



Education Development Center

Thursday, October 21, 2021 3:00 p.m. - 4:00 p.m.

## Partnerships to Prevent Fire Escape Plan and Burn-Related Injuries **Among Children**

## **Moderator**



#### Zina Gontscharow, MPP

Senior Policy Advisor American Nurses Association



## **Funding Sponsor**

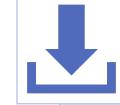
This project is supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under the Child and Adolescent Injury and Violence Prevention Resource Centers Cooperative Agreement (U49MC28422) for \$5,000,000 with 0 percent financed with non-governmental sources. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.



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Use the Q & A (bottom left) to ask questions at any time



You are muted



This session is being recorded



## **Presenters**



Monica Owens Doyle, BA/BS, CNP, PMP

National Program Manager for Home Fire Campaign American Red Cross



Sam Johnson, MS

Program Lead for Youth Preparedness

American Red Cross



Elise Omaki, MHS

Research Associate Johns Hopkins Center for Injury Research and Policy



# Home Fire Prevention and Safety: What Does the Research Tell Us?

## **Elise Omaki, MHS**



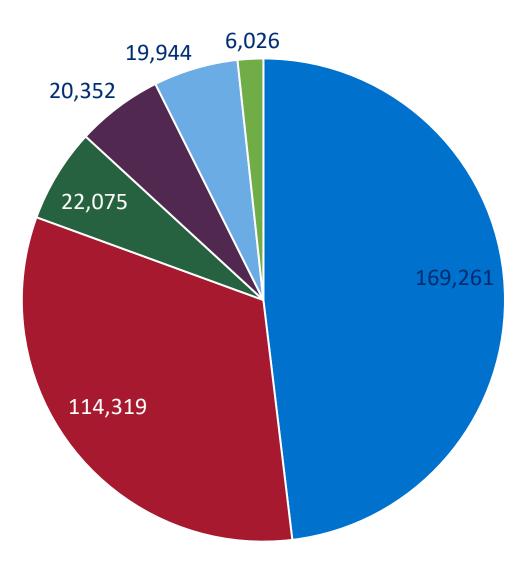
Johns Hopkins Center for Injury Research and Policy

### Pediatric Burn Injuries

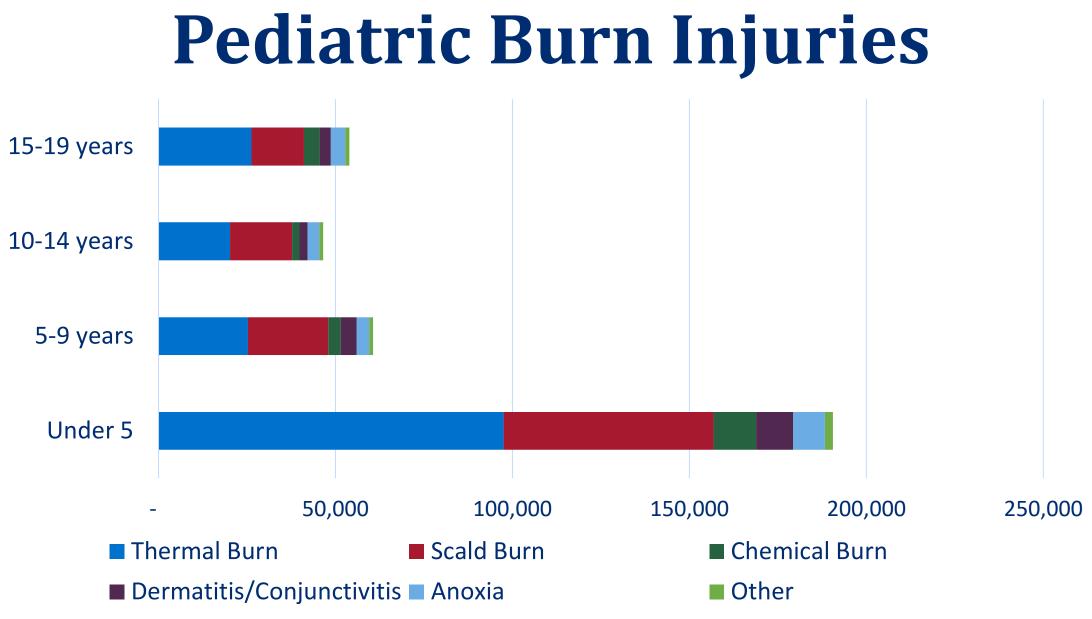
Thermal Burn

- Scald Burn
- Chemical Burn
- Dermatitis/Conjunctivitis
- Anoxia

Other

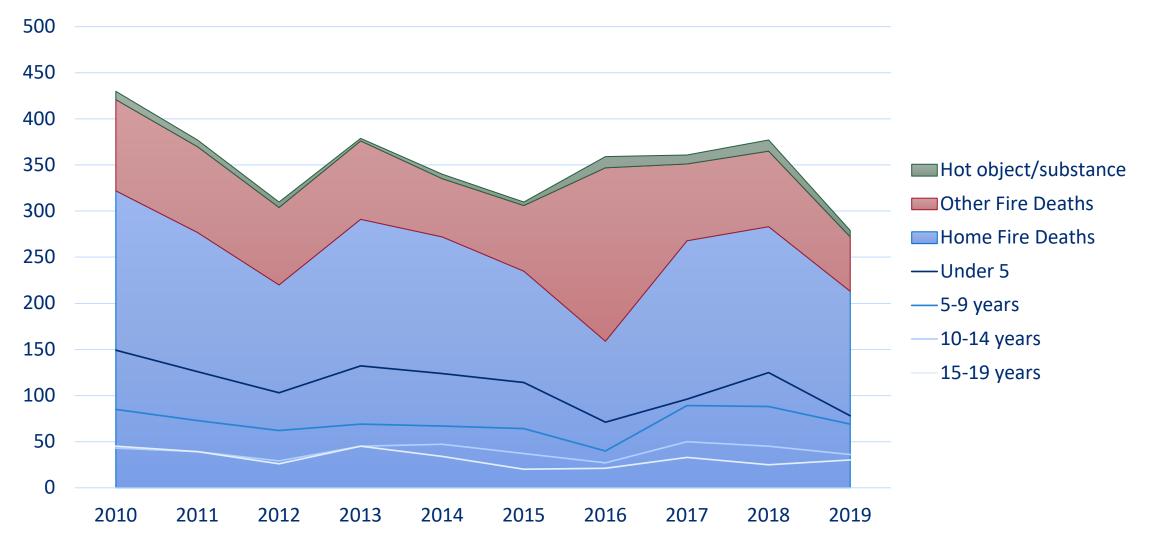


Source: NEISS AIP



Source: NEISS AIP

## **Pediatric Deaths from Fire & Burns in the US**



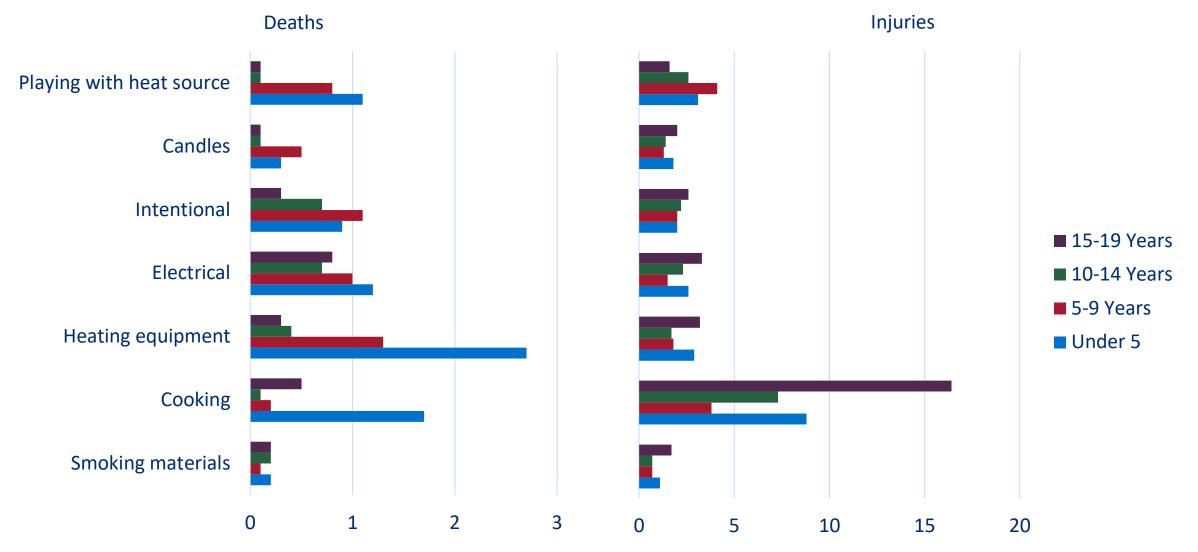
Source: CDC WISQARS

# **The Burden of Fires**

- Fires cause over civilian 3,300 deaths, 15,000 injuries and \$16 billion in property damage each year.
- Home fires make up 27% of reported fires, they are responsible for 77% of civilian fire deaths and 73% of fire injuries.
- Cooking is the leading cause of fire; smoking is the leading cause of fatal fires



### **Deaths and Injuries per Million by Cause of Fire, 2011-2015**



Source: NFPA



## **Smoke Alarms**

- A working smoke alarm reduces the risk of fire related death by 50%.
- NFPA recommends a smoke alarm inside each bedroom, outside each sleeping area, and on every level of the home.
- One study estimated that 22% of homes had the minimum recommended number of smoke alarms.

DEATHS AND INJURIES FROM HOUSE FIRES Special Article DEATHS AND INJURIES FROM HOUSE FIRES GREGORY R. ISTRE, M.D., MARY A. MCCOY, B.S., LINDA OSBORN, JEFFREY J. BARMARD, M.D., AND ALLEN BOLT ABSTRACT Betherword . We excelded defees the former on a scomplished in some locations by making	Elanor A. Sidman · David C. Grossman ·	Journal of Community Health, Vol. 29, No. 5, October 2004 (© 2004) STRATEGIES TO INCREASE SMOKE ALARM USE IN HIGH-RISK HOUSEHOLDS Pauline A. Harvey, MSPH; Mary Aitken, MD, MPH; George W. Ryan, PhD; Lori A. Demeter, PhD; Jeanne Givens, MSSW; Ramya Sundararaman, MD, MPH; Scott Goulette
Research Articles	HEALTH EDUCATION RESEARCH Vol.28 no.4 2013 Pages 599–611 Advance Access published 13 March 2013	ORIGINAL ARTICLE
Prevalence of Residential Smoke Alarms and Fire Escape Plans in the U.S.: Results from the Second Injury Control and Risk Survey (ICARIS-2)	Fire and scald burn risks in urban communities: who is at risk and what do they believe about home safety? E. M. Parker <sup>1</sup> *, A. C. Gielen <sup>1</sup> , E. M. McDonald <sup>1</sup> , W. C. Shields <sup>2</sup> , A. R. Trump <sup>2</sup> , K. M. Koon <sup>2</sup> and V. Jones <sup>1</sup>	Enhancing Fire Department Home Visiting Programs: Results of a Community Intervention Trial Andrea C. Gielen, ScD, ScM,* Wendy Shields, MPH,* Shannon Frattaroli, PhD, MPH,* Eileen McDonald, MS,* Vanya Jones, PhD, MPH,* David Bishai, MD, PhD,* Raymond O'Brodki; Elise C. Perry, MHS,* Barbara Bates-Hopkins,‡ Pat Tracey,‡
ORIGINAL ARTICLE When one is not enough: prevalence and characteristics of homes not adequately protected by smoke alarms C Peek-Asa, V Allareddy, J Yang, C Taylor, J Lundell, C Zwerling Minur Prevention 2005;11:364-368. doi: 10.1136/jp.2005.009175 Objective: The National Fire Protection Association (NFPA) has specific recommendations about the brusehold. No previous studies have examined whether or not home are completely protected according to these guidelines. The outbors deart the preveneer and home characteristics associated with	BURN PREVENTION SECTION Working Toward the Elimination of Residential Fire Deaths: The Centers for Disease Control and	Stephanic Parsons, MHS* Research Full Report Utilizing Facebook and Automated Telephone Calls to Increase Adoption of a Local Smoke Alarm
compliance to recommendations for smoke dam installation by the NFPA.	Prevention's Smoke Alarm Installation and Fire Safety	Installation Program
journal of Safety Research 42 (2011) 409-413	Prevention's Smoke Alarm Installation and Fire Safety Education (SAIFE) Program Michael F. Ballesteros PhD, Mark L. Jackson, BS, Maurice W. Martin, PhD	Installation Program Shannon Frattaroli, PhD, MPH; Eric Schulman, MPS; Eileen M. McDonald, MS; Elise C. Omaki, MHS; Wendy C. Shields, MPH; Vanya Jones, PhD, MPH; William Brewer
compliance to recommendations for uncke alarm installation by the NFPA. Design, setting, and subjects: Data are from the baseline on-site survey of a randomized trial to measure	Education (SAIFE) Program	Shannon Frattaroli, PhD, MPH; Eric Schulman, MPS; Eileen M. McDonald, MS; Elise C. Omaki, MHS; Wendy C. Shields, MPH; Vanya Jones, PhD, MPH; William Brewer Epidemiologic Reviews © The Author 2011. Published by Oxford University Press on behalf of the Johns Hopkins Bloomberg School of Public Health. DOI: 10.1003/Sptime All rights reserved. For permissions, please e-mail: journals.permissions@oup.com. November November
compliance to recommendations for uncke adarm installation by the NFA. Design, setting, and subjects: Data are from the baseline on-site survey of a randomized trial to measure Journal of Safety Research 42 (2011) 409-413 Contents lists available at SciVerse ScienceDirect Journal of Safety Research journal homepage: www.elsevier.com/locate/jsr	Education (SAIFE) Program         Michael F. Ballesteros PhD, Mark L. Jackson, BS, Maurice W. Martin, PhD         To obtain it out for the former in the form	Shannon Frattaroli, PhD, MPH; Eric Schulman, MPS; Eileen M. McDonald, MS; Elise C. Omaki, MHS; Wendy C. Shields, MPH; Vanya Jones, PhD, MPH; William Brewer Eridemickogic Reviews © The Author 2011. Published by Oxford University Press on behalf of the Johns Hopkins Bloomberg School of Public Health. DOI: 10.1030/optime All rights reserved. For permissions, please e-mail: journals.permissions@cop.com. November Network Meta-analysis to Evaluate the Effectiveness of Interventions to Increase the Uptake of Smoke Alarms
compliance to recommendations for uncke adam installation by the NFA. Design, setting, and subjects: Data are from the baseline on-site survey of a randomized trial to measure Journal of Safety Research 42 (2011) 409-413 Contents lists available at SciVerse ScienceDrect Journal of Safety Research Journal homepage: www.elsevier.com/locate/jsr	Education (SAIFE) Program         Michael F. Ballesteros PhD, Mark L. Jackson, BS, Maurice W. Martin, PhD         Total Control of Community Health, Vol. 31, No. 3, June 2006 (© 2006)         DOI: 10.1007/s10900-005-9007-z         EVALUATED COMMUNITY FIRE SAFETY         INTERVENTIONS IN THE UNITED STATES: A REVIEW OF CURRENT LITERATURE         Verentian frame         Van M. Ta, MPH; Shannon Frattaroli, PhD, MPH; Gwendolyn Bergen, PhD, MPH; Andrea Carlson Gielen, ScD, ScM, CHES	Shannon Frattaroli, PhD, MPH; Eric Schulman, MPS; Eileen M. McDonald, MS; Elise C. Omaki, MHS; Wendy C. Shields, MPH; Vanya Jones, PhD, MPH; William Brewer Epidemiologic Reviews Vol. © The Author 2011. Published by Oxford University Press on behalf of the Johns Hopkins Bloomberg School of Public Health. DOI: 10.1093/Sptime All rights reserved. For permissions, please e-mail: journals.permissions@oup.com. November Network Meta-analysis to Evaluate the Effectiveness of Interventions to Increase

SDC

Vol. 34, 2012 DOI: 10.1093/epirev/mxr015

Advance Access publication: November 29, 2011

# **Translating Research into Action**



- What is the target population?
- How will the home visits be implemented?
- How will the program be promoted?
- How will impact be measured?

## Door-to-door Canvassing: The Johns Hopkins Home Safety Project



## **Door-to-door Canvassing**

- Those homes that received advance notice were more likely to allow firefighters into the home and allowed more smoke alarms to be installed
- Still, 40% of households weren't home at the time of the home visit



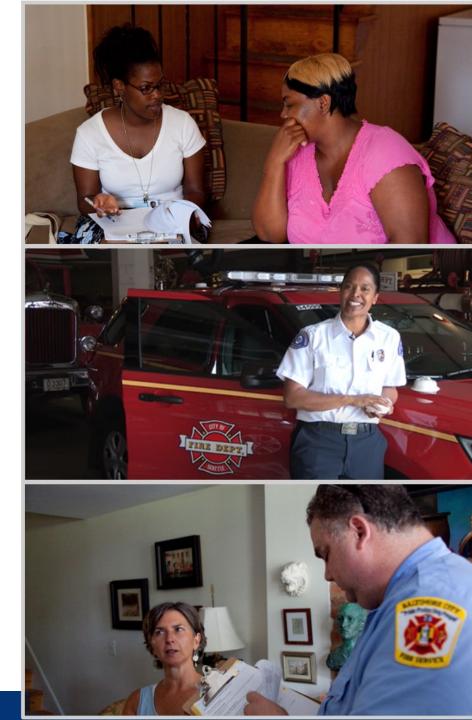


Leveraging Partnerships: Phoenix Fire Department & the Nurse-Family Partnership



# Leveraging Partnerships

- Over half of the participating homes had no working smoke alarm.
- As a result of working with NFP, PFD installed 65 smoke alarms, and every home had at least one working smoke alarm by the end of the home visit.
- Both organizations were enthusiastic about, and supportive of the project.







#### Baltimore

Facebook ads reached 130,264 users; 4,367 individuals clicked the advertisement and 25 completed an installation

The automated call system included approximately 90k residential phone numbers and yielded 458 installations.





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#### Rochester

59,000 phone numbers called over 1 month

Requests for smoke alarms increased by a factor of 7.5 in the month following the automated calls

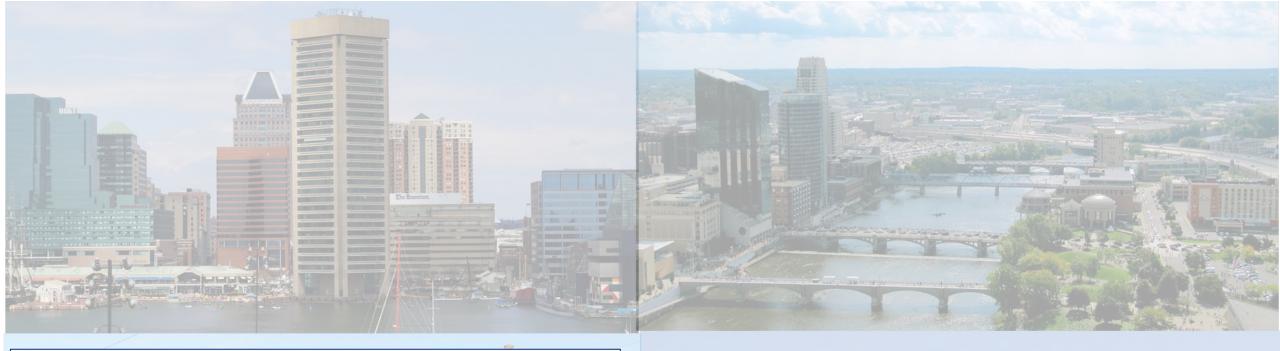


#### Grand Rapids

5,379 phone numbers called over 14 days spread over 8 weeks

Message circulation limited resulting in few additional requests for smoke alarms





#### Cloquet

2,090 phone numbers called over ten days spread over five months, 319 postcards mailed to new township

Operations were streamlined by consolidating home visit requests to circulation area





## **Promoting Scheduled Home Visits**

- Fire Departments should consider their programs carefully to identify need and opportunities.
- Automated calls can help increase demand or streamline operations, depending on capacity

## **Questions?**



Please enter your questions in the Q & A pod



## Home Fire Campaign Overview

- Goal: save lives and reduce injuries
- Methodology: target high risk areas for free smoke alarm installation and in-home fire safety education
- Reach: services are offered across every state, including tribal nations, and all U.S. Territories



## **Progress to Date**

Campaign Metrics – As of Aug 31st, 2021	Totals
Documented Lives Saved	1,048
States, U.S. Territories, and Washington, D.C.	56
Cities and Towns	18,165
Households Made Safer	944,856
People Served through Home Visits	2,482,269
Alarms Installed (includes 14K+ bed shakers)	2,231,949
Fire Escape Plans Made	815,190



### **Annual Home Fire Statistics**

- 370,000 Home Fires
- 2,700 Fatalities
- 12,000 Injuries
- \$1 Billion Treating Injuries
- \$7 Billion in Property
   Damage

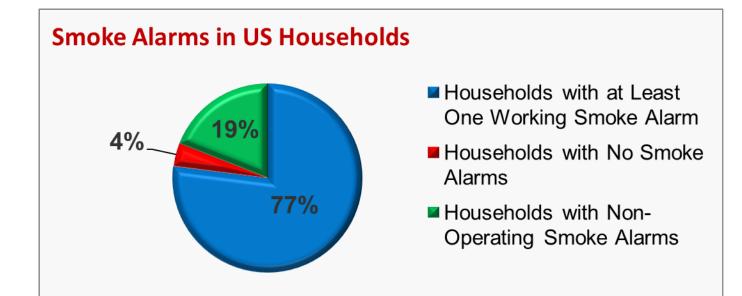




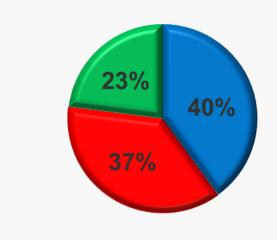
### **Home Fire Risk Analysis**

- To achieve our goals, we target our services in neighborhoods and communities that are most at-risk
- Working closely with fire department partners and other non-profits has been essential for getting into highrisk homes





#### **Home Fire Fatalities in US Households**

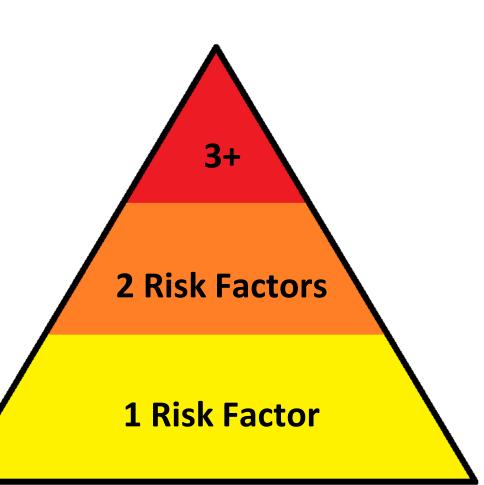


- Households with at Least One Working Smoke Alarm
- Households with No Smoke Alarms
- Households with Non-Operating Smoke Alarms



### **Additional Risk Factors**

- Poverty
- Rurality
- Housing Type
- Heating Sources
- Age
- Race/Ethnicity
- Disability/ Hearing Loss





### **Available Data**

- National Fire Incident Reporting System (fire incident data)
- American Community Survey (demographic and housing stock data)
- Red Cross Fire Safety Visits (smoke alarm presence data)
- Social Vulnerability Index Data



### **Data Modeling**

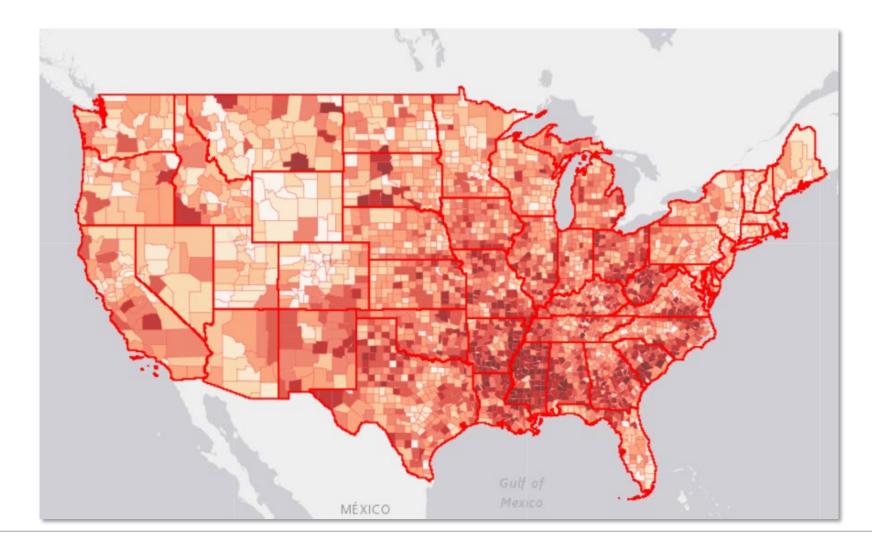
We use machine learning models to help us predict areas that have the greatest risk in the following categories:

- Fire Propensity
- Fire Severity (death or injury)
- Smoke Alarm Presence

Home Fire Risk Scores are assigned a value between 0 and 100 based on the average score from the three models.

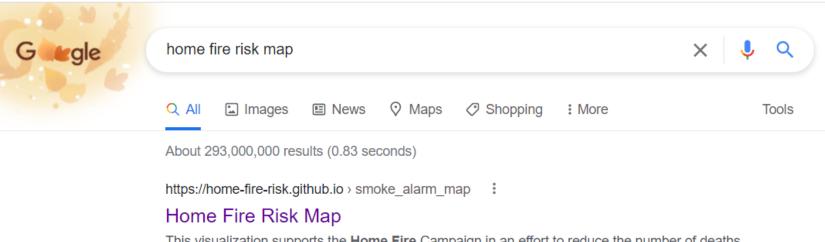


### **Using the Home Fire Risk Map**





### Step 1: Search for, or Navigate to the Home Fire Risk Map

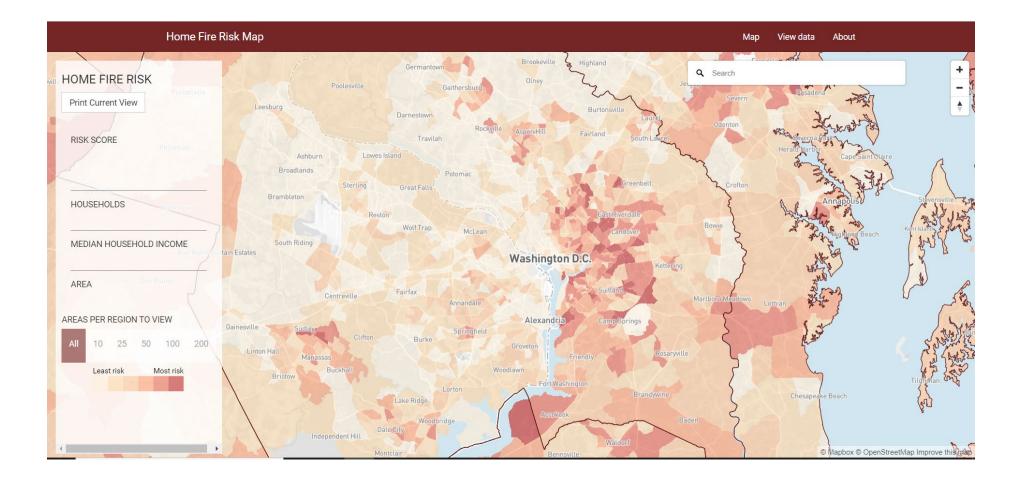


This visualization supports the **Home Fire** Campaign in an effort to reduce the number of deaths and injuries caused by **home fires**.

#### https://home-fire-risk.github.io/smoke alarm map/

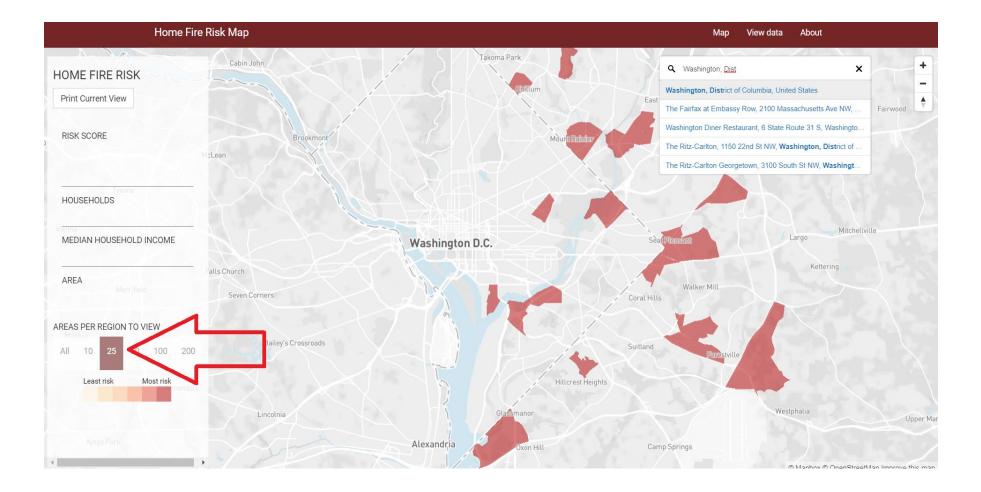


#### **Step 2: Navigate to Desired Area**





#### **Step 3: Use Filters**





## **Step 4: Explore the Data**

#### HOME FIRE RISK

Print Current View
RISK SCORE
59
6/1122 Wolf Trap
HOUSEHOLDS
899
MEDIAN HOUSEHOLD INCOME
\$14,813 Vienna
AREA
Tract 74.01

Mouse hover over census tract to view a basic snapshot on the left of the screen, includes:

- Overall Risk Score
- Census Tract Rank (compared to other tracts in ARC Region)
- # Households
- Median Income
- Tract Name



## **Step 5: Dive Deeper**

Home Fire Risk Map									Map View data About			
ational Capit	tal Area Region	•	View data by Red Cross Region									
Сору	CSV Excel	PDF Print								Search: (		
Rank	Risk score	Tract 🍦	County	Households	Median household income	Hispanic 🛊	White	Black	Risk - no smoke alarm	Risk - home	Risk - fire-related injury	
1	63	Census Tract 8027	Prince George's County	933	\$45,938	12%	4%	81%	76	43	62	
2	62	Census Tract 96.01	District of Columbia	768	\$26,607	0%	0%	97%	78	54	27	
3	60	Census Tract 8021.03	Prince George's County	1,118	\$85,346	11%	12%	71%	65	58	51	
4	60	Census Tract 8029.01	Prince George's County	1,367	\$45,202	10%	1%	88%	69	47	58	
5	59	Census Tract 8022.01	Prince George's County	811	\$61,490	1%	18%	75%	71	43	52	
б	58	Census Tract 74.01	District of Columbia	899	\$14,813	2%	0%	98%	73	53	24	
7	58	Census Tract 8015	Prince George's County	931	\$68,125	15%	5%	72%	71	40	53	



#### **Step 6: Partner with the Red Cross!**



Pictured: Fairview Fire Department and Volunteers from Red Cross of Metro New York North



#### **Updates to Come**

Currently working on Version 2.0 of the Home Fire Risk Map in partnership with DataKind DC

- New Models (including addition of dollar loss to severity models)
- Better fidelity for state and local partner use
- Increased model precision and smaller focus areas (block groups vs. tracts)
- Plans to update map annually based on new data that becomes available

#### New release coming this Fall!



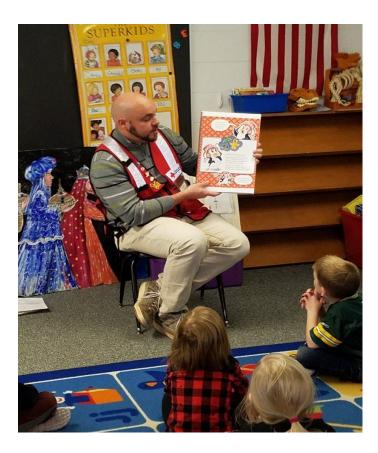
## Youth Preparedness Programs Overview







## Youth Preparedness Programs





Prepare with Pedro (K- grade 2)

The Pillowcase Project (Grades 3-5)



## The Pillowcase Project

- For 3<sup>rd</sup>-5<sup>th</sup> grade students
- Idea came from Southeast Louisiana Red Cross Chapter during Hurricane Katrina
- Trained presenters teach a 40-60-minute lesson about a local hazard, coping skills, and general emergency preparedness
- Students receive a pillowcase to decorate as an emergency kit along with a workbook and fabric marker
- Over 1.6 million students reached since 2015!







## **Prepare with Pedro**



- For kindergarten through 2<sup>nd</sup> grade students
- FY21 is first year of national implementation!
- Students receive a 30-45 minute lesson and a storybook to take home and share with their households
- Over 75,000 students reached since 2017!



## **Modified Program Implementation**









## Youth Resilience Resources





## **Connect with Us!**

Please reach out if you have any questions, would like additional resources or to connect with your local Red Cross chapter to schedule a presentation!

Sam.Johnson@redcross.org Youthprep@redcross.org Instagram: @redcrossforkids Monica.OwensDoyle@redcross.org



# **Questions?**



Please enter your questions in the Q & A pod





Please fill out our evaluation: <u>https://www.surveymonkey.com/r/S2ZRJD9</u>



at Education Development Center

Visit our website: <u>www.ChildrensSafetyNetwork.org</u>