarms: Results
 - Percentage of homes involved in a structure fire with a working smoke alarm increased from 53% to 69%
- Candle Fires: Results
 - Candle fires reduced 80%



OUTCOME EVALUATION

Results

- Residential structure fires
 - Reduced 7%
 - Total dollar loss reduced 28%
 - Dollar loss per structure fire reduced 20%



Results

- Smoke alarms installed by the fire department alerted in 3 structure fires
 - 17 year old rescued from one of the fires
- Rate of civilian fire-related injuries per structure fire reduced by over 60%





RECOMMENDATIONS

Data, Data, Data

- Create user fields in incident reporting software to collect data on risk factors
- Use a checklist to guide fire officers and investigators in gathering risk data
- Local data is most beneficial



Lessons Learned

- Promote successes for greater buy-in of risk reduction efforts
- Train personnel in standard messages
- Utilize partnerships to help get the message out
- Pair messaging with other intervention strategies such as home visits